

Chapter 4

Check Modernization

In recent years, the Federal Reserve Banks have explored ways of modernizing their check-processing systems to expand the services they offer and improve operational efficiency. In late 1999, they began the multiyear check modernization initiative, which will result in the standardization of check processing at all Reserve Banks, the adoption of common software for processing and researching check-adjustment cases, the creation of a national system for archiving and retrieving check images, and the delivery of check services to depository institutions via the Internet.

Check modernization will directly affect approximately 5,500 Federal Reserve employees and 8,000 depository institutions and will substantially alter the infrastructure of the Reserve Banks' check service line. The four projects that make up the initiative are expected to result in capital expenditures of approximately \$90 million and total expenses of approximately \$250 million over five years, from 2000 through 2004. These costs are expected to be offset, over the long run, by more cost-effective operations and by additional revenue from new product offerings.

Background

The Federal Reserve Banks currently process checks, resolve adjustment requests, and provide image-based check services using multiple hardware and software platforms. They also provide remote access and delivery of certain check services using a technologically

outdated platform. Adjustments, imaging, and electronic delivery are key check-related services, but the core function on which they rely is check processing. Accordingly, the effort to implement a standard check-processing platform is the most significant component of the check modernization initiative.

Currently, seven Reserve Banks use a Unisys check-processing platform at twenty-six sites, and five Reserve Banks use an IBM check-processing platform at nineteen sites. The Reserve Banks also use a combination of internally developed and vendor-provided software applications. The Unisys-based Reserve Banks use local Unisys mainframe computers to process checks. Four IBM-based Reserve Banks use data-processing services provided by Federal Reserve Automation Services, and the fifth uses a local mainframe computer to run its check-processing system.

As check-processing technology has advanced, vendors have begun to discontinue support for older equipment and software. The high cost of replacing some of the older systems prompted the Reserve Banks in 1997 to begin reviewing their check automation options. At the same time, the Reserve Banks faced changes in the market as depository institutions began to demand greater uniformity in the products and services provided by the Reserve Banks. Consolidation within the banking industry has had a major effect on customer demand. For example, many depository institutions have come to expect the Reserve Banks to provide uniform services, using the latest check-processing technologies and without significant fee

increases, so that the depository institutions, in turn, can provide their customers with similar services nationwide. To keep up with changing market demands and remain a viable provider of payment services, the Reserve Banks must improve their ability to bring innovative products to the market quickly.

The Reserve Banks' current check-processing infrastructure, however, hampers their ability to implement new technologies rapidly and roll out new national products to meet customer demand. This inability may be attributed, at least in part, to the independence that each Reserve Bank has historically exercised in building its check-processing infrastructure and in shaping its product offerings to accommodate customer demand. This independence has resulted in a large number of software applications, each with District-specific variations. In the current environment, to offer a new national product to meet a particular market need, the Reserve Banks might have to modify hardware and software configurations in up to forty-five check-processing sites across the nation.

Check Modernization Projects

The check modernization initiative comprises four projects—check standardization, enterprisewide adjustments, image services system, and electronic access and delivery. Collectively, these projects will reduce the time needed to develop and deploy new products; facilitate the move to electronic payments; improve the overall consistency, quality, and flexibility of the services delivered to depository institutions; and improve the cost-effectiveness of Federal Reserve check services over the long run.

Check Standardization

The primary strategy of the check modernization initiative is to replace the current network of twelve relatively independent check-processing systems with a standard platform in all twelve Banks. The key to accomplishing this goal lies in the check-processing software. The core components of a check-processing system are check sorters, which electronically capture data from checks as the checks are physically sorted, and software, which drives the sorters and manages the captured data. The software is the primary driver of a platform's functionality and its ability to interface with other applications. Although the Reserve Banks currently use only two basic types of check-processing systems, each Reserve Bank uses a variety of software packages to enhance the functionality of these systems.

In the check standardization project, standard check-processing software will be installed at all forty-five processing sites. The check-processing system used at these sites will be centrally managed and will support a uniform set of products nationwide. Once they have converted to the standard platform, the Reserve Banks will be able to operate multiple types of check-sorting hardware using the same software.

The check standardization project is the most complex of the four check modernization projects and is expected to take nearly four years to complete, with the last site converting to the standard platform in 2003. Capital outlays for the project are expected to total approximately \$60 million, and expenses are expected to total slightly more than \$200 million through the end of the project in 2004. Concurrent with the project, the Reserve Banks will be required to upgrade many of their

high-speed check sorters as vendors discontinue support for older models. Although these upgrades will be coordinated with the check standardization project, they are not included in the project budget because the upgrades would have been necessary even without the check modernization initiative. For several Reserve Banks, these upgrades will constitute a significant portion of their 2001 capital expenditures.

Enterprisewide Adjustments

The enterprisewide adjustments (EWA) project will streamline the process for researching and resolving check adjustments by creating a centrally managed, enterprisewide adjustment system. The adjustments process deals with the exceptions that inevitably occur during the normal course of processing checks—checks processed for the wrong dollar amount, lost checks, and the like. Because these errors are generally detected after a depository institution has settled with a Reserve Bank, the depository institution submits an adjustment request for an offsetting debit or credit to resolve the difference.

The adjustment process has historically been manual and labor-intensive. Over the past decade, automated systems have been developed that manage and aid in researching adjustment requests and create accounting entries. In addition, depository institutions can now submit adjustment requests electronically. Although all Reserve Banks can receive the electronic requests, some Banks must print out the requests and manually enter them into an adjustment tracking system, delaying the research and resolution of the cases. When fully installed, the EWA system will not only fully automate the adjustment request process, but will also allow adjustment requests received by any Reserve Bank

site to be processed by any other Reserve Bank site, thus relieving backlogs.

By the end of 2000, the EWA system had been installed in twenty-six of the forty-three Reserve Bank sites that process adjustment requests. The remaining sites will be converted to the new system by June 2002. Capital outlays for the EWA project are expected to total slightly more than \$4 million, and expenses are expected to total approximately \$14 million through the end of the project in 2002.

Image Services System

The image services system (ISS) project will redesign the current image-processing infrastructure to produce a nationwide, centrally managed system for the storage and retrieval of check images. This project leverages one of the newest technologies to gain widespread use in check processing—digital imaging. As checks are processed, cameras on the sorter capture digital images of each check. These digital images can be stored in an archive at a Reserve Bank or delivered to a depository institution by CD-ROM or magnetic tape. Depository institutions use these images in lieu of the original checks in various ways, including creating image statements, enabling account holders to access images of their checks either on CD-ROM or over the Internet, and archiving the images for future research.

The Reserve Banks have been using different hardware and software to capture and store check images and, as a result, often deliver images in different formats. The ISS project will allow Reserve Banks to offer a standard format for image files across all sites. It will also establish regional archive sites that will allow each Reserve Bank site to

continue capturing images locally but will consolidate the storage of images to achieve greater economies of scale. The new infrastructure will enable Reserve Bank staff and depository institutions throughout the nation to retrieve images captured at any Reserve Bank site.

The ISS project began in 2000, with the first installation scheduled for early 2001. All sites are scheduled to convert to the new system by the end of 2002. Capital outlays for the project are expected to total approximately \$27 million, and expenses are expected to total approximately \$22 million through the end of the project in 2002.¹

Electronic Access and Delivery

The electronic access and delivery (EA&D) project will convert check services from the current PC-based FedLine platform to a “FedLine for the Web” platform. The new platform will reduce the Reserve Banks’ reliance on an outdated DOS platform, in use since the early 1980s, and provide opportunities for offering new services over the web. FedLine provides depository institutions with a secure connection to Reserve Bank computer networks so they can use certain transactional and informational services, including wire transfers, automated clearinghouse (ACH) transactions, electronic check presentment files, and access to account balance information. The current FedLine platform limits access to computers equipped with certain encryption devices. The EA&D project will give depository institutions the option of using FedLine for the Web for electronic access to and

delivery of check services from almost any location.

The Reserve Banks are currently converting all applications on the current DOS-based FedLine system to either Windows- or web-based applications, depending on the requirements of each application. The EA&D project is scheduled to have web-based services available by the second quarter of 2001, at which time the Reserve Banks will begin assisting customers with the transition to the new platform. Capital outlays for the project are expected to total slightly more than \$2 million, and expenses are expected to total slightly more than \$6 million through 2001.

Project Management

Management of the check modernization initiative is structured to ensure that the schedules of these four interrelated and virtually concurrent projects are coordinated, that interproject issues are resolved, and that the financial and operational risks to the check service line are managed. Central project teams, made up of staff from multiple Reserve Banks, are responsible for individual projects. A central management team, made up of the four project leaders and representatives from key groups, including the Reserve Banks’ Retail Payments Office, Board staff, Reserve Bank internal audit, and Federal Reserve Automation Services, is responsible for overseeing the four projects and ensuring that the projects’ goals are achieved.

In addition, each of the Reserve Banks has a District transition manager, who is responsible for coordinating the four projects in that District. Each District transition manager is supported by up to four coordinators, who are responsible for coordinating one of the four projects with the central project teams. This structure is designed

1. Capital outlays exceed expenses over the life of the ISS project because capitalized expenditures will not be fully depreciated by the end of the project.

to provide consistent communication on key issues and to mitigate some of the risks in managing such a large initiative.

Anticipated Benefits

The check modernization initiative is intended to position the Reserve Banks to meet the challenges of the changing payment services environment in a number of ways. First, the standardization of the check-processing infrastructure will result in the uniform adoption of new technologies across the Federal Reserve System. Second, maintaining and managing a single processing infrastructure should improve the operational efficiency and cost-effectiveness of the check services over the long run. Third, the standard infrastructure will improve the consistency, quality, and uniformity of the check services that Reserve Banks deliver to their customers and allow the system to be modified more efficiently

and new services to be developed and deployed more quickly. Finally, the standardization of the check-processing infrastructure will facilitate Reserve Banks' efforts to support national initiatives to promote electronic check presentment.

The check modernization initiative will also allow Reserve Banks to adjust their processing infrastructure in response to external market conditions. Consolidation within the banking industry and in the operating structures within depository institutions will likely continue to result in significant shifts in check volumes among Reserve Bank processing sites. Further, technological and regulatory changes may result in increased reliance on electronic payment alternatives. The standard processing environment is designed to allow Reserve Banks to adapt more rapidly and efficiently to these types of changes in the check-processing environment. ■