Federal Housing Finance Board

Information Technology

Strategic Plan

2004-2009

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Introduction

The Information Systems and Technology Support Division (ISTS) operates and manages the computing infrastructure and applications development and operation in support of the Federal Housing Finance Board's (Finance Board) business operations. The Finance Board is an independent, non-appropriated fund Federal agency with total employment of about 100.

The Finance Board's Mission and Program Goals

Mission. The mission of the Finance Board is to ensure that the Federal Home Loan Banks are safe and sound so that they can serve as a reliable source of liquidity and funding for the nation's housing finance and community investment needs.

The Finance Board's Strategic Goals. The Finance Board has identified three strategic goals in supporting achievement of the agency's mission. These strategic goals are:

Strategic Goal 1: The Federal Housing Finance Board's program of bank supervision fosters safe and sound operations at each of the Federal Home Loan Banks.

Strategic Goal 2: The Federal Housing Finance Board ensures the Federal Home Loan Banks serve the nation's housing finance and community investment needs**.**

Strategic Goal 3: The Federal Housing Finance Board's supervisory, managerial and legal resources support effective, efficient and responsive bank supervision, regulation and housing mission oversight.

Information Technology Strategies Supporting Strategic Business Goals

The Finance Board Chief Information Officer and ISTS will support the Finance Board's strategic business goals with four major information technology initiatives. They are:

- An Information technology Investment Committee that will assure that information technology resources and investment are aligned with and support the agency's strategic business goals.

- An information technology infrastructure that efficiently and effectively supports business operations, and appropriately anticipates future needs.
- The design, development and operation of application systems that support business operations and provide necessary management information.
- An information security program that safeguards Finance Board and bank information, and that complies with the requirements of OMB Circular A-130 and the Federal Information Security Management Act (FISMA).

Information Technology Investment Committee

The Chairman established the Information Technology Investment Committee (ITIC) in 2002. The ITIC is composed of the Director of the Office of Management, the Director of the Office of Supervision and the Chief Information Officer. The ITIC is responsible for assuring that information technology initiatives are aligned with the Finance Board's business goals, recommending a budget for initiatives deemed consistent with business objectives, and periodically reviewing the progress of information technology investment projects. The establishment and operation of the ITIC complies with the requirements of the Clinger-Cohen Act that requires senior management evaluation and approval of an agency's information technology investments.

Infrastructure Support.

Because the agency's small size limited the number of staff that could be dedicated to information technology operations, it was an ongoing challenge to maintain an IT organization with the necessary range of technical skills. Maintaining training for evolving products and knowledgeable about emerging technologies also proved to be very difficult because of the obvious limitations on information technology staff resources.

In 2003, the operation and management of the Finance Board's information technology infrastructure support was outsourced to Advanced Technology Systems (ATS). This action, as expected, allowed ISTS to deliver the necessary IT infrastructure more efficiently and at lower cost than when these services were provided by Finance Board staff. FHFB can also take advantage of ATS's broad range of skilled IT personnel and resources to satisfy Finance Board requirements. These efficiencies and economies can occur because ATS skilled resources are also used to support other clients and are not dedicated to the Finance Board but can be engaged as necessary to support future Finance Board projects and initiatives.

ATS provides a full range of infrastructure support services to the Finance Board's IT environment. This includes administration and maintenance of all application, web, email, database and file servers (production and development) and telecommunications services to their off-site production and back-up facilities hosting Finance Board

equipment in a secure co-location environment. ATS also provides all end-user desktop and laptop workstations.

The infrastructure that has been designed and implemented will provide the flexibility that the Finance Board requires as its mission grows and changes. The Finance Board has already benefited from the technology within the new infrastructure, such as:

- Consolidating servers allowing the FHFB to have its own dedicated Disaster Recovery Facility (DRF) and an Emergency Operations Center (EOC).
- Enhancement of employee communication through the implementation of RIM Blackberry devices for wireless email and communication.
- Establishment of a remote server farm capability to FHFB employees providing more processing capability for resource intensive applications.
- Deployment of a new Virtual Private Network (VPN) solution, which now allows remote users such as bank examiners access to CRS during a VPN connection and allows the Helpdesk to remotely control agency workstations.
- Completion of a full desktop, laptop and network printer technology refresh, bringing the FHFB up-to-date with the latest versions of software on improved hardware

Goals for the future

Enhanced Telecommunications

Telecommunications continues to be an evolving and significant component of a modern computer infrastructure. In the future, ISTS will continue to implement new and innovative telecommunication solutions which are designed to assist the business units in achieving the mission of the agency. The two key areas of focus will be the replacement of the outdated telephone system with a state-of-the art and secure Voice over Internet Protocol (VoIP) solution for Headquarters. ISTS will also be piloting secure wireless networking for bank examinations in Fiscal Year (FY) 04. In addition, based on the flexibility and security of the network, ISTS will support an anticipated Telework program which will allow FHFB employees to work for remote locations as if they were at their desks. This is expected to be piloted and implemented in FY 05.

Continued support to meet evolving FHFB requirements

The business processes of FHFB will continue to evolve as changes to the financial sector occur.. It is expected that as FHFB moves forward, the current Microsoft centric environment may not have the flexibility to meet those requirements. ISTS is prepared to amend the standards to allow for additional technologies such as Unix, Linux and new data storage capabilities including data warehousing to meet the needs of the Office of Supervision. Data drives the business for FHFB, and the analysis and manipulation of that data is essential to the success of the organization.

As part of the ATS contract, ISTS has already taken steps to ensure the Finance Board remains current with the latest technology. To that end, ISTS has required ATS to execute a second full technology refresh within the course of its contract. It is expect that this next refresh will occur sometime in FY 07 and will provide all new laptops, desktops, monitors and network printers to all FHFB employees. It is expected at that time, the current server hardware and software will be outdated and require upgrading. ATS will provide FHFB with server hosting services as well. This will provide a server operating system and application refresh that will then be owned and managed by ATS through FY 09.

Applications Support.

Information Technology Vision and Goals

The planning and implementation of information technology at the Finance Board is based on an Enterprise architecture (EA) that offers the means to ensure that information technology is selected and deployed in a manner consistent with the agency's mission and in the most efficient and cost effective manner possible.

EA provides the link between the agency's mission and the technology that helps facilitate that mission. It serves as a "blueprint" to capture facts about the mission, functions, and business foundation in an understandable manner to promote better communication, planning and decision making

There are three parts to an EA:

 • Models of the agency's current business processes, the data used in those processes, and the technology infrastructure that currently supports the agency's mission.

 • Models of the desired processes, data and technology required to support the changing mission needs.

 • A transition plan to move from the current baseline model to the proposed target model.

The primary purpose of an EA is to *inform, guide,* and *constrain* the decisions of the agency, especially those related to IT investments. The true challenge of enterprise

engineering is to maintain the architecture as a primary authoritative resource for enterprise IT planning. This goal is not met via enforced policy, but by the value and utility of the information provided by the EA.

The EA is not a static document, and must be continuously reviewed and refined over time to adapt to a changing business environment.

The purpose of this approach is to ensure that applications are not disjointed and limited, and that information and information systems are appropriately shared throughout the agency. In deploying information systems, ISTS is committed to achieving the following key objectives:

- Overcome current deficiencies and limitations identified by the Program Offices.

- Eliminate existing duplicative data collection and usage by providing centralized, shared data access.

- Reduce time and cost of future initiatives by building modular systems that leverage existing technology and infrastructure.

- Utilize Internet and web technologies to simplify the submission, storage and retrieval of data making it easier for FHLBanks to meet their reporting obligations and allowing Finance Board staff to spend more time analyzing data and less time collecting and validating it.

- Maintain an information architecture that converts institutional knowledge to a business asset.

The Integrated Application Development Vision

 The Integrated Application Development (IAD) project initiated the Finance Board's effort to apply EA concepts, and began with the analysis and documentation of the agency's current business processes.

Prior to the IAD project, the information collected by the Federal Housing Finance Board was disjointed and not easily accessible by Finance Board staff or other users. In addition, collection of the data from the FHLBanks was burdensome to staff at the Banks, and difficult to manage at the Finance Board. The Integrated Application Development project (IAD) was designed to correct these problems and provide a platform for future improvements to data management.

The IAD effort identified several core business areas that are now at various stages of the system development lifecycle. Analysis of these business areas resulted in the development of an as-is model or "blueprint" describing how and what information is currently used throughout the agency.

Description of Current IAD Efforts

CALL REPORT .   The Call Report System (CRS) was implemented in February 2001 as a result of an urgent need to replace the outdated VAX-based legacy application in use at the Finance Board. CRS allows the 12 FHLBanks to submit monthly and quarterly call reports using a secure Internet connection. Access to data is greatly simplified, and changes required as a result of new programmatic requirements are easy to make.

MEMBERSHIP . This module of IAD maintains current financial information on advances and capital stock for all member institutions. The system consists of approximately 8000 records with 40 data fields per record. The reporting cycle for Membership data is quarterly, however FHLBanks are required to enter new member (termed new approval) information as it occurs throughout the reporting period. Finance Board staff review both the quarterly and new member information and accept or reject the information provided. In addition, the Membership module imports financial and demographic data from Plansmith's FIRE; this is done quarterly, and is used as part of the profile review process. FHLBank users will enter quarterly detail and activities either interactively or by sending a batch file to the system. Any rejected transactions can then be edited on-line and resubmitted. FHLBank users can also enter member profile changes directly into the system using the same access path. The Membership system is currently in production.

DESIGNATION OF DIRECTORSHIP.   Annually, the FHFB Board of Directors determines the number of director seats on the board of each FHLBank. The Designation of Directorship (DOD) module provides for a submission from the Banks to the Finance Board (using the web-enabled reporting tool). Upon receipt of the list, this module reconciles the data with the Membership data and provides notification back to the Banks of final approval. This system module is planned for deployment in March 2004.

AFFORDABLE HOUSING PROGRAM.   By statute, each FHLBank must contribute 10% of their earnings or a minimum of $100 million per year to fund the Affordable Housing Program (AHP). Currently the Finance Board collects this information periodically via an MS Access based system that is outdated and inefficient.

COMMUNITY INVESTMENT CASH ADVANCE PROGRAM . CICA data is currently collected via spreadsheets emailed by the Banks to the Finance Board. The reporting cycle is at least semi-annually, but may be reported at any time.

COMMUNITY SUPPORT PROGRAM.   The initial part of the CSP program involves selecting members to be reviewed. Reviews are conducted during two-year periods called cycles. A member will be reviewed at most once per cycle. The cycle is divided into eight rounds.   Each round, the Finance Board selects a portion of an FHLBank's members that meet certain criteria to review for community support.   The list of members to be reviewed in a given round is called the selection list. Once both the

Finance Board and the appropriate FHLBank approve the selection list, it is printed in the Federal Register and serves as the official notice.

The second part of the CSP program involves evaluating the members that were selected in a given round. Members are evaluated based on their response to a Community Support Statement (CSS Form). The statement is composed of two main parts: a member's CRA rating and evidence of supporting first time homebuyers. Based on the response to these two sections, the member will receive a CSP disposition of pass, probation, or restriction. The disposition impacts a member's access to long-term advances.

ACQUIRED MEMBER ASSET   Pursuant to § 955.4 of the Finance Board's Acquired Member Asset (AMA) Regulation (AMA Regulation), each FHLBank that acquires AMA that are residential mortgages shall submit to the Finance Board a mortgage report every quarter. The AMA Regulation specifies that each quarterly mortgage report shall include an aggregation of loan-level data. The format of this aggregate data submission, was set forward in AB 01-6 and should be used for the aggregate data submission for the second and fourth quarter reports. AMA data is currently collected via floppy disks or CDs that are mailed from the FHLBanks to the Finance Board and stored as spreadsheet files and SAS data sets.

FEDERAL HOME LOAN BANK SYSTEM DIRECTORY.   The FHLBank System Directory is maintained by the Finance Board and includes the names, titles, addresses, and communication numbers for the officers, directors, and senior staff members of the 12 Federal Home Loan Banks and associated institutions. Currently, the directory information is updated and printed annually. Any interim changes are sent to the Finance Board and changes are made to a file maintained as a PDF file. In the new system, the Directory module will allow real time, web-based access to the most current data, and all approved users can view and download reports through a web interface. Bank staff assigned the task of maintaining these data will have full-time access and the ability to create reports at their discretion.

The Future of IAD

The Office of Supervision has increased its focus on safety and soundness, substantially increasing the need for additional information resources. Several new sources of data have been identified and will require new systems and tools for collection, management, analysis and reporting.

In addition, AHP, CICA, AMA, and CRS data requirements are under review to assure that the information currently collected supports the agency's mission. The existing IAD architecture is now being used to help facilitate this analysis.

The IAD process will continue to serve as the method for managing the selection and implementation of the technology needed to meet these new requirements. The Finance Board will develop a technology architecture that will facilitate the collection and sharing

of data at an enterprise level. It will incorporate Internet, database and data warehousing technologies to provide a flexible, scalable system for accessing and sharing information.

As stated in its business goals, the Federal Housing Finance Board is committed to providing a program of bank supervision that fosters safe and sound operations at each of the Federal Home Loan Banks; ensures the Federal Home Loan Banks serve the nation's housing finance and community investment needs; and ensures that the Finance Board's supervisory, managerial and legal resources support effective, efficient and responsive bank supervision, regulation and housing mission oversight.

Achievement of these goals is highly dependent on effective data management, and the ability to provide the timely, accurate and complete information each business area needs. Technology is crucial in this regard, but to be used successfully technology decisions must remain aligned with the agency's mission. The business needs of the agency should drive the design and implementation of information systems. To accomplish this, ISTS will focus on the following areas:

- Work closely with each functional area of the agency by conducting formal analysis sessions to understand and document the business requirements of each group in accordance with IAD methodologies.
- Use the resulting business model to drive the design and selection of technology solutions.
- Analyze business requirements collectively at an enterprise level and develop a proposed "to-be" technical model that correlates to the business model.
- Use the enterprise architecture to guide the deployment of systems that meet the needs of each core business area while leveraging existing technologies and sharing data.
- Implement and support the technologies and systems needed to manage the data collection, analysis and reporting requirements of the agency.
- Implement and support the technologies and systems needed for the internal operations and management of the agency.

One of the first initiatives in the application area will be the development and implementation of an Enterprise Data Repository. This EDR will be system-neutral—data will arrive in the warehouse directly from FHLBanks or over a feed from an existing system. As such, the ERD does not do away with the need for systems, but rather allows users to better determine from experience how much future data process automation might be useful or necessary It will, however, render unnecessary any current or proposed system whose primary function is simply collecting and reporting data.

An Effective Information Security Program

The Finance Board will develop an information security program to support and enforce the information security policy. The information security program will include a framework of policies and operating procedures, many of which are already in place, and it will be in compliance with the requirements of OMB Circular A-130 and FISMA.

The small size of the Finance Board poses special challenges in complying with the numerous system and reporting requirements contained in OMB Circular A-130 and FISMA. However, the Finance Board's Information security Program has been planned and implemented to assure that all of the components of an effective information security program are covered.

The basic nature of the Finance Board's business operations is bank examination. The nature of this business requirement results in a large proportion of users connecting to the Finance Board network from remote locations. Special infrastructure and security planning is necessary to safeguard information resources in this environment.

Information Security Program Components

The following information security program components will, when fully implemented, help to assure protection of agency, FHLBank and member institution information and computing resources:

- Security Plans for General Support Systems (GSS) and
    Major Applications (MA)
- Systems Risk Assessments
- Systems Certification
- Systems Accreditation
- Computer Security Incident Response Capability
- Awareness and Training Program

Security Plans. The completion of security plans for General Support Systems and Major Applications is a requirement of OMB Circular A-130 and the Computer Security Act of 1987. Security plans will: provide an overview of the security requirements of the system; describe the controls in place or planned to meet those requirements; and, delineate responsibilities and expected behavior of all individuals who access the system.

Risk Assessments. Risk assessment is the review of threats and vulnerabilities to systems. Typically, risk assessments include the identification of managerial, operational and technical controls to mitigate identified risks. Mitigation techniques must be cost effective and system owners/managers must make those decisions.

Certification. Certification is the technical evaluation and testing that establishes whether a computer system, application or network meets the security requirements specified in security plans.

Accreditation. Synonymous with the term "authorize processing," accreditation is the approval granted by the management official responsible for the business process for a Major Application or General Support System to operate in a production environment. Accreditation occurs based on certification results and their acceptance by the accrediting official.

Computer Security Incident Response Capability (CSIRC). Computer security *incidents* are any occurrence that compromises the confidentiality, integrity or availability of agency information resources. For the most part, such incidents usually involve malicious code or unauthorized intrusion attempts.

 The Finance Board will have a CSIRC operations guide specifying responsibilities and procedures designed to prevent, detect and eradicate computer viruses and other malicious code. Processes and procedures to monitor and prevent unauthorized intrusion of the Finance Board network will be included in CIRC responsibilities.

Information Security Awareness and Training. OMB Circular A-130 and FISMA place heavy emphasis on awareness and training. Training required includes: periodic training (usually annual) for all employees and contractors; and specialized training for individuals with special information security responsibilities. A web-based training program with self-certification will be created and implemented to satisfy minimum requirements for annual training for all employees and contractors as required in the existing Finance Board Information Security Training Plan.

Information Security Program Plan of Action

The first four components of the Information Security Plan, i.e., security plans, risk assessments, system certification and system accreditation, will be completed as a "package" for the GSS each MA. These four activities are discrete functions, but because the Finance Board is a small agency with few critical systems, they will be developed as part of a unified program.

Sequentially, the work will proceed as follows:
- Confirm the identification of each GSS and MA with appropriate Office Directors.
- Conduct a *risk assessment* to establish system sensitivity and criticality, and the magnitude of damage/loss/harm to the Finance Board that could result because of system vulnerability.
- Prepare a system *security plan* that identifies the system operating environment, risks/vulnerabilities and cost-effective security controls and risk mitigation strategies.

- Test system operation with security controls in place. Successful testing results in system *certification.*
- Secure approval for the operation of the system in the production environment from the business unit manager that owns the system. The approval constitutes *accreditation.*

The remaining two components of the plan, a *Computer Security Incident Response Capability (CSIRC)* and *Information Security Awareness and Training* have no interdependencies with the other components and work may be done on them simultaneously with the other component work.

CSIRC work will consist of modifying an existing document titled Computer Security Incident Response Team Plan. The awareness and training program work will include development of a web-based training program that satisfies initial and annual training requirements for all employees and contractors.

The information security program components will be developed using the appropriate National Institute of Standards and Technology (NIST) guidance, especially, but not limited to, the NIST Special Publications Series 800.

In addition to the components of the information security program described above, FISMA includes a requirement that agencies demonstrate that information security is integrated into the capital planning process. The Finance Board's information security program will address this requirement by building it into the existing capital planning and investment review process.