

PRE-PUBLICATION RELEASE

**BRIDGING THE GAP: IMPROVING SSA'S PUBLIC
SERVICE THROUGH TECHNOLOGY**

SOCIAL SECURITY ADVISORY BOARD

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A Brief History of Systems Development at SSA

Systems development at the Social Security Administration had an auspicious beginning. In the early days of the agency, SSA paid a great deal of attention to the design of efficient processing systems. In 1936 when the Social Security Board considered the original bids for equipment to handle wage reporting, IBM was selected because its proposal alone was based on electronic processing. This put SSA's 1930s' recordkeeping operations at the cutting edge of technology. The work was not done by long rows of clerks manually recording workers' wages in large ledger books; rather the work was done by card punch operators, sorting machines, accounting machines, posting machines and electronic collators. All of these were the direct descendent of the "electro-mechanical tabulator" invented by Herman Hollerith for use in tabulating the 1890 Census. While the staff at Social Security did not invent this equipment, they recognized the potential for its adaptation to the task at hand.

In 1946, the University of Pennsylvania unveiled the first electronic computer. This machine was fed its information and instructions with just the sort of punch cards that SSA was already using and agency executives immediately saw the potential for moving the agency up the technology ladder. While these early computers were designed to solve computational problems and were not oriented toward administrative tasks, Social Security managers pushed the industry to develop this capability. The agency's first computers—essentially electronic calculators—were acquired in 1951. By the early 1950s, magnetic tape storage was coming online with tremendous benefits—one 10-inch reel could hold the equivalent of 60,000 data cards. In March 1956, Social Security brought on line its first real computer and began posting workers' records on magnetic tape, performing benefit computations and reinstating incorrectly reported earnings.

At the middle of the last century, the agency was considered a pioneer in systems automation. The agency maintained this reputation as a technology leader into the 1960s, but by the early 1970s, planning and investment in technology had essentially stopped. By 1974, the agency's systems infrastructure was stressed to the breaking point—conditions not so different from those that exist today. In 1978, SSA's newest computer was built in 1964—a 14-year gap in IT investment. To address the critical state of its systems, SSA published a Systems Modernization Plan in 1982 to call attention to the desperate conditions and delineate actions needed to renovate that infrastructure. Under this plan, the agency upgraded its hardware to increase capacity, installed its first "dumb" terminals, and set up, what was for the time, a sizeable national telecommunications system.

Message from the Board

When the *Social Security Independence and Program Improvements Act* was signed in 1994, one of the mandates to this Board was to review and make recommendations with respect to the quality of service that the Social Security Administration (SSA) provides to the American public. Over the last fifteen years, the Board has, on a number of occasions and in a variety of reports, commented on the agency's service delivery challenges and urged its executives to make changes that would improve public service options. Many of these recommendations pointed out that if the agency had any hope of keeping pace with the growing demand for service, technology must be creatively and thoroughly utilized in the development of future processes.

Yet, in these past fifteen years, SSA's technology infrastructure and the development of its systems have not changed all that much. The agency has relied on a single computer center to deliver its primary computing capability. While a second data center was recently built, it will not be fully functional for another three years. The agency's databases are grounded in a 30 year old in-house developed system that utilizes COBOL, a programming language that is generally viewed as obsolete by the computer industry. Many of the main processing systems at the agency still employ "green screen" technology which was the predominant technology used in the 1970s and 1980s. Systems development is traditionally carried out in "silos" that mirror the organizational structure and has left users with a hodgepodge of disjointed systems that do not share data. Development of electronic services has been, at best, an afterthought, and it is only recently that a change in culture has led to a broader vision for these services. And all of this is teetering on a backup and recovery plan that SSA has acknowledged is seriously deficient.

Today, the effective use of technology is a cornerstone of quality service delivery. As we talked with agency officials and studied the agency's use of information technology (IT), we determined that it was essential to look at comparable public and private sector experiences. Many organizations have made remarkable progress through the use of multiple electronic service delivery channels based on modern database platforms. One only has to look at agencies such as the IRS to see how technology can revolutionize service delivery. By stepping out with a strategic vision and embracing innovative technology solutions, such transformation is possible and absolutely necessary. Despite serious infrastructure problems, we believe that some of the new IT initiatives SSA has recently embraced signal the start of a transformational change at the agency.

SSA is at a critical juncture. Our purpose in developing this report is to issue a call to action: to urge in the strongest way possible that SSA needs to move more quickly in order to prevent further deterioration in the agency's ability to provide service. Moreover, they must develop and implement an IT modernization plan based on a clear strategic vision of the future. We are encouraged that the agency is responding to many of the concerns raised in this report. There is much that remains to be done to establish a truly robust and modern IT infrastructure that will truly support service delivery in the 21st Century and time may be running short.

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Executive Summary

The American public relies on the Social Security Administration (SSA) to deliver its services in a timely and effective fashion. Traditionally, the agency has been a community-based agency where face-to-face contact is the hallmark and primary means of delivering quality service. Currently, SSA uses a variety of technologies including telephone service, the internet, and expanding videoconferencing technology to serve its customers. The issue that the agency faces today is how to effectively expand its current use of technology to meet the service challenges of the 21st Century. While SSA has expanded its service options over the last twenty years, the agency, for a variety of reasons, has not always kept pace with the growing expectations that the American public has of the Social Security programs. This report will examine some of the problems SSA has with its current technology infrastructure, suggest changes to its governance structure, and urge a more complete integration of the agency's vision with its business and system development processes. The report will also suggest ways in which SSA can further improve the development of new tools that will better serve the American public.

Current Issues Related to the IT Infrastructure of the Social Security Administration

SSA is now confronted with two extremely critical issues: the vulnerability of the physical plant of the National Computer Center and the agency's backup and recovery capability. SSA's main computer operation center, the National Computer Center, (NCC), is a thirty year old facility located on the agency's main campus in Baltimore. While the facility's computing capacity has been expanded over the year, increasing workloads and expanding telecommunication services are now severely straining the NCC's ability to support the agency's business. By 2012, SSA estimates that the NCC, as a stand-alone data center, will no longer be able to support the expanding server environment. Storage capacity alone is expected to increase from roughly 500 terabytes to almost 1800 terabytes in five years. Additionally, significant structural problems and electrical capacity issues have developed that now make the construction of a new primary computer center imperative; however, the agency has projected that this new facility could not be brought online before 2016.

With the ongoing status of the NCC in question, the agency's ability to recover operational capability in the event of a disaster is increasingly at risk. Current disaster recovery plans utilize private backup and recovery facilities at an offsite location that would allow for the recovery of only 25 to 30 percent of the agency's production capacity. To address both the capacity issues at the NCC and the need for more comprehensive recovery capability, SSA recently completed construction of a second data center which is designed to handle about 50 percent of the work currently processed at the NCC on a routine basis with sufficient capacity and space to handle 100 percent of the agency's workloads in the event of a disaster. Although the agency took occupancy of the new center in January 2009, full functionality will not be achieved until early 2013.

Beyond problems with the physical infrastructure, the systems the agency uses to process its workloads are an assortment of disjointed tools that lack the integration needed for truly efficient processing. Some of the most significant problems with these systems are the consequence of a piecemeal approach to systems development. Software applications have, in the past, been

developed in vertical stovepipes, usually to address a particular programmatic need such as representative payee or prisoner tracking systems. The results are, in many ways, predictable—redundant keying is necessary because data does not pass from one system to the next; “bridges” or links must be established in order for these systems to “talk” to each other; and workarounds—multiple steps required to force the system to take an action—are needed to accomplish what should have been a one-step process. And with the addition of each new system, SSA employees report that their ability to provide service deteriorates due to slow systems response times as well as lost time when the systems are unavailable.

The development and modernization of the agency’s processing systems is also constrained to a significant degree by SSA’s database infrastructure—a thirty year old system called MADAM (Master Data Access Method) which was developed in-house. The system has been called “obsolete” and “functionally primitive” because the code that underpins the database programming is the Common Business-Oriented Language (COBOL). COBOL is considered an archaic programming language by most IT professionals and has not been an industry standard for many years.¹

This antiquated infrastructure leaves the agency vulnerable in a number of ways. SSA must rely on in-house trained technicians to support custom-built systems and in the event of an emergency there is little chance of outside industry support. Until the agency stores and processes its data operation on a modern database platform, the agency will be unable to consider certain service expansions. For example effective 24/7 service cannot be provided because these databases must be taken offline daily to perform routine backups that preclude access for significant periods of time. To its credit, the agency has embarked in the last two years on a plan to migrate from MADAM to a new database system, but the conversion has been spread out over at least the next five years. Given the risks involved in continuing to use MADAM, the agency should determine how it can accelerate the current conversion process.

In addition to problems with its processing systems, the agency faces major challenges with its ability to deliver service via its telephone systems. Currently, telephone service is offered through both a national, toll-free 800-number telephone network and telephone service at local field offices. While currently handling about 58 to 60 million calls per year, call volumes to the 800-number network are estimated to climb to 68 million by 2010. Even with the introduction of automated services, this demand is outpacing the agency’s ability to provide resources to deliver telephone service. Busy rates and unanswered messages are climbing in the field office as well.

SSA has recognized the inadequacy of its telephone operations and has taken steps to address the situation. In March 2008, the agency awarded a contract to build a Voice-over-Internet-Protocol (VOIP) telephone system for about 1,600 field installations and is considering how to modernize and expand the 800-number network. VOIP, which uses a high-speed connection to place telephone calls through the internet, is being marketed within the agency as a telephone system replacement project while much of its advanced functionality is designated for future

¹ *Social Security Administration Electronic Service Provision: A Strategic Assessment*. National Research Council, 2007. The NRC states that COBOL is the oldest business-oriented programming language in the history of computing, is generally considered to be obsolete and is only understood by smaller and smaller fraction of the practitioner community.

consideration. Though the Board is hopeful that this new technology will achieve its potential, there is concern that the five year phased rollout of this entire project will be superseded by newer technology with even greater capabilities. There is great promise from this technology, but a sense of urgency is needed.

Foundation for a Successful IT Program

While the technical problems of the SSA's infrastructure are critical and must be addressed sooner rather than later, there are underlying problems including a lack of strategic vision and problems with IT governance that have contributed to the current state of the agency's infrastructure. Unless the agency addresses these two fundamental issues they may continue to experience critical IT issues that impede their ability to deliver effective service.

In the past, SSA considered the factors that influence service delivery and, in response, set out comprehensive, ambitious vision statements for the future. These past strategic plans contained both a long-range vision for the agency as well as high-level strategic objectives that could be used to guide all other business and tactical planning throughout the agency. In each of these plans, changes in societal factors and business services were assessed, emerging technologies were appraised and strategic recommendations were developed for implementation over the coming decade. The agency's most recent strategic plan, released in September 2008, lays out four high level goals which focus more on finding short-term solutions to existing problems. In truth, this plan is more tactical than strategic.

Future IT plans traditionally have been published in the annual Information Resources Management (IRM) plan which serves as the agency's strategic IT blueprint. But, in 2008, SSA developed a separate IT vision statement, an effort that appears to be an acknowledgement that the agency understands the importance of further developing an overarching IT plan. While the plan delineates the development and implementation timeline for major initiatives, it does not consistently define anticipated outcomes in terms of operations efficiencies.

It is not just the lack of effective planning that is in question; it is also the lack of an effective IT governance process to oversee planning and development. The governance of IT investments at SSA is a decentralized process. Most of the IT functions—investment planning, systems acquisition and development, oversight of the enterprise architecture and security—are divided between the Chief Information Officer and the Deputy Commissioner for Systems. Resource allocation for systems initiatives are the responsibility of the Information Technology Advisory Board (ITAB) whose membership is comprised of representatives from all Deputy Commissioner-level components. While this process was originally developed as a way to ensure transparency, it appears to have resulted more in a dilution of ownership of the IT strategy. Further, through the intensive lobbying by project sponsors, this planning process can and has been manipulated with the result that funding decisions can be driven more by internal politics than by the agency strategic goals.

Changing Landscape Must be Addressed to Ensure a Successful Future

As the Social Security Administration looks to the future, the sheer volumes of current and future workloads are certainly the primary consideration driving the need for new and improved IT strategies. But in considering changes to the agency's IT strategy, SSA must look at all the factors that affect their operations now and in years to come. To assist with this assessment, there are a number of perspectives that should be taken into consideration.

Future Congresses and Administrations may be facing resource constraints more austere than anything experienced in generations. At this same time, SSA will be one of many agencies asking for increased budgets just to maintain current levels of service. For fiscal year 2008, SSA's IT budget for both equipment and services was \$686 million. Roughly 70 percent or \$482 million of the IT budget was spent for infrastructure maintenance just to keep current systems operating. Given the current budget scenario, SSA cannot fund the major multi-year systems modernization efforts from its annual IT budget. For these major systems projects such as the conversion to a modern database platform or development of a common disability processing system, the case must be made for a temporary multi-year capital fund.

As SSA evaluates its IT future, a critical look at what the agency's external customers are saying about the services the agency delivers is needed. Measurements of customer satisfaction are useful for shedding light on how well the customer has been served and learning what needs to be improved. Beyond "customer satisfaction," there must be an evaluation of what is not working or what is causing these customers difficulty when dealing with the agency. In addition to addressing problems, the agency must assess customer needs and expectations, especially with regard to technology-driven service channels such as the internet, telephone systems, and videoconferencing. SSA's vast network of over 1,600 offices makes up a community-based structure unlike any other federal agency; this network can provide valuable insights into customers' needs and expectations. Understanding customer needs and expectations and acting quickly to address their concerns can have major implications for any government agency; for SSA, it means that the public will maintain its confidence in the accuracy and timeliness of all the agency's services.

Acknowledging the ongoing changes to its customer base is another important step in developing a new IT strategy for SSA. Demographic changes alone will require significant restructuring of the agency's service channels. By 2030, when all of the baby boomers will be 65 or older, nearly one in five U.S. residents is expected to be 65 or older. Agency projections estimate that over 80 million people will file for retirement benefits over the next 20 years! In addition to the aging population, the 2008 Trustees Report estimated the net immigration rate (legal and other combined) would average 1,070,000 persons per year during the 75-year projection period.² The level of education and technological knowledge of the customer base also must be considered. More and more, studies are reporting that older adults are using the internet and this growing technology-based environment offers SSA important opportunities to provide services in new ways that meet their demands and expectations.

² *The 2008 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, pg. 70.

An independent appraisal of the agency's IT strategy is also important to determine where the agency stands with regard to the use of technology. In 2005, the agency asked the National Research Council (NRC) for just such an evaluation. In their final report, the NRC called for what amounts to a cultural change with respect to how the agency views technology and, in particular, electronic services. Researchers discussed two perspectives that are culturally intrinsic to SSA. First of all, SSA tends to see itself as unique, when in fact it is similar to many large-scale private sector organizations. Further, researchers reported that SSA still essentially believes that good service is face-to-face service while online services are too impersonal. As a consequence, SSA has not yet fully integrated electronic services into the agency's overall operational culture. In their recommendations, the NRC researchers urged the agency to make a clear commitment to electronic services as part of an overall service delivery strategy. Given some of the initiatives SSA has undertaken in the two years since the release of the report—the redesign of its website, implementation of new user-friendly benefit applications, and additional online services—the agency is moving forward with an integrated electronic strategy.

As the NRC stated, SSA sees itself as unique in terms of the scope of its systems development, the size of its databases and the volume of its workloads. However, there are many large private sector organizations with service structures that use technology in a manner similar to Social Security. Likewise, there are other federal agencies with large-scale public service missions that have been confronted with challenges similar to the ones SSA faces. Both groups could provide insight into successfully managing major technological change. In discussions with several public and private sector chief information officers, business managers, and strategic planners who have had success in managing their IT investments, several essential principles emerged:

- the establishment of a centralized governance process responsible for carrying out the enterprise-wide strategic vision,
- business plans and IT initiatives that are integrated and support that vision,
- a rigorous post-implementation evaluation that independently assessed the cost and benefits to the business, as well as the performance and cost of the project.

Conclusion and Recommendations

The Social Security Administration is at a critical junction. Its ability to deliver service to the American public now and in the future is at considerable risk due to many of the factors discussed in this report. At the same time, the expectations of the public are changing; they look for the same service options from the government as are offered by the best in the private sector. To a significant degree, much of this can be addressed through technology. This transition will not be simple. It is a complex undertaking to plan, develop and manage the physical infrastructure, the hardware and software components, and the electronic services options in such a way that the need for urgency is balanced with steady, competent execution. While recent funding may help SSA address some of its most critical issues, there is still much to be done to establish a modern enterprise-wide systems architecture.

In order to effectively develop and deliver 21st Century service, the Board believes that SSA should address the following:

- **Critical issues:** Comprehensive backup capacity, replacement of the national computer center and conversion of SSA's databases are critical issues that must be addressed in the shortest possible timeframe as they are putting at risk the agency's ability to deliver services. To address the backup capacity and disaster recovery issues, the Board suggests that the newly formed Future Systems Technical Advisory Panel be enlisted to perform a quick analysis of the situation and provide recommendations to the Commissioner within 30 days.
- **Strategic planning:** The agency should initiate a long range strategic planning process that can serve as a guide for future program and systems development. Similar to efforts undertaken for 2000 and 2010, a strategic vision for 2020 and beyond must be developed in order to provide a "true north" point of reference for all agency planning efforts over the next decade. A new comprehensive systems modernization plan should also be developed that outlines the specific technology initiatives needed to support strategic objectives.
- **Comprehensive business plans:** High-performing organizations develop a vision of the future that emphasizes the overall process in order to achieve the intended outcomes. SSA needs to develop this vision and then conduct a comprehensive review of its major business processes. New business blueprints should be developed that reflect the most effective operation possible and should be used as the basis for efficient processing systems.
- **Governance process:** SSA needs to restructure its governance process for IT investments. The Board strongly suggests that the overall responsibility for IT should be centralized because the current bifurcated process has left the agency open to significant risk due to an aging infrastructure and poorly designed processing systems.
- **A common case processing system for the disability program:** It is imperative that the new case processing system consider the entire disability adjudication process in order to achieve the intended outcome. Rather than beginning with a primary focus on the DDS segment of the process, the entire disability business process must be taken into account before building an integrated system that serves all applicants, beneficiaries, and decision-makers across all adjudicative levels.
- **Electronic service delivery:** In addition to current efforts to upgrade some of the agency's electronic services, much more is needed in order to meet the growing demand for alternative service delivery options. In accelerating the pace of expansion, the agency needs to incorporate electronic services as an integral part of all business plans.
- **External guidance on future technologies:** The process of assessing emerging technologies and new IT-related strategies must be a continuous process. The guidance that will be offered by the Future Systems Technology Advisory Panel is a positive beginning, but there also needs to be an ongoing commitment to open the agency up to the many possibilities that technology brings to the entire organization.

In a 2008 letter to the Senate Appropriations Committee, the Board stated “that it is incumbent upon the Social Security Administration to once again envision a future where emerging technologies and other innovations can be used to deliver services that meet the needs of the American public. This will involve shedding traditional paradigms and undertaking a comprehensive review of current business processes, identifying gaps in service delivery, and looking for efficiencies that will leverage human capital and resources.”³ The Social Security Administration is understandably proud of its history of public service; it needs to honor that history by ensuring the agency’s return to technological prominence.

³ Letter to the U.S. Senate Appropriations Committee, Sylvester J. Schieber, Chairman, Social Security Advisory Board, June 19, 2008.

INTRODUCTION

Through the services it provides, the Social Security Administration (SSA) touches the lives of nearly 60 million beneficiaries, 145 million workers and nearly every American. Most obviously SSA provides services to the beneficiaries and claimants of the agency's programs. One out of every six individuals receives monthly cash benefits from Social Security or Supplemental Security Income (SSI)⁴, the major programs that SSA administers. This includes aged individuals and persons with disabilities, their spouses, other dependents, and survivors. In fiscal year 2008, 41.2 million people were receiving retirement and survivor benefits and another 15.1 million were receiving disability benefits. SSA processed nearly 4.1 million retirement and survivor claims, 2.3 million initial disability claims, and 559,000 disability hearings during that same fiscal year. In addition to the people who filed for and/or received benefits, SSA provided services to the public in general—processing over 19 million requests for new or replacement Social Security cards, posting 273 million earnings items to individual earnings records, answering 63 million calls to its 800-number and handling over 42 million visitors to local field offices. In economic terms, SSA programs pay out \$650 billion each year at an administrative cost of about \$10 billion.

And over the past 74 years, the agency has been a diligent steward of the public's trust, overseeing the benefit programs that so many individuals and families depend on. In its official mission statement, SSA promises to “deliver Social Security services that meet the changing needs of the public.”⁵ Or, to put it in terms that SSA employees have long used to describe the services they provide, the agency's mission is to deliver the right check to the right person at the right time. To carry out this mission, SSA has utilized technology to a significant degree to deliver services. However, the issue the agency now faces is how its current use of technology can be re-engineered and expanded to meet the service challenges of the 21st Century.

SSA currently delivers service to the public through several channels, including:

- face-to-face service in SSA's nearly 1,600 field offices, Social Security card centers and hearing offices;
- telephone service via SSA's 800-number network or through telephone systems in SSA's field offices;
- service via the internet; and
- service delivered via widely expanding videoconferencing technology.

The Social Security Administration is a community-based agency where face-to-face contact is the hallmark of quality service delivery. In the late 1980s, telephone service was enhanced when the agency established separate general inquiry call centers that were highly successful. However, by 1999, when the Social Security Advisory Board wrote its report about service to the public, SSA's ability to serve the public was noted to be increasingly at risk and not just due to

⁴ *Annual Performance Plan for Fiscal Year 2009 and Revised Final Performance Plan for Fiscal Year 2008*, Social Security Administration, pg. 2.

⁵ *Strategic Plan: Fiscal Years 2008-2013*, Social Security Administration, September 2008, pg. 1.

telephone service.⁶ The report described a widening gap between the service the public needed and the service being provided by the agency.

That gap and its effect on public service still exist today. SSA has expanded its service options yet the agency has been slow in keeping pace with the growing demand for electronic access to Social Security applications and services. Changing times, coupled with changing demographics, have created expectations for new and innovative approaches to customer service. This report will suggest ways in which SSA can improve the development and utilization of electronic systems in order to better meet the pressures of today and the challenges of the future.

We will begin by describing the current state of SSA's IT structure and then will turn to a discussion of the underlying problems of the lack of effective strategic planning and IT governance. Finally, we will describe important elements that should be considered as the agency begins to transform itself into a modern, innovative agency.

CURRENT ISSUES RELATED TO THE IT INFRASTRUCTURE OF THE SOCIAL SECURITY ADMINISTRATION

A. Physical infrastructure

SSA's main computer operation center, the National Computer Center, (NCC), is a thirty year old facility located on the agency's main campus in Baltimore. Originally built to house large mainframe processing units and the associated peripheral equipment, the design and physical plant met the standards of the late 1970s. Over the years the NCC's computing capacity has grown through retooling and modernization of the processing equipment. However, growing workloads, expanding telecommunication services, the need to transmit and store huge volumes of electronic images, the electronic disability folder process, and the need for tighter security tools are severely hampering the NCC's capacity to support the agency's business. The storage capacity has grown from 12 terabytes in 2000 to 483 terabytes in 2009 with projections that it could increase by four times that much in the next five years. SSA estimates in its recently released *Information Technology Vision (2009 – 2014)* that by 2012, the NCC will no longer be able to support the expanding server environment.

The need to improve the protection of critical data and infrastructure received heightened attention following September 11, 2001. In December 2003, the Homeland Security Presidential Directive 7 required federal agencies to identify, prioritize, and protect critical infrastructure. SSA's disaster recovery strategy had not been refreshed in over ten years and did not take into account the impact of eDib, the electronic disability processing system, and the disability electronic folder. This Presidential directive, coupled with the agency's own growing sense of unease about its recovery capabilities, led to the decision in 2004 to begin planning for a second data center.

⁶ *How the Social Security Administration Can Improve Its Service to the Public*, Social Security Advisory Board, September 1999.

The vision for the new center was that it would function in tandem with the NCC as “a fully functional, co-processing facility with foundational capacity for all production systems in the NCC.”⁷ That is, about 50 percent of the work currently processed at the NCC would be transferred to the second center. The two facilities would “mirror” each other and provide backup. In the event of a disaster, sufficient capacity would be built into the new site so that it could take on the critical workloads of the NCC almost immediately and sufficient space would be available so that additional equipment and staff could be added to handle 100 percent of the agency’s workloads. SSA took occupancy of the new facility, located in North Carolina, in January 2009. Over the next 12 months, SSA will begin to build data processing and storage infrastructure at the site and at the end of two years they will have some backup capabilities between the NCC and the second data center. Current implementation estimates show that full functionality will not be achieved until early 2013.

In the meantime, significant structural problems and electrical capacity issues have developed at the NCC that now make it necessary for the agency to replace it with a new primary computer center in the Baltimore area. The General Services Administration has estimated that the agency’s standard operating procedure of running full-scale infrastructure maintenance activities once a year is not sufficient to maintain the operation. Electrical supplies into the building are rapidly becoming inadequate; the backup power supplies are so old that it is virtually impossible to get replacement part; and the fire suppression system needs upgrading. In order to assure full functioning, SSA would have to significantly increase the number of times it annually shuts down the NCC data center for maintenance, potentially curtailing the agency’s operations to a substantial degree. In April 2008, SSA obtained external expert advice regarding how to shore up the NCC. This confirmed that by 2012 the NCC would no longer be a viable operational center and replacing it cannot wait until the second data center is fully online.

In the best case scenario, the agency has projected that a new NCC will take 4-5 years to plan, develop, and build; another 2 to 3 years would be needed to complete all systems set-up and integration activities. The agency received \$500 million in the economic stimulus package passed by Congress in February 2009 for construction⁸; however, an additional \$350 million will be needed to purchase data storage and processing equipment necessary to bring this facility online. Assuming that all this additional funding is provided, there is still a serious risk that a new above-ground computer center will not be fully operational in the timeframe SSA has outlined due to the typically long lead time needed to build and outfit such a government facility.

Where does this leave the agency in terms of operational capacity at the end of 2012? What are the current provisions for data security and what plans are in place for ongoing data security as the transition between data centers takes place? When asked about plans to address a worst case scenario, agency executives recognize that current contingency plans for disaster recovery are not nearly sufficient. In the event of a disaster, the agency has access to private backup and recovery facilities at an offsite location. However, the current arrangements only allow for the recovery of 25 to 30 percent of the agency’s production capacity, primarily for mainframe workloads. Many applications such as email, all intranet application, internet access and communications systems would not be available. Recovery of this small amount of capacity

⁷ *IT Operations Assurance (2nd Data Center)*, Presented to the Office of Systems Offsite, February 2005.

⁸ The American Recovery and Reinvestment Act of 2009, Public Law 111-5.

would take seven to nine days and the agency would have to queue up with other businesses or governmental agencies for access to the offsite facilities.

Within the next two years, the second data center should have sufficient capacity to provide some backup and recovery of critical workloads. This will certainly improve the situation with regard to data security and operational capacity for a period of time. However, after 2012 when the NCC is at the end of its projected life-cycle, the second data center will, most likely, need to become the agency's primary computing center. This scenario leaves the agency's disaster and recovery capabilities heavily reliant, as they are today, on commercial hot-site facilities. More important, the agency remains in the position of being able to restore only 25-30 percent of its service in a timely manner. To date, SSA has not actively pursued any alternative backup scenarios such as contracting for the use of other government or commercial hot-sites in the event of the NCC becomes non-operational. Given the enormous economic importance that Social Security plays in the lives of large segments of the American population, the prospect that correct benefits could not be delivered or important data could be lost because of a major systems failure is disturbing.

B. Development of processing systems

During field visits by the Social Security Advisory Board, there have been repeated reports from the end users that the processing systems are overburdened, resulting in slow response times, as well as in time lost to the systems being unavailable. In a strong effort to meet processing demands, the agency has added more electronic processes over the last twenty years. However, this expansion has put severe strain on the available processing capacity. In addition, the underlying database infrastructure is written in an antiquated programming language (COBOL) that does not effectively support web-based applications and other online services.

A significant part of the problems with SSA's processing system, much of which still utilizes "green screen" technology⁹, is the consequence of a piecemeal approach to systems planning and development. Most software applications are developed in stovepipes that mirror the structure of the agency itself. Systems are vertically developed to accommodate a particular programmatic need, such as the representative payee or prisoner tracking systems that do not interact with or update essential claims processing systems. Further the primary claims processing systems are not integrated. The system designed to process Title II (retirement, survivor, and disability) claims is a separate system from the system used to process Supplemental Security Income (SSI) claims, most of which are claims for disability benefits. The result is an expected one, the agency's front-line employees have to process case information through an assortment of disjointed tools that look different from one another, and more significantly, may not propagate data across systems.

When essential data elements do not propagate from one system to the next, the result is redundant keying because the same information must be entered multiple times in order to complete the case. For example, an interviewer may ask an applicant the same basic information

⁹ "Green screen" technology utilizes programming languages and a monochrome-display that were used predominantly in the 1970s and 1980s. Businesses have replaced this technology to a significant degree with web-based applications.

(identifying information, employment information, contact information, etc.) as many as three or four different times when he/she is applying for both disability and SSI benefits. In addition, when these systems are not integrated, they cannot “talk” to each other without the creation of tenuous bridges or links between them. Workarounds are developed which require multiple steps to force the system to take an action that should have been accomplished in one step. Not only does service suffer, but productivity declines as well.

An illustration of a fractured process is the legacy systems used by the Disability Determination Services (DDSs) to process initial disability claims for SSA.¹⁰ There are five “backbone” or legacy DDS systems¹¹, developed by different vendors. Over the years, as SSA urged DDSs to move into an automated environment, a DDS would work closely with a vendor to design a new case processing system that met their needs and fulfilled basic core functions as agreed to with SSA. Each of the 54 DDSs has developed a fairly customized legacy system, reflecting their specific case management requirements and interfaces with state fiscal systems. As a result, each case processing system is different. Each time SSA releases enhancements to the electronic disability system or issues procedural changes, modifications must be made to the legacy systems. These legacy system upgrades are developed collaboratively between SSA and DDS user groups; the functional requirements are turned over to the vendors who develop the software. The vendor must work closely with SSA systems staff in order to ensure that the legacy system modifications are compatible with SSA protocols, further complicating development and implementation. The individual DDS systems are at different levels of maturity and not all of a vendor’s users can accept upgrades at the same time. Thus, it is not uncommon for the software updates to be released on a phased basis with the result that several different versions of software may be in use across the country at any given time.

The entire disability adjudication process is dependent on a very complex set of automated systems (see Figure 1), many of which were developed as part of the agency’s electronic disability adjudication initiative, (eDib). The agency had a goal of developing and implementing eDib in a 22 month time period. Much of the work was already underway when the decision to speed up the project was made. However, in order to meet this new deadline, SSA systems developers had to work on major new parts simultaneously and somewhat independently, to rethink business rules, to test new ways of sharing data across the enterprise, and leaving little time to explore newer technologies that would modernize the process. They had to rely, primarily, on the database structures that were already in place and develop ways to tie them together.

Agency executives acknowledge that this is not a seamless flow of data, but, until recently, there did not appear to be a sense of urgency to remedy these productivity drains, perhaps because the

¹⁰ The disability claims process is a multi-level adjudicative process that begins with an applicant filing for benefits with a local field office. While the local office determines whether the individual meets the non-medical factors of eligibility, the medical information is sent to a federally-funded state agency for a decision on whether disability criteria are met. About 60 percent of initial claims are denied and the first level of appeal is a review by the DDS. About 75 percent of cases denied at this level are appealed to SSA’s appellate division for a hearing before an Administrative Law Judge. Cases denied through all adjudicative levels can be appealed to federal district court.

¹¹ A legacy system refers to one of the five “backbone” processing systems used by the DDSs. These systems were primarily developed by private vendors (Levy and VERSA) and SSA (MIDAS). There are two independent systems in Nebraska and New York.

current processes work well enough since the data ultimately get to the proper location. The realities described above highlight the differences between true seamless integration of the agency's systems and one with the appearance of integration achieved through a series of bridges.

The core of disability adjudication is the collection and analysis of medical evidence. SSA's electronic folder structure will enable the agency to take advantage of developments in the field of health information technology. As a major user of medical information, SSA has a vital interest in assuring that the technology supporting electronic medical records is compatible with the disability processing systems. The agency currently has several pilots underway that test the efficiency of requesting and receiving medical records electronically. These initiatives hold great promise, but the Board remains concerned that these activities focus on streamlining *existing* business processes. It seems to us that this is the perfect time to take a hard look at those existing processes and determine if they are, in fact, the *right* ones and how they impact downstream processes.

Creating comprehensive business processes

High-performing organizations can be identified by their forward-looking and creative vision of a business process that is efficient and fosters consistent application of program policy. These organizations are goal-oriented, emphasizing the overall process in order to achieve the intended outcome. Effective processes cross organizational boundaries and are cross-functional. The focus is on the activity, not on a narrow band of people who are "responsible" for a particular set of tasks. SSA's new initiative to build a single, end-to-end disability case processing system for the use in the field offices, DDSs, and hearing offices offers the opportunity to identify efficiencies and break down traditional stove-pipe case processing. This new system presents a tremendous opportunity for the development of new business rules and processes.

In October 2007, SSA developed the *Intelligent Disability Vision*,¹² a document that describes the role that technology can play in improving the disability adjudication process and could serve as a foundational piece that shapes the agency of the future. The report highlights how the initial intake interviewer will be able to confirm and verify information rather than merely help the claimant remember; how personal health records and electronic medical records will facilitate case documentation and reduce processing time; and that by putting more effort into "getting it right" earlier in the process, the workflow to the hearing offices will become more manageable. By using new business process modeling techniques the agency will be able to design and test new business rules that are supported by a modern and flexible architecture.

However, the focus of the Vision is primarily on the DDS process, tackling first the consolidation of the DDS case processing systems. Clearly, this is essential if the agency is to realize efficiencies and achieve consistency; but the data that flow into, through and out of the DDSs affects all part of the process. This initial emphasis, almost solely on the DDSs, causes concern that the agency is trying to "build a railroad" by starting in the middle of the intended pathway. While there is acknowledgement that there is great potential for change at the front-

¹² Compassion and Efficiency for the 21st Century; Intelligent Disability Vision, October 2007.

end as well as the back-end of the adjudication continuum, there is little to suggest what they might look like. The sample work flows are essentially a depiction of the workflows of today.

The report states that the agency expects that it will take five to six years to make the vision a reality and along the way the details of doing so will be determined. If SSA is to deliver high quality service and meet the changing customer expectations, they must take very seriously the business of analyzing the current process, identifying non-value added steps, and reorganizing the essential parts in a manner that eliminates hand-offs. The Board strongly encourages the agency to keep the “whole” in front of them at all times and avoid the tendency to focus on each part of the operation as a separate entity. Otherwise, there is a high risk that they will find themselves with a great bed of tracks that do not meet in the middle.

Figure 1

A Complex Set of Systems: In order to process a disability claim, there are a number of systems that must interact with the backbone case processing systems in order for the DDSs to do their work. Rather than a universal system that handles the functions of this set of systems, these pieces have to be linked together in order to fully complete the processing of a single case at the DDS level.

- Electronic Disability Collect System (EDCS) is the front-end data collection system used by the field office and becomes a part of the disability electronic folder (EF). Information in EDCS is used by the DDSs to develop the case.
- The National Disability Determination Services System (NDDSS) tracks the case from receipt in the DDS to case closure and pulls information for management reports.
- Document Management Architecture (DMA) is a part of the EF designed to hold images of medical evidence, other documents and forms previously housed in paper folders.
- Electronic Claims Analysis Tool (eCAT) is a web-based tool used by disability examiners that interfaces with the DDS case processing systems.
- Electronic Records Express (ERE) provides electronic options for submitting health and school records including submission via a secure website, directly faxing to the DDS or submission via commercial software (for bulk providers).
- The electronic folder interface (EFI) is the central hub for the parts; access to the EF from many different sources is managed by the EFI.

C. Outdated databases

The modernization of the agency’s processing systems is constrained by an underlying problem that significantly contributes to their current state. The foundation of SSA’s IT infrastructure is a database system, called MADAM (Master Data Access Method) which was developed in-house in the early part of the 1980s. Almost thirty years later, the system is obsolete and “functionally

primitive” when compared to current commercial technologies and products that are available in the marketplace and have been implemented in other areas of government. The primary reason that the MADAM database system is considered to be obsolete is that it was built using the Common Business-Oriented Language (COBOL). COBOL is considered an archaic programming language by most IT professionals and has not been an industry standard for many years.¹³ As a result SSA must rely on in-house training in COBOL for its programmers because they are no longer able to learn these skills outside of the agency. In fact, the agency established a training unit, “COBOL College,” in order to train new IT staff and contractors.

Continued reliance upon MADAM exposes the agency to a number of significant risks. First, reliance on MADAM requires SSA and its contractors to maintain a custom-built system that rests upon an increasingly outdated underlying base, leaving SSA vulnerable to potential major systems failures. There is also a lack of industry support for COBOL in the event of an emergency. In 1986, a report from the Congressional Office of Technology Assessment concluded that the technology and technological risks inherent in MADAM make the system a serious liability for SSA.¹⁴ More recently, a report from the National Research Council stated that the fact the agency stores its “corporate crown jewels” in MADAM, a decades-old technology is alarming and needs to be changed.”¹⁵

Continuing to operate without a modern database platform has implications, not only for ongoing daily operations, but also for SSA’s future ability to deliver efficient service. There is a cost in lost opportunities and actual dollars that comes with SSA’s heavy reliance on antiquated technology and the programming work that is needed to make obsolete systems operate. In many ways the agency’s ability to move forward to improve its systems functionality will be seriously limited until a new infrastructure is in place. Until SSA stores and processes its data operations on a modern platform, the agency will be unable to consider certain service expansions. Effective 24/7 service cannot be provided when the processing systems must be taken offline daily for significant periods of time in order to perform routine backups. SSA has started to introduce more relational databases and web-sphere tools into their processes, but the full value of these tools cannot be achieved because the aging infrastructure continues to constrain the ability to develop holistic solutions that will support any redesigned business processes.

The agency has embarked on a plan to migrate from MADAM to a new database system over the next several years. The Board remains concerned that there are not sufficient resources being devoted to this conversion and believes that this effort should be on a more aggressive schedule. While any plan to convert the MADAM database is a positive step, SSA is, in effect, putting aspects of its IT future on hold until the conversion is accomplished. Given the challenges of

¹³ *Social Security Administration Electronic Service Provision: A Strategic Assessment*. National Research Council, 2007. The NRC states that COBOL is the oldest business-oriented programming language in the history of computing, is generally considered to be obsolete and is only understood by a smaller and smaller fraction of the practitioner community.

¹⁴ U.S. Congress, Office of Technology Assessment, *The Social Security Administration and Information Technology*, OTA-CIT-311, Washington, D.C.: U.S. Government Printing Office, 1986, pg. 43.

¹⁵ *Social Security Administration Electronic Service Provision: A Strategic Assessment*. National Research Council, 2007, pg. 57.

delivering service in the very near term, the agency should re-evaluate its strategy and develop and implement a comprehensive accelerated conversion schedule.

D. State of telephone systems

SSA implemented a national, toll-free 800-number telephone network¹⁶ in 1988 initially to handle general inquiries, schedule field office appointments, and process a limited number of non-complex transactions. The public reaction to the new telephone service system was overwhelmingly positive and the demand for increasingly higher levels of service via the telephone continued to grow. Over the years, SSA has steadily expanded its telephone service to meet those demands. The telephone systems in the tele-service centers (TSCs) have continually evolved to handle more and more calls, distributing those calls over a larger network, and providing a menu of automated services to meet rising service demands. The establishment of 15 immediate claims-taking units at various locations around the country allowed more business to be completed at the first contact, regardless of the caller's geographic location; telephone service is available from 7:00 a.m. to 7:00 p.m., Monday through Friday across all U.S. time zones. In fiscal year 2008 the 800-number network handled about 58 million calls—41 million (70 percent) by live agents and 17 million (30 percent) by automated services. Currently customers wait about 5.5 minutes to talk to an operator and experience busy rate around 10 percent of the time. Call volumes are estimated to reach 68 million by 2010 and without new and faster tools to answer and resolve caller inquiries waiting times and busy rates are likely to climb as well.

This ever-increasing call volume has surpassed the agency's ability to provide sufficient resources to keep pace with the workload. Despite the increased demand, tele-service center staffing levels have remained relatively static since at least the mid-1990s. On a routine basis additional resources are diverted from other components to assist with heavy call volumes, such as the days checks are delivered or during the first three months of the year when the number of claims filed increases and a high volume of income tax-related questions are received. Diverting these resources means that other workloads are delayed.

One of the original goals of the 800-number network was to free up staff time in local offices so they would be able to handle more complex issues. However, as callers experience longer wait times or encounter repeated busy rates, they frequently turn to calling the local Social Security office to get their questions answered. Yet even then, callers are often met with an unrelenting busy signal; or if they can get through, they often have to leave a voice mail message which frequently goes unreturned. In May 2008, one senior executive estimated that 50 percent of callers to their local office receive a busy signal.¹⁷

¹⁶ Today, the national 800-number network consists of 6,500 employees in the agency's six mega-TSCs and 29 non-mega TSCs which are located around the country. Regardless of their physical location—many of the TSCs are co-located with program service centers or other SSA offices—all tele-service representatives are connected to the telephone network that distributes calls to the national 800-number.

¹⁷ *Service Challenges for SSA Field Office Operations: Testimony before the Senate Finance Committee*, Deputy Commissioner for Operations, May 8, 2008, pg. 5.

The quality of service provided by the 800-number network has become a growing concern. Some of the decline in quality of the responses may be attributable to the lack of dedicated resources or a strong emphasis on answering and disposing of calls quickly. In an attempt to manage the call volumes and ensure consistent responses to standard questions, SSA developed a guide developed for tele-service employees. This automated guide has helped improve the speed and consistency of responses and provides adequate information for most situations; it is not designed to provide a suitable response to all questions. Consequently, callers often are referred to the local field office to get information they need. The hand-off to the field office is essentially the original business process that was developed when the 800-number was implemented. But now, twenty years later, the agency faces a new challenge that requires rethinking the business relationships and roles of how and where to provide a timely response to all callers.

SSA has recognized the inadequacy of its telephone operations and has taken steps to address the situation. In March 2008, the agency awarded a \$300 million contract to build a Voice-over-Internet-Protocol (VOIP) telephone system for about 1,600 field installations.¹⁸ VOIP uses a high-speed, broadband connection to place telephone calls through the internet rather than across traditional telephone lines. This project will eventually lead to the replacement of most of SSA's telephone systems and offers greater opportunities beyond just providing local telephone service. Some of those opportunities include faster call routing to any geographic location, the ability for calls to follow the users between locations across the network, and quicker access to caller information. Since VOIP technology relies on computers and the internet, it also offers other advantages such as the option to fully integrate the telephone system with SSA's computer network offering the agency greater flexibility regarding where and how to provide telephone coverage. As a result, this technology has great potential to fundamentally change the way the agency views and structures its telephone service and service delivery in general.

Despite the opportunities that this new technology can provide, it is unclear as to whether VOIP is regarded as a springboard for a new service model or solely as a telephone system replacement project. Much of the advanced functionality that VOIP offers has been included in the contract but the elements are listed as optional features for future evaluation. When and how the agency will integrate these features into a new service model does not appear to be part of the initial roll-out and it is not clear when features such as screen pops that provide immediate online claims information to the claims representative or a unified messaging system that allows voice mail to be forwarded to an email inbox, will be implemented. Some of the limitations may be budgetary, but that does not mitigate the need for a robust tactical plan that outlines the service delivery goals and how productivity and quality will be improved. When the 800-number network was implemented in the 1980s, SSA's vision for telephone service was to provide callers with timely and appropriate responses. The agency's plan for VOIP must maximize the full functionality of this new technology in order to finally achieve that vision.

¹⁸A contract for a VOIP system for the TSC is being developed; but has not been awarded at this time. The contract for the VOIP for field locations was awarded to a company whose parent company has declared bankruptcy. SSAB is continuing to monitor the financial situation of the contractor given the impact that defaulting on this contact would have on the agency's ability to delivery telephone service.

FOUNDATION FOR A SUCCESSFUL IT PROGRAM

The challenges that SSA faces with physical infrastructure, processing systems, outdated databases and telephone service can be addressed through the development of a more robust agency strategic vision and improvements in the governance process of IT investments.

A. An agency strategic vision

SSA's original endeavors in strategic planning set out comprehensive and ambitious vision statements for the future of the agency. In these two early documents: *2000 - A Strategic Plan* (published in January 1988) and *Social Security 2010 Vision* (published in August 2000) SSA carefully outlined a long-range vision as well as high-level strategic objectives that would be used to guide business and tactical planning throughout the agency. Changes in societal factors and business services were assessed, emerging technologies were appraised, and strategic recommendations were developed for implementation over the next ten years. For example, the 1988 plan envisioned that by the year 2000 service delivery would include automated enrollment for retirement benefits, the use of expert systems to support employee decision-making, and innovative self-service options using ATM-like technology. In 2000, the vision expanded to include a full range of internet services, the use of videoconferencing, real-time language translation capability, and enhanced telephone service that offered automated options.

In the Board's view, the "strategic" plans published by the agency since the *2010 Vision* have not provided a long-range vision of SSA's future. Instead these plans tended to be narrowly focused on specific aspects of a program rather than on the enterprise as a whole. These later plans have emphasized short-range problem-solving almost to the exclusion of a longer-range vision for the agency. Further, the plans change with each new Administration, each new Commissioner and each new crisis, such as an increase in applications for disability benefits, the growing backlog in hearings, the aging of the baby boom generation, or Congressional emphasis on a particular issues such as verifying work authorization status.

Successful strategic planning is an inclusive and participatory process, with shared ownership throughout an organization that leads to action. It builds a common vision that is value-based, externally focused, sensitive to an organization's environment, and based on quality data. The resultant plan becomes "true north"—the guiding principle for all decision-making in an organization.¹⁹ The most essential and difficult part of strategic planning is to think long-term and enterprise-wide rather than just focusing on short-term solutions to existing problems.

In September 2008, the agency released a new strategic plan for fiscal years 2008 through 2013 that meets the requirements specified by the Office of Management and Budget (OMB).²⁰ The plan lays out four high level goals: 1) eliminate the hearings backlog, 2) improve the disability

¹⁹ Interview with Meg McCarthy, CIO, Aetna Insurance, December 1, 2007.

²⁰ OMB's basic requirements state that a plan should reflect an agency-wide vision that covers a minimum of six years (the current fiscal year plus the next five fiscal years) and it must be refreshed every three years. The key elements are a mission statement; strategic goals; a description of the means and strategies that will be used to achieve these goals; and performance measures. Agencies are instructed to consult with the Congress and OMB and to solicit and consider the views of interested and potentially affected parties.

process, 3) improve the retirement process and other core services, and 4) preserve the public trust in SSA's programs. In truth, however, the plan is more tactical than strategic.

The Board believes SSA needs a longer-range plan that is truly visionary. We urge SSA to begin the planning process for the next decade and develop a "to be" 2020 vision. The process must include a broad scan of environmental factors that will arise within the next decade, a thorough assessment of future technologies, a comprehensive review of all major business processes, and in-depth analyses of service delivery channels and opportunities for change or improvement. SSA primarily uses short-term planning and implementation strategies to effect change in current systems and software. However, this is not sufficient for the type of technological changes SSA will need to make if it is to meet future challenges. The major systems projects that the agency must undertake require forward-looking plans that are so compelling that Congress will ensure multi-year funding that is conditioned on the agency's successful execution.

Information technology strategic planning

IT strategic planning is documented in the annual Information Resources Management (IRM) plan and the initiatives in the IRM flow from the agency's strategic plan. The most recent IRM was released in 2007 and provides a 5-year tactical snapshot of systems development. In late 2007 SSA's Inspector General reviewed this plan and highlighted a number of critical deficiencies²¹:

- The plan needed to provide a better description of how IT development activities will help accomplish the agency's mission, goals, and objectives and present a "roadmap" for reaching those goals and objectives.
- The plan should have been structured in a way to better support the agency's strategic plan while providing possible solutions to future challenges and constraints.
- While the plan indicates that it is a 5-year plan, it only provided an IT development plan for the next two years.

In 2009, to supplement the IRM plan, the agency developed a new IT vision statement. This effort is an acknowledgement that the agency understands the importance of developing an overarching IT plan. The IT statement includes a general high-level timeline that projects the development and implementation of major initiatives and is valuable for identifying the agency's priorities. However, it does not consistently define anticipated outcomes in terms of operational efficiencies, expected savings from productivity improvements and service delivery enhancements nor does it contain sufficient detail to support what appears to be a protracted implementation schedule. Information on project milestones and benchmarks for success should be included. Without such data it is not possible to determine whether the agency is moving with deliberate speed and, as a result, weakens accountability. Furthermore, in order to ensure ownership and commitment the plan should be widely distributed within the agency and all executive and staff performance plans should be linked to successful execution of IT modernization.

²¹ *The Social Security Administration's Information Resources Management Strategic Plan*. Office of the Inspector General, Social Security Administration, A-14-07-27133, September 2007.

B. Governance of IT investments

Governance of IT investments at SSA is a decentralized process. The Chief Information Officer (CIO) has responsibility for some functions such as IT capital planning and investment management; overall enterprise architecture; information security; IT strategic planning; IT human capital planning; and e-government initiatives.²² However, the Deputy Commissioner for Systems (DCS) is responsible for many of the traditional CIO responsibilities including systems acquisition, development and integration. Other IT functions are split among other senior executives.

The Information Technology Advisory Board (ITAB), chaired by the Deputy Commissioner of Social Security, is responsible for the planning and budgeting for IT investments. The CIO and the DCS play key roles on the Board because it is their organizations that provide agency oversight as well as resources. The remaining membership is comprised of representatives from the other Deputy Commissioner-level components. While originally developed as a way to ensure transparency in decision making and foster shared responsibility, the ITAB process appears to have resulted in a dilution of both the ownership and management of the IT strategy.

The agency's IT planning process (see Figure 2) is intended to facilitate the planning, development, and implementation process. The projects that are included in the IT systems plan are grouped into nine portfolios that generally align with the strategic objectives as articulated in the Agency Strategic Plan. For example, projects for improving or redesigning the disability processing systems are in the portfolios that support the strategic objective for "improving the speed and quality of the disability process."

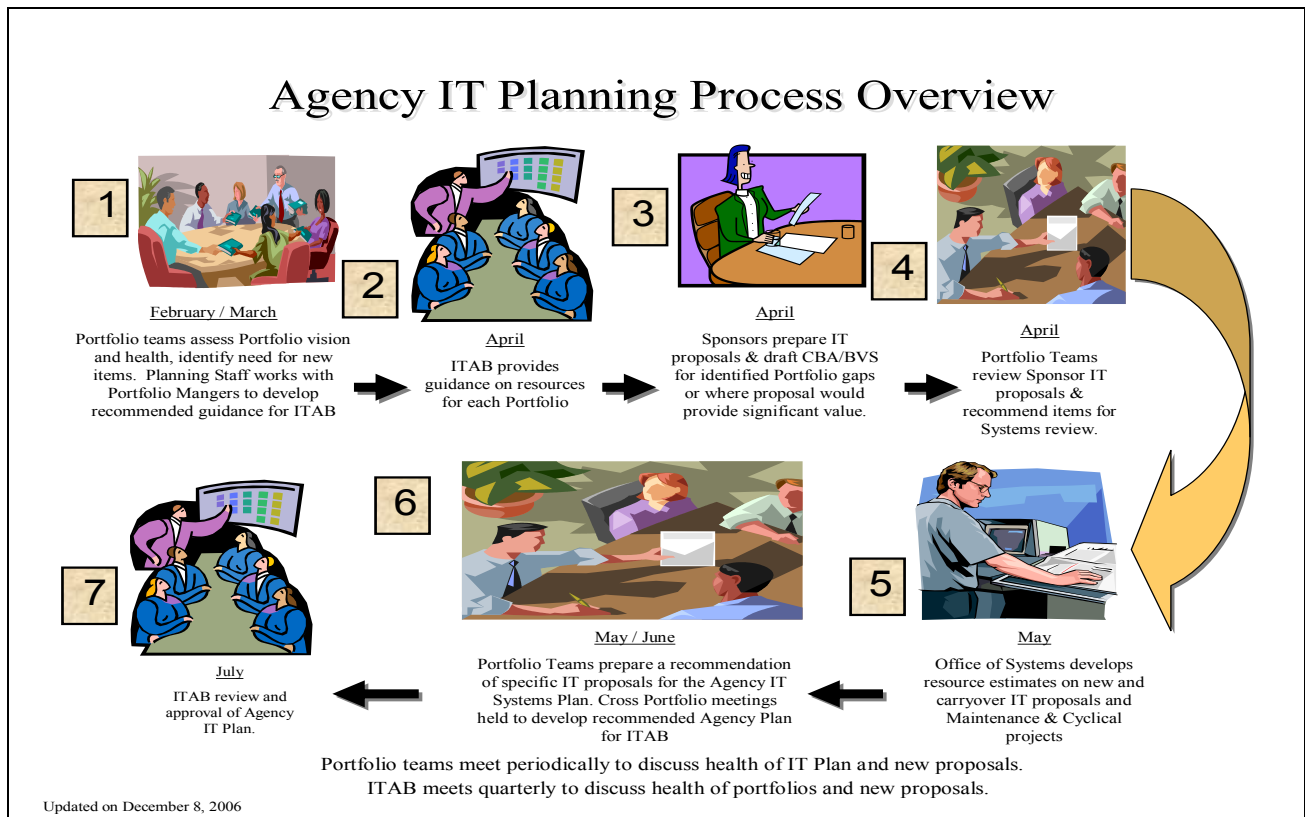
Each portfolio is assigned to an executive who has overall responsibility for achieving the goals identified for the project. The portfolio manager is usually a senior manager in the division sponsoring the project and oversees the portfolio as collateral duty. Similarly, a portfolio team, comprised of representatives from the sponsor's division, other impacted divisions, as well as technical support from Office of Systems, is selected. Portfolio teams are responsible for laying out the planning and analysis for the project, defining its objective and aligning it with the agency strategic goals. The teams develop an estimate of the work years and costs associated with the project and advise the ITAB regarding what can be achieved based on the final level of resources allocated. Portfolio project recommendations are submitted on a yearly basis for approval by the ITAB which then allocates resources for the current budget year as well as placeholder allocations for the life of the IT Systems Plan, usually a two- year cycle.

While conceptually sound (similar processes are used by a number of successful organizations), the actual practices of the ITAB do not always produce the intended results. While all top-level senior executives have a seat on the ITAB, their individual roles and level of influence on the

²² In 1996, the Clinger-Cohen Act renamed the lead IT position in federal agencies to "Chief Information Officer" (CIO) and specified additional responsibilities for IT capital planning and investment control, and for performance and results-based management. The Government Accountability Office (GAO) identified additional key areas of CIO responsibility: IT strategic planning; information collection/paperwork reduction; information dissemination; records management; privacy; statistical policy and coordination; and information disclosure.

planning and decision-making processes are not clear. Projects can receive approval due to well-intended collegial response to intensive lobbying by project sponsors, rather than strictly on the merits of the business case or because they are the most effective and economical use of IT funding. In this way, the planning process can be manipulated from within and, in some instances, supplanted by independent, grassroots initiatives. New systems, as well as improvements to current systems, are often executed as separate, distinct projects within component silos driven by internal customers rather than overall service delivery. As a result, internal politics may have too strong an influence on funding decisions, rather than being a direct reflection of the “true north” of the agency’s strategic goals and objectives.

Figure 2



Source: Office of Deputy Commissioner for Systems, Planning Staff, December 2006.

Independent of the official governance process run out of SSA’s headquarters, a number of major systems initiatives have been developed by the agency’s regional and field staffs. These efforts are often in response to situations where needed IT functionality does not exist or where national systems do not meet end-users’ needs and workarounds become necessary. As a result of the success of some of these initiatives and their popularity with end-users, some of these systems have been adopted nationwide and have been tied into the systems infrastructure through what is essentially a “back door” design and development process. However, the ad hoc nature of these initiatives can be a distraction from the overall systems development plan. These new software programs that are in demand by specific user communities must be scaled to work across the organization and must be integrated into the overall systems structure. This level of effort can adversely affect the development and deployment of other automation tools. The

resources spent on the original development usually come from regional budgets, but the integration and more robust testing that are needed for national adoption come out of the national IT budget. Grassroots innovation should not be squashed, but effort must be made to assure that these initiatives align with the overall IT and programmatic business plans and that resources are allocated through a centralized governance process.

CHANGING LANDSCAPE MUST BE ADDRESSED TO ENSURE A SUCCESSFUL FUTURE

A comprehensive IT strategy must be responsive to the current operating environment but must also take into account critical societal factors that will affect operations in the future. The aging of the population, fueled by the computer literate baby boomers, will result in a steady increase in the volume of retirement claims over the next several years. The number of disability claims has already started to climb as more people are entering their disability-prone years. The sheer volume of current and future claims workloads demands new and improved IT strategies.

Beyond the continued growth in workload, SSA must consider a variety of other influences on the development of future IT systems. In their most recent strategic plan, the agency did acknowledge the societal factors that will affect its operations in the coming years.²³ SSA may have an expanded role in the adjudication and payment of federal health care programs, both as part of the disability process and in its supporting role for Medicare claims. There is the potential for further expansion of the agency's immigration-related workloads as the Congress continues to consider legislative proposals.

The country's current economic condition is likely to have a tremendous impact on future funding. SSA's administrative budget is allocated out of the Trust Funds as a "limitation on administrative expense," not out of general revenues. Yet its budget request is considered to be discretionary funding and is treated the same as the requests of other federal agencies. SSA must "compete" for its annual budget allocation and as a result has been chronically underfunded. The agency has been working hard to make its case to the appropriators and has had some success. For the first time in several years, the appropriations for fiscal years 2008 and 2009 exceeded the President's request. However, the Board believes that dedicated funding outside of the administrative budget is needed to support the rebuilding of the IT infrastructure.

A. Customer needs and expectations

Any organization, whether public or private, is keenly aware of the need to have its finger on the pulse of its customers. Measurements of how well current services fulfill needs and meet expectations are critical for an organization's growth and to shape future planning. SSA began measuring customer service in 2000 and over the years has scored well on this single measure of overall service.

²³ *Strategic Plan – Fiscal Years 2008 – 2013*, Social Security Administration, September 2008, pg. 36.

The American Customer Satisfaction Index (ACSI) measures satisfaction with electronic services. Here, too, the agency scores well when compared to other federal agencies. However, there is no assessment of how well the agency fares when its electronic services are matched against the best in the private sector using such comparisons as access, user-friendliness, and the ability to process requested actions timely. Without full and robust measures of customer satisfaction (and dissatisfaction) it is difficult for any organization to comprehend how they need to improve services and where to invest in order to meet future expectations of a changing customer base.

SSA has begun to develop tools that will allow it to better understand its public. The Public Insight Process (PIP) project was formalized in 2008 and consolidated a variety of public information tools under one umbrella. By bringing together all of this information and systematically analyzing it, the agency is in a much stronger position “to help ensure that the ‘voice of the public’ is integrated into the development and implementation of selected internet products and services.”²⁴ Although the PIP process is specifically targeted at the development of electronic services, the Board is hopeful the agency will take advantage of this improved access to customer-based data for the development of all business processes and systems.

B. Changing customer base

While assessing current customer expectations is an important first step in developing an IT strategy, SSA must also acknowledge that its customer base is changing. This demographic shift will require significant restructuring of the agency’s service channels. In 2030, one in five U.S. residents is expected to be 65 or older. This age group is projected to increase to 88.5 million in 2050, more than doubling the number in 2008 (38.7 million).²⁵ Agency projections estimate that over 80 million people will file for retirement benefits over the next 20 years! Without new and improved automated options, the agency will be swamped by an exploding demand for its services.

In January 2009, SSA unveiled a new electronic filing application, *Ready Retirement*, a new internet application designed to simplify the retirement filing process and reduce the time it takes to complete the application online. SSA believes that this new process is “a transformational initiative that will establish the foundation for all future internet application.”²⁶ As a result of *Ready Retirement*, internet retirement applications have risen from just 10 percent of the total receipts for fiscal year 2008 to almost 25 percent of all retirement applications received in just the first half of fiscal year 2009. The expansion of electronic services and the use of the internet has been a primary focus for the Board and the results are indeed gratifying.

Diverse populations require reassessing current practices

The aging population is not the only growing segment of the population. The 2008 Trustees Report estimated the net immigration rate (legal and other combined) would average

²⁴ *eServices Public Insight (PI) Toolkit*, SSA Intranet Homepage, January 22, 2008.

²⁵ An Older and More Diverse Nation by Mid-century, U.S. Census Bureau News, August 2008.

²⁶ *Strategic Plan Fiscal Years 2008 -2013*, Social Security Administration, September 2008, pg. 18.

1,070,000 persons per year during the 75-year projection period.²⁷ SSA has long believed that it should provide adequate and appropriate service to non-English speaking customers; it has a general policy that states service will be provided “regardless of their ability to speak, read or write English.”²⁸ Currently about 5.7 percent—a little over a half million—claimants prefer to be interviewed in a language other than English. To provide services to these individuals, the agency uses a combination of bilingual or multilingual public contact employees, (approximately 13 percent of these employees are proficient in one or more of 47 different languages and dialects), supplemented by a national contract for multilingual telephone interpreters and paid third-party interpreters.

As immigration continues to grow, the need to provide services in diverse languages will also increase. The challenge SSA faces is how to effectively provide the proper levels of service to all customers. The agency will need to continue to recruit bilingual employees²⁹, but technology may also provide solutions. The use of telephone and video-conferencing technologies may increase the accessibility of interpreters regardless of the customer’s physical location. Automated services with language options may reduce the overall need for interpreters. The agency will need to explore all avenues as they seek to provide service to an increasingly diverse customer base.

For too long, SSA has thought of itself primarily as a retirement benefit agency that has been assigned the task of administering a peripheral set of disability programs, even though 2/3 of agency staff time is spent on disability workloads. The disability determination process is much more complicated than the relatively simple determination of whether someone is eligible to receive a retirement or survivor benefit. In the work of retirement program administration, it may make sense to disperse authority and workloads across a broad cross section of the total administrative structure. In the case of the more complicated disability program administration, the lack of a central encompassing authority with the responsibility to effectively manage the system from end-to-end is likely complicating the challenges that the disability programs are posing. Over the years the Board has repeatedly commented that the agency needs to take stock of its approach to disability program management and policy development. Now the agency is under pressure to improve these processes and develop scalable electronic services to support this workload.

Leading edge of the computer generation

It is not just the potential for an expanded mission for SSA or the demographics that will shape the future of the agency. The education and technological sophistication of the public must be factored into future systems design. Expanded electronic services must recognize the degree to which older adults use the internet. A recent study by the Pew Internet and American Life Project shows that the biggest growth in internet usage is by adults age 70 and older (see Figure 3). In just three years from 2005 to 2008, internet usage by this age group increased by

²⁷ *The 2008 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, pg. 70.

²⁸ Vision Statement, Multilanguage Gateway for Persons with Limited English Proficiency, Social Security Online website.

²⁹ Approximately 7 percent of newly hired employees are bilingual.

about two-thirds. Clearly, more of the population is “ready and willing” to transact business electronically and SSA must take advantage of this. However, simply offering a few services via the internet is no longer enough. The public now expects a full range of user-friendly services that allows them to conduct business with the agency on their terms such as online account statement, conveniently located ATMs or kiosks, and 24/7 service options.

Figure 3

Percentage of Americans online by age³⁰		
Age Range	Percentage in 2005	Percentage in 2008
50-54	68%	78%
55-59	68%	71%
60-64	55%	62%
65-69	57%	58%
70-75	26%	45%
76 +	17%	27%

C. Insights from SSA managers and employees

SSA’s vast network of community-based offices is unlike any other federal agency. These employees are highly trained and keenly aware of processes that need attention. They are frustrated by their daily struggle to cope with workloads that are growing at alarming rates. Many office waiting areas and call queues are full most days at the same time that offices are losing staff and have limited ability to replace those losses. Managers report that they have little time for “managing” the office because they are called to take interviews and process claims.

However, there are still many things that do not get done. Managers report as many as 70 separate workloads that are not being done on a timely basis in SSA field offices. Some could be handled more efficiently with better integration of existing claims processing systems. Other tasks could be handled much more efficiently such as expanding the use of desktop videoconferencing to interview applicants. This feature is particularly valuable in rural areas where it can be a several hour drive to visit an office. Yet many of the current electronic tools available do not provide the kind of functionality that allows field staffs to effectively serve their customers. Systems downtime and slow responses hamper the staff’s ability to provide efficient service.

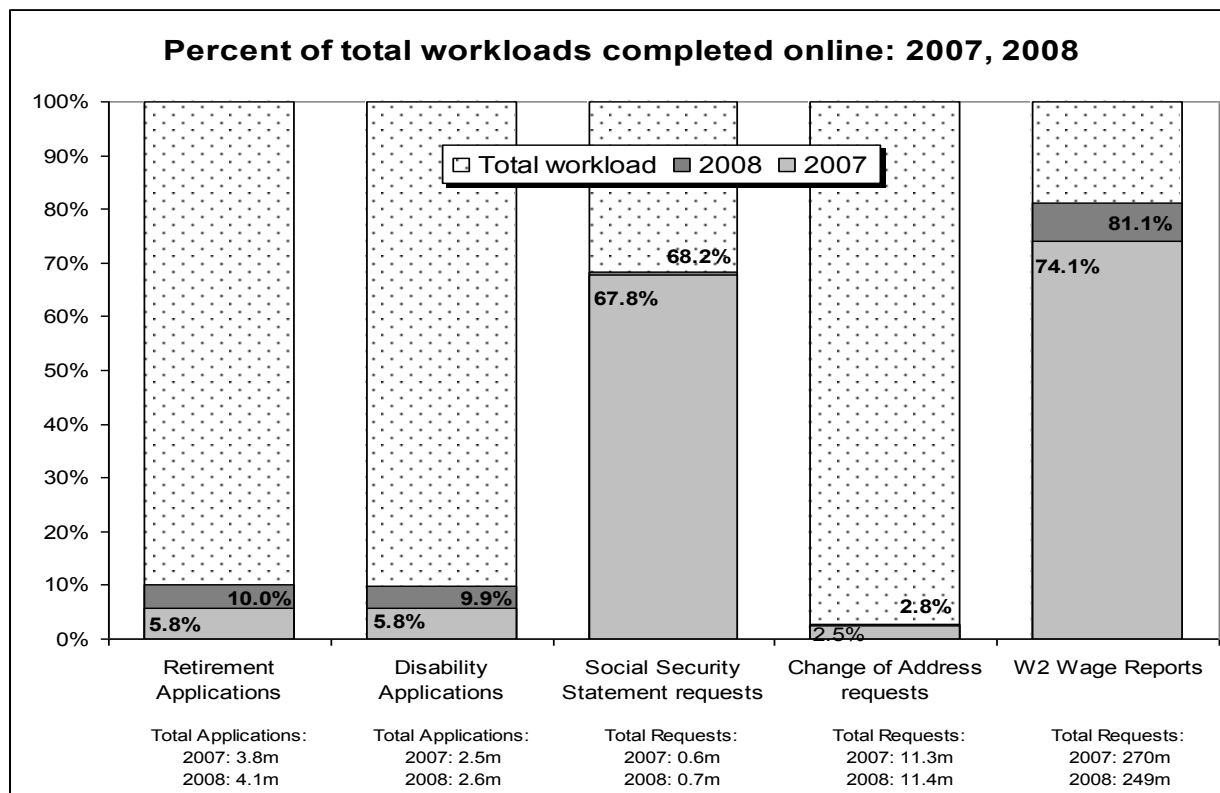
³⁰ “Pew Internet Project Data Memo”, Pew Internet & American Life Project, RE: Generations Online in 2009,” January 28, 2009, pg. 2.

SSA has long been the “go-to” agency because of its community-based network. As a result, SSA has been given a significant number of new responsibilities over the years, such as their role in administering low income subsidies for the 2006 Medicare prescription drug program. There is also considerable discussion in Congress about what the agency’s role might be in any new immigration legislation. While SSA’s ability to accomplish these non-mission assignments has been remarkable, the perspectives offered by the agency’s direct service staff highlight that the agency is rapidly approaching the point where it can no longer tackle additional workloads and not jeopardize its ability to do its core work. Congress must recognize that continuing to task SSA with new responsibilities without additional resources, ultimately, may not be in the best interest of the American public if it results in a deterioration of essential agency services.

D. Electronic services

Fifteen years ago, in May 1994, SSA introduced its internet website, *socialsecurity.gov*, to the public. Use of the website rapidly expanded from less than 25,000 visitors the first year to more than 15 million by the end of the decade; there are now between three and four million visitors per month. The website initially contained basic information about Social Security, such as the location of SSA offices, entitlement information, and how to obtain a Social Security card. Three years later a variety of online electronic services were added. The website now provides a mix of online services for a broad range of external customers: beneficiaries, the business community, other governmental agencies, and the general public. For example, it is now possible to file an application for most benefits online, businesses can file wage reports and verify employee Social Security numbers, and beneficiaries can handle many of the transactions needed to keep their records up-to-date. As Figure 4 shows, the degree to which these services are used varies greatly.

Figure 4



National Research Council findings

In 2005, SSA asked the National Research Council to provide an independent evaluation of the agency’s electronic service strategy. This report, *Social Security Administration Electronic Service Provision: A Strategic Assessment*, emphasized the need for a major cultural shift within the agency with respect to how they use technology and, in particular, electronic services. Two observations were offered:

- Electronic services have not had a good reputation at SSA because they have not been perceived as central to the agency’s mission. When this report was released in 2007, the Committee noted that SSA still held tightly to the belief that the only good service is face-to-face service and online services are too impersonal for an agency that has such a wide-spread geographic presence.³¹
- SSA, as an agency, tends to see itself as unique, but is, in fact, similar to many large-scale private sector organizations such as financial institutions that serve a large cross section of the public. The agency can learn much from these private sector organizations about customer service in an electronic world.³²

³¹ *Social Security Administration Electronic Service Provision: A Strategic Assessment*, National Research Council, 2007, pg. 27.

³² *Social Security Administration Electronic Service Provision: A Strategic Assessment*, page 32.

The NRC concluded that SSA had not yet fully integrated electronic services into the overall operational culture. They cited a number of reasons: a decentralized governance structure playing different roles in building electronic services, setting policies, and developing strategies; an infrastructure that is insufficient to provide effective 24/7 online services; and the belief that electronic business is a separate process, not one that is integrated into the fiber of the agency. In their recommendations, the NRC stated that “SSA should make an unambiguous, strategic commitment to electronic services as part of its long-term service-delivery strategy, placing a central emphasis on electronic services that encompass timely and up-to-date information.”³³ SSA has responded in a very positive fashion to this recommendation over the past 18 months. They have begun to incorporate electronic services into the mainstream of new business tool development and the Board is hopeful that these initiatives represent “an unambiguous, strategic commitment” for the future.

E. Capital funding for IT modernization

The Congress and the Administration are facing resource constraints more austere than anything experienced in generations. At this same time, SSA will be one of many agencies asking for increases in their appropriations just to maintain current levels of service. Tight budgets limit the ability of even the most fiscally prudent agency to reprogram resources to address unexpected workload or infrastructure crises.

The annual IT appropriation must fund the cost of new initiatives and ongoing systems maintenance. In terms of overall information technology (IT) spending (including hardware, software, and employees) SSA has the lowest IT budget of agencies its size and is 24th of 27 agencies in the amount of IT money per employee. For fiscal year 2008, SSA’s IT budget for equipment and services was \$686 million.³⁴ Approximately \$482 million, roughly 70 percent of this budget was spent on infrastructure maintenance just to keep current systems operating. As Figure 5 shows, a little over one-quarter of the total IT budget or about \$180 million was spent on new investments, designated as Mission Area Investments. This resource distribution between maintenance activities and new development has remained fairly constant over the years. The large fixed costs of running an outdated system have not allowed SSA much flexibility to shift resources into “product development.” Budget scrubs for pockets of money to “plug holes” and keep projects running is a routine practice. Clearly, the agency does not have sufficient capital resources within its annual budget to fund major multi-year systems modernization efforts.

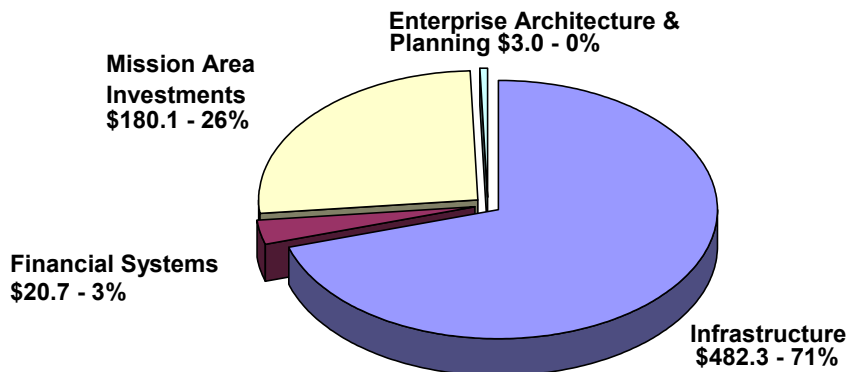
³³ *Social Security Administration Electronic Service Provision: A Strategic Assessment*, pg. 3.

³⁴ In addition to the annual appropriation, SSA can use unspent IT dollars from prior year appropriations—as far back as fiscal year 2002—with OMB approval. In fiscal year 2008, approximately \$129 million of the total \$686 million IT budget was carried forward from prior years.

Figure 5

SSA'S FY 2008 IT BUDGET

(\$ in millions)



If SSA is to be responsive to the public's needs, a new, modern service delivery strategy must be created with the funding needs clearly defined, so that they are transparent to the Congress and the public. The Board believes that the agency must make the case for a temporary multi-year capital fund in order to update the agency's database platform and develop a common disability processing systems.³⁵ This capital budget, firmly grounded in a comprehensive plan, would be for a limited time and come with stipulations that the net results must be a modern integrated system that delivers efficiencies in operation, increases throughput of workloads, and delivers expected and effective levels of services in the most cost-beneficial manner. To supplement needed funding, the Congress should allow SSA to invest a portion of program dollars saved from stewardship activities into the administrative budget to support these new systems initiatives. The distinction between "program dollars" and "administrative dollars" is arbitrary in SSA's case because, as previously discussed; the "dollars" all come from the Social Security Trust Funds.

F. Learning from others in the public and private sector

The scope of SSA's systems, the size of its databases and the volume of its workloads have, in the past, set the agency apart and made it distinctly different from most other large organizations. But today, there are many large private sector organizations, e.g., major national insurance companies that serve a large cross section of the public through technology. Likewise, there are other federal agencies with large-scale public service missions that are facing, or have already

³⁵ The federal government, as a rule, does not have a system for capital budgeting. Rather, the congressional funding process relies on annual authorizations to finance federal expenditures and investments, including those investments, such as buildings or major IT improvement that are both costly and capital in nature. On occasion, multi-year spending projects have been funded through legislation. These special funding mechanisms allow agencies to roll-over funds unspent for specific purposes from one year to the next, or allow for adjustments to budgetary spending caps.

faced, challenges similar to the ones that confront SSA. Two such agencies, the Internal Revenue Service (IRS) and the Veterans Administration (VA), have undergone very public IT crises with regard to their electronic services and IT infrastructure which forced them to alter the way they develop and manage IT projects.

As part of our research for this report we talked with several public and private sector chief information officers. All of these executives reflected on the lessons learned from their varied experiences and attribute their success to:

- the establishment of a centralized governance process responsible for carrying out the enterprise-wide strategic vision,
- business plans and IT initiatives that are integrated and support that vision,
- a rigorous post-implementation evaluation that independently assessed the cost and benefits to the business, as well as the performance and cost of the project.

Governance process at the IRS

The IRS uses a governance process that is conceptually similar to SSA's ITAB process. However, there are some major differences:

- The governance of the IT planning and implementation process is the responsibility of the CIO. Other senior executives who represent the business processes are involved, but ultimate accountability rests with the CIO. As noted earlier, the responsibility for IT planning at SSA is divided among a number of the agency's executives.
- The management of individual projects is the joint responsibility of a business process manager and an IT expert who are full-time and are responsible for project management. In contrast, SSA's project management is a collateral duty.
- The IRS uses MITRE, a Federally Funded Research and Development Center (FFDRC) as an objective third party to complete an independent assessment of the costs and benefits of each project. Most of the assessments at SSA are done in-house. Additionally, SSA does not consistently mandate formal post-implementation reviews of new systems to determine the return on investment or if the business process objectives were met.
- To insure transparency and guard against decision-making that reflects the strong influence of any single executive or component, all votes of the IRS Executive Advisory Board and Governance Committee are made public.

Development of its current governance process was not easy for the IRS. It took multiple attempts over a 10 year period to develop a strategy that has resulted in a dramatic change to the way it provides service. The results have been remarkable. The IRS recently reported that over 60 percent of all tax returns are filed electronically; refunds are processed in half the time of paper returns; and because of built in error checks, returns are more accurate. One of the significant lessons learned was that effective systems cannot be developed without the in-depth involvement of all customers— the business process side of IRS operations and the American

public. Moreover, success came to IRS when there was the direct involvement and leadership from the top of the organization.

Implementing the vision

Throughout public and private sector organizations, there is common agreement that successful implementation of IT initiatives must start with the development of a comprehensive strategic vision, long before technology projects are developed and resources allocated. As the CIO of Aetna Insurance stated, **a good strategic plan is “true north”—the single point to which every business process and IT system is linked.**³⁶ The “true north” strategic plan forms the foundation for the organization’s basic business blueprints that describe very concisely how the strategic objectives will be achieved. This requires a purposeful and comprehensive rethinking of the whole business process happens *before* any systems development is initiated. As one VA official put it, “You need to rethink how work gets done, not just automate bad processes.”³⁷ At Aetna, no systems development is undertaken unless there is a current business blueprint in place for the related programmatic area. The managers describe the review of the business process as a collaborative process with the IT professionals contributing information about new systems strategies and emerging technologies that could enhance the business process and ensure that strategic goals are met.

In the past, SSA has been constrained in its ability to re-design the business rules during its major automation initiatives. The agency has been able to make some process changes, but more often than not simply “automated” whatever the current business processes (or parts of processes) were at the time. As part of its new IT vision statement, SSA recently announced that it will use much more sophisticated Business Process Modeling tools to document the current processes and then create and test new business models. The “to-be” processes will be developed with the help of the public, business partners, and internal users. The Board is encouraged by SSA’s effort and we remain hopeful that this will result in more effective business processes that are supported by a flexible architecture. As important, this new approach must be the springboard for innovation.

Measuring success

Responsible management of IT investments must include a sound evaluation mechanism. Executives from both the IRS and the VA describe a multi-faceted approach to evaluation that assesses projects from an investment perspective and from a business process perspective. These agencies use the mandated Earned Value Management (EVM)³⁸ process but acknowledged that this tool is not designed to inform agency leadership of the effects on the business process. Both organizations supplement the EVM assessment with internal and external reviews that yield a

³⁶ Interview with Meg McCarthy, CIO, Aetna Insurance, December 1, 2007.

³⁷ Interview with Stephen Warren, Acting Assistant Secretary for IT, Department of Veterans’ Affairs, August 27, 2007.

³⁸ Earned Value Management (EVM) is a project management control tool allowing visibility into technical, cost and schedule planning, performance and progress for major IT projects. The implementation of an Earned Value Management System (EVMS) ensures that cost, schedule, and technical aspects of the contract or project are truly integrated and estimated, and actual progress of the project can be identified. The Office of Management and Budget (OMB) requires the use of an EVMS for all major IT investments with development work.

much more comprehensive evaluation. In addition, they conduct ongoing assessments throughout the lifecycle of the project, benchmarking changes against pre-implementation measures and goals. Aetna Insurance follows a similar protocol for evaluation by establishing the criteria for success and tracking costs and business benefits throughout the entire implementation process. By doing this, Aetna executives have achieved a 98 percent on-time delivery for projects that have consistently met end-user requirements. Without this type of rigorous evaluation process, systems performance cannot be measured, impacts on the business process cannot be assessed, costs and savings cannot be calculated, planning and development practices cannot be evaluated, and underlying problems cannot be effectively identified and remedied.

In contrast, SSA tends to rely heavily on the EVM process in order to evaluate the “success” of the project and does not consistently conduct independent post-implementation reviews of the projects. This means there is often lost opportunity to evaluate service delivery process changes, refine performance measures, and measure success both in terms of costs and outcomes. The consequences of shortchanging the evaluation step in overall project management can have widespread repercussions on the business process. For example, a post-implementation review of the electronic disability system (eDib) has not been done. Years after it was considered to be “fully implemented,” end-users of eDib continue to deal with workarounds due to incomplete systems processes. An independent post-implementation review of the electronic disability process could have provided the agency with a clearer picture of the costs involved in operating with an “incomplete” system and a more systematic way of prioritizing the work remaining to be done.

Project management and software development performance are routinely reviewed by the Office of Systems. At the conclusion of major systems projects, they perform an in-house evaluation of their role in project management, reflecting on how well schedules were met, how the development and deployment process could have been more efficient, responsiveness to end-user complaints, and management of contractors.

The road ahead

The agency is rapidly approaching a tipping point wherein continuing to do business with outdated 20th Century tools hinders its ability to meet the needs and expectations of the American public. As government services become more interconnected and the demand to share data across programs grows, it is even more important to stay current with technological innovation and anticipate how leading edge technologies can be used to improve service delivery and streamline business processes. Technology is changing rapidly—at the rate of every three to five years. With such rapid evolution, the process of managing technological change effectively has major implications for meeting the expectations of SSA’s customer service base. For an agency like SSA, the question must be how to stay just ahead of the curve but not on the “bleeding edge;” how to move beyond managing for the status quo and overcoming a culture of risk aversion that can become a barrier to innovation. Staying informed and tracking the progress of emerging technologies and systems strategies and knowing when to step out to take advantage of them must be a vital part of the agency’s planning process.

In October 2008, SSA convened a Future Systems Technology Advisory Panel (FSTAP) to provide independent advice and recommendations to the agency on the future of systems technology and electronic services at SSA. Panel membership includes a wide range of individuals from academia and private industry who are recognized for their technological expertise in the fields of customer service, health care, privacy, financial services, and document management. This panel should provide the agency with the much needed access to new, broader perspectives and the Board is hopeful that the panel will play an active role in shaping a new framework for IT at SSA.

The Board urges the agency to explore other avenues, as well. The NRC suggested that SSA consult with a Federally Funded Research and Development Center, similar to the one administered for the IRS by MITRE. By charter, FFRDCs offer vendor-neutral, technology advice and could help SSA think more strategically about IT development and how to move from the strategic to the tactical. More important, SSA must look beyond its internal technology community for solutions to the challenges it faces.

CONCLUSION AND RECOMMENDATIONS

The Social Security Administration is at a critical junction. Its ability to deliver service to the American public now and in the future is at considerable risk due to many of the factors discussed in this report. At the same time, the expectations of the public are changing; they look for the same service options from the government as are offered by the best in the private sector. To a significant degree, much of this can be addressed through technology. This transition will not be simple. It is a complex undertaking to plan, develop and manage the physical infrastructure, the hardware and software components, and the electronic services options in such a way that the need for urgency is balanced with steady, competent execution. While recent funding may help SSA address some of its most critical issues, there is still much to be done to establish modern enterprise-wide systems architecture.

We believe that SSA has recognized many of the problems discussed in this report that are affecting the agency's ability to use technology effectively to meet the challenges of service delivery now and in the future. Through our ongoing dialogue with the agency, we have, in the last two years, strongly encouraged change in this area and are gratified to see that SSA has initiated action on a number of fronts to improve the way it develops systems and provides automated services. Our hope is that the recommendations offered below will serve as a further catalyst of SSA's technological transformation.

- **Critical issues:** Comprehensive backup capacity, the replacement of the national computer center and conversion of SSA's databases are critical issues that must be addressed in the shortest possible timeframe as they are putting at risk the agency's ability to deliver services. To address the backup capacity and disaster recovery issues, the Board suggests that the newly formed Future Systems Technical Advisory Panel be enlisted to perform a quick analysis of the situation and provide recommendations to the Commissioner within 30 days.

- Strategic planning: The agency should initiate a long range strategic planning process that can serve as a guide for future program and systems development. Similar to efforts undertaken for 2000 and 2010, a strategic vision for 2020 and beyond must be developed in order to provide a “true north” point of reference for all agency planning efforts over the next decade. A new comprehensive systems modernization plan should also be developed that outlines the specific technology initiatives needed to support strategic objectives.
- Comprehensive business plans: High-performing organizations develop a vision of the future that emphasizes the overall process in order to achieve the intended outcomes. SSA needs to develop this vision and then conduct a comprehensive review of its major business processes. New business blueprints should be developed that reflect the most effective operation possible and should be used as the basis for efficient processing systems.
- Governance process: SSA needs to restructure its governance process for IT investments. The Board strongly suggests that the overall responsibility for IT should be centralized as the current bifurcated process has left the agency open to significant risk due to an aging infrastructure and poorly designed processing systems.
- A common case processing system for the disability program: It is imperative that the new case processing system consider the entire disability adjudication process in order to achieve the intended outcome. Rather than beginning with a primary focus on the DDS segment of the process, the entire disability business process must be taken into account before building an integrated system that serves all applicants, beneficiaries, and decision-makers across all adjudicative levels.
- Electronic service delivery: In addition to current efforts to upgrade some of the agency’s electronic services, much more is needed in order to meet the growing demand for alternative service delivery options. In accelerating the pace of expansion, the agency needs to incorporate electronic services as an integral part of all business plans.
- External guidance on future technologies: The process of assessing emerging technologies and new IT-related strategies must be a continuous process. The guidance that will be offered by the Future Systems Technology Advisory Panel is a positive beginning, but there also needs to be an ongoing commitment to open the agency up to the many possibilities that technology brings to the entire organization.

How will the Social Security Administration of 2020 deliver service to the American public? While the complete answer has not yet been clearly articulated, we know that technology must continue to play a major role in service delivery in the future, with intelligent systems fully automating more of the agency’s work, thereby enhancing the capabilities of SSA’s personal interface with beneficiaries. As new systems make the collection of information faster and more complete, the role of SSA employees will be as both technology managers and information analysts. Rather than requesting information and waiting for it to be received, information will be electronically available for immediate evaluation. Adjudicators will be able to complete claims in a fraction of the time it currently takes. The quality and the consistency of policy application across the organization will move the agency much closer to “getting it right the first

time.” Some of this “future” is on the drawing board at SSA through initiatives such as the automated request of medical records and expanding the use of data exchange throughout the public and private sectors. But a comprehensive strategy is needed to completely answer question.

It is vital that SSA create a vision that lays out a compelling roadmap for the future that will transcend changes in Administration and agency leadership. The agency must embrace new strategies for serving the American public and establish the foundation for the change that technology can bring to the agency’s structure for service delivery. There must also be a focus on the integration of technology and human resources as the agency restructures its business processes to adapt to a changing world.

In a 2008 letter to the Senate Appropriations Committee, the Board stated “that it is incumbent upon the Social Security Administration to once again envision a future where emerging technologies and other innovations can be used to deliver services that meet the needs of the American public. This will involve shedding traditional paradigms and undertaking a comprehensive review of current business processes, identifying gaps in service delivery, and looking for efficiencies that will leverage human capital and resources.”³⁹ The Social Security Administration is understandably proud of its history of public service; it needs to honor that history by ensuring the agency’s return to technological prominence.

³⁹ Letter to the U.S. Senate Appropriations Committee, Sylvester J. Schieber, Chairman, Social Security Advisory Board, June 19, 2008.

APPENDIX A

ADMINISTRATIVE AND INFORMATION SYSTEMS DEVELOPMENT AT SSA

1935	Social Security Board established to administer old-age pension program.
1936	First field office opened in Austin, Texas. Office for record-keeping opened in Baltimore. Post Office distributed employer applications and applications for Social Security numbers.
1937	First Regulation issued, governing disclosure of records.
1939	Social Security Board became part of newly established Federal Security Agency.
1942	First area office (later called program service center) opened in Philadelphia.
1946	Social Security Board abolished. Social Security Administration established as part of the Federal Security Agency, with Commissioner as chief executive.
1953	SSA became part of the Department of Health, Education and Welfare (HEW).
1956	SSA's first computer system installed in Baltimore to post earnings and compute benefits.
1961	District offices began using teletype to transmit data.
1963	Bureau of Family Services Separated from SSA and transferred to HEW.
1965	SSA reorganized to allow for administration of Medicare. New workloads handled by opening branch offices and extending office hours.
1966	Advanced Record System installed in field offices, providing SSA with a single, integrated telecommunications system.
1969	First Metropolitan Answering Service opened to handle telephone inquiries.
1972	Metropolitan Answering Services, then numbering 13, were renamed Teleservice Centers.
1976	Claims Automated Processing System introduced, speeding payment of OASDI claims.
1977	Reorganization moved Bureau of Health Insurance out of SSA to become part of the new Health Care Financing Administration (HCFA). Aid to Families with Dependent Children (AFDC) moved to SSA.
1979	SSA reorganized along functional lines, replacing the five original program bureaus (Retirement and Survivors Insurance, Disability Insurance, Health Insurance, Federal Credit Unions and Data Processing and Accounts)
1982	SSA's Systems Modernization Plan (SMP) issued.
1986	Aid to Families with Dependent Children (AFDC) removed from SSA. The SMP was executed with the nationwide installation of computer terminals in field offices.
1988	Nationwide toll-free 800-number service instituted. SSA's first strategic plan issued. SSA mails its first Personal Earnings and Benefit Estimate Statement (PEBES).
1989	First megasite teleservice center opened.
1995	SSA became an independent agency. Social Security Advisory Board established.
1996	Contract awarded and installation began of national system of intelligent

	workstations and local-area networks (IWS/LAN).
1997	Benefit estimates and earnings information made available via the internet and quickly suspended due to criticism about privacy concerns.
1998/1999	Reports issued outlining plans for improving the management of the SSI program and the disability determination and hearings processes.
2000	SSA began taking electronic disability claims over the Intranet. PEBES replaced with the <i>Social Security Statement</i> and mailed to all workers age 25 and over.
2003	Social Security Number Verification Service (SSNVS) implemented to assist employers with employee SSN verifications for accurate wage reporting. Document Management Architecture (DMA) implemented, allowing medical evidence to be managed electronically.
2004	Help America Vote Verification System was implemented to increase voter registration.
2005	SSA releases its system to manage its responsibilities under the Medicare Modernization Act (MMA)—the Medicare Prescription Drug Program.
2006	The electronic disability system (eDib) was implemented successfully in all 50 states and the territories. The first phase of the Disability Service Improvement initiative was implemented in the Boston Region; later most parts of the initiative were suspended due to cost concerns.
2007	SSA began implementation of video hearings capabilities.
2008	Initial rollout of the Intelligent Disability Capability begins—an umbrella initiative focused on improving the disability process and reducing hearings backlogs.

APPENDIX B

STUDY METHODOLOGY

Over the course of its history, the Social Security Administration has at times been considered to be on the leading edge of technology and at times to be operating with badly outdated and inadequate systems. While the agency has made major investments in automation over the years, we have consistently heard concerns about the state of the agency's basic infrastructure, the number of systems that are in need of major renovation, the aging telephone technology in local offices, and the need to invest in technology to meet growing workload demands. As a result, in January 2007, SSAB decided to pursue a study of the current state of SSA's information technology infrastructure and the agency's preparation for redesigning and delivering services that leverage new technologies.

Early research for this project included a review of SSA's most significant and forward-thinking strategic plans (1988 and 2000) wherein a vision for service delivery in an electronic environment was first articulated. A cross-walk between these two plans and SSA's more recent Agency Strategic Plans was prepared as a background paper and was used as a roadmap for further research. The Board then closely examined external research on SSA's IT infrastructure conducted by the National Research Council, the Government Accountability Office, SSA's Office of Inspector General, and the Office of Management and Budget.

The project formally began in April 2007 when the Chief Information Officer and Deputy Commissioner for Systems provided Board members with an update on the state of SSA's IT infrastructure and planning strategy. The Board spent the next 10 months interviewing individuals inside the agency, former SSA executives, information technology executives from other federal agencies as well as private sector IT and business managers.

Through our discussions with several SSA and DDS executives we gained a more thorough understanding of the business relationship between the Office of Systems, the Chief Information Officer and the agency's operating divisions. In subsequent conversations, former SSA IT and strategic planning executives discussed their perceptions on what has and has not worked at SSA. During visits to the Chicago, Denver and Philadelphia Regions, we took the opportunity to talk with field employees, regional IT support staff, and representatives from the DDS community.

Having obtained a fairly comprehensive perspective on the current state of SSA's infrastructure, we began to examine the enterprise architecture of similar public and private sector organizations as a basis of comparison. Both IT and business process managers at the IRS and the VA were consulted to gain their perspectives on lessons learned. We believed it was important to understand how the relationship between systems developers and the business owners was managed, how decisions were made and resources allocated, and how the lines of responsibility and accountability were delineated. Our discussions with the Chief Information Officer, business managers and strategic planners at Aetna provided us with useful perspectives on governance and the value of strong leadership, the importance of strategic planning and business blueprints, and the critical need for end-users' assessment of new technologies.

Before we wrapped up the information gathering and research phase of our study, we had a subsequent conversation with the Deputy Commissioner for Systems. We wanted to learn about any significant changes that might have been made to the agency's IT strategy since our initial April 2007 briefing.

APPENDIX C

ORGANIZATIONS AND PEOPLE CONSULTED

The Social Security Administration (SSA):

Tom Hughes, Chief Information Officer
Bill Gray, Deputy Commissioner for Systems
Jerry Berson, Assistant Deputy Commissioner for Systems
Laraine Williams, Deputy Chief Strategic Officer
Kelly Croft, Deputy Commissioner for Quality Performance
Mark Blatchford, Associate Commissioner, Office of Public Services and Operations Support
Nancy Berryhill, Regional Commissioner, Denver Region

The Virginia Disability Determination Service:

Robbie Watts, Director

The Department of Veterans Affairs (VA):

Stephen Warren, Deputy Assistant Secretary, Office of Information and Technology

The Internal Revenue Service (IRS):

Andrew Buckler, Senior Advisor to the Deputy Commissioner of Operations Support
Bob Albicker, Former Deputy Associate Commissioner for Business Integration
Dave Medeck, Business Modernization Office Executive
Jim Dumais, Executive Advisor to the Deputy Commissioner Services and Enforcement

Aetna:

Meg McCarthy, Chief Information Officer and Senior Vice President of Procurement and Real Estate
Ted Fleming, Managing Director, Strategic Planning
Nancy Taylor-Ross, Finance Director, Planning and Performance

The University of Illinois:

Tom Prudhomme, Director, Division of Cybercommunities, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign

The National Research Council (NRC) Committee:

Stephen Holden, Committee Member
Lynnette Millett, Study Director and Senior Program Officer
Jon Eisenberg, Executive Director

Former SSA Employees:

Dick Eckert, former SSA Systems Executive
Renaldo DiPentima, former Deputy Commissioner for Systems
Sue Roecker, former Senior Advisor to the Chief Information Officer

ESTABLISHMENT OF THE SOCIAL SECURITY ADVISORY BOARD

In 1994, when Congress passed Public Law 103-296 establishing the Social Security Administration as an independent agency, it also created an independent, bipartisan Advisory Board to advise the President, the Congress, and the Commissioner of Social Security on matters related to the Social Security and Supplemental Security Income programs. Under this legislation, appointments to the Board are made by the President, the Speaker of the House of Representatives, and the President pro tempore of the Senate.

Advisory Board members are appointed to staggered six year terms, made up as follows: three appointed by the President (no more than two from the same political party); and two each (no more than one from the same political party) by the Speaker of the House (in consultation with the Chairman and the Ranking Minority Member of the Committee on Ways and Means) and by the President pro tempore of the Senate (in consultation with the Chairman and Ranking Minority Member of the Committee on Finance). Presidential appointments are subject to Senate confirmation. The President designates one member of the Board to serve as Chairman for a four year term, coincident with the term of the President, or until the designation of a successor.

BOARD MEMBERS

Sylvester J. Schieber, Chairman

Sylvester J. Schieber is a private consultant on retirement and health issues based in New Market, Maryland. He retired from Watson Wyatt Worldwide in September 2006 where he had served as Vice President/U.S. Director of Benefit Consulting and Director of Research and Information. From 1981-1983, Mr. Schieber was the Director of Research at the Employee Benefit Research Institute. Earlier, he worked for the Social Security Administration as an economic analyst and as Deputy Director of the Office of Policy Analysis. Mr. Schieber is the author of numerous journal articles, policy analysis papers, and several books including: *Retirement Income Opportunities in An Aging America: Coverage and Benefit Entitlement*; *Social Security: Perspectives on Preserving the System*; and *The Real Deal: The History and Future of Social Security*. He served on the 1994-1996 Advisory Council on Social Security. Mr. Schieber received his Ph.D. from the University of Notre Dame. First term of office: January 1998 to September 2003. Current term of office: October 2003 to September 2009. He was appointed by the President in September 2006 to serve as Chairman of the Advisory Board from October 2006 to January 2009.

Dana K. Bilyeu

Dana K. Bilyeu is the Executive Officer of the Public Employees' Retirement System of Nevada. As the Executive Officer of the \$21 billion pension trust she is responsible for all aspects of fund management including analysis of plan funding, investment oversight, operational and strategic planning, and fiduciary and governance issues. Mrs. Bilyeu is principally responsible for the relationship with the System's independent actuary and oversees the data reconciliation process

for actuarial valuations of the System. In her capacity as the Executive Officer, Mrs. Bilyeu provides information and analysis to the Nevada Legislature in consideration of pension policy issues affecting State and local government. Prior to her appointment as the Executive Officer, Mrs. Bilyeu served for eight years as the System's Operations Officer, overseeing all aspects of benefit administration, including survivor, disability, and retirement benefit programs. Mrs. Bilyeu also was responsible for cost effectiveness measurement for all activities of the System. She was accountable for technology oversight as well as policy issues related to the public safety sector of public employment. Prior to her employment at the System, Mrs. Bilyeu was the System's legal counsel, representing the System in a variety of aspects from benefits litigation, contracts analysis, to Board governance. Mrs. Bilyeu is a member of the National Association of State Retirement Administrators, the National Council on Teacher Retirement, the National Conference of Public Employee Retirement Systems, and the National Association of Public Pension Attorneys. She also serves on the Public Employee Advisory Board for the International Foundation of Employee Benefit Plans. She received her *juris doctor* from California Western School of Law and her B.A. from the University of Arizona. Term of office: December 2006 to September 2010.

Dorcas R. Hardy

Dorcas R. Hardy is President of DRHardy & Associates, a government relations and public policy firm serving a diverse portfolio of clients. After her appointment by President Ronald Reagan as Assistant Secretary of Human Development Services, Ms. Hardy was appointed Commissioner of Social Security (1986 to 1989) and was appointed by President George W. Bush to chair the Policy Committee for the 2005 White House Conference on Aging. Ms. Hardy has launched and hosted her own primetime, weekly television program, "Financing Your Future," on Financial News Network and UPI Broadcasting, and "The Senior American," an NET political program for older Americans. She speaks and writes widely about domestic and international retirement financing issues and entitlement program reforms and is the co-author of *Social Insecurity: The Crisis in America's Social Security System* and *How to Plan Now for Your Own Financial Survival*, Random House, 1992. A former CEO of a rehabilitation technology firm, Ms. Hardy promotes redesign and modernization of the Social Security, Medicare, and disability insurance systems. Additionally, she has chaired a Task Force to rebuild vocational rehabilitation services for disabled veterans for the Department of Veterans Affairs. She received her B.A. from Connecticut College, her M.B.A. from Pepperdine University, and completed the Executive Program in Health Policy and Financial Management at Harvard University. Ms. Hardy is a Certified Senior Advisor and serves on the Board of Directors of Wright Investors Service Managed Funds, and First Coast Service Options of Florida. First term of office: April 2002 to September 2004. Current term of office: October 2004 to September 2010.

Marsha Rose Katz

Marsha Rose Katz is a Project Director at the University of Montana Rural Institute in Missoula, where her work has concentrated on assisting persons with disabilities to utilize Social Security work incentives to start their own businesses or engage in wage employment. Since coming to the Rural Institute in 1999, Ms. Katz has focused on providing training and technical

assistance on both employment and SSI/SSDI to rural, frontier and tribal communities across the country. Previously, she worked for nearly 20 years in a disability rights community based organization, the Association for Community Advocacy (ACA), a local Arc in Ann Arbor, Michigan. She served as both Vice President of ACA, and Director of its Family Resource Center. It was at ACA that Ms. Katz began her nearly 30 years of individual and systems advocacy regarding programs administered by SSA, especially the SSI and SSDI programs. Ms. Katz has written numerous articles and created many widely distributed user-friendly general handouts on SSI and SSDI, the majority of which focus on the impact of work on benefits, and utilizing work incentives. She is the author of *Don't Look for Logic; An Advocate's Manual for Negotiating the SSI and SSDI Programs*, published by the Rural Institute. Her Bachelor's and Master's Degrees are from the University of Michigan. Ms. Katz's many years of experience as a trainer, technical advisor, and advocate have been guided and informed by her partnership with people with disabilities, from her husband, Bob Liston, to the people she assisted in her work with ACA and the Arc Michigan, her current work at the Rural Institute, and her longstanding participation in ADAPT, the nation's largest cross-disability, grassroots disability rights organization. Term of office: November 2006 to September 2012.

Barbara B. Kennelly

Barbara B. Kennelly became President and Chief Executive Officer of the National Committee to Preserve Social Security and Medicare in April 2002 after a distinguished 23-year career in elected public office. Mrs. Kennelly served 17 years in the United States House of Representatives representing the First District of Connecticut. During her Congressional career, Mrs. Kennelly was the first woman elected to serve as the Vice Chair of the House Democratic Caucus. Mrs. Kennelly was also the first woman to serve on the House Committee on Intelligence and to chair one of its subcommittees. She was the first woman to serve as Chief Majority Whip, and the third woman in history to serve on the 200-year-old Ways and Means Committee. During the 105th Congress, she was the ranking member of the Subcommittee on Social Security. Prior to her election to Congress, Mrs. Kennelly was Secretary of State of Connecticut. After serving in Congress, Mrs. Kennelly was appointed to the position of Counselor to the Commissioner at the Social Security Administration (SSA). As Counselor, Mrs. Kennelly worked closely with the Commissioner of Social Security, Kenneth S. Apfel, and members of Congress to inform and educate the American people on the choices they face to ensure the future solvency of Social Security. She served on the Policy Committee for the 2005 White House Conference on Aging. Mrs. Kennelly received a B.A. in Economics from Trinity College, Washington, D.C. She earned a certificate from the Harvard Business School on completion of the Harvard-Radcliffe Program in Business Administration and a Master's Degree in Government from Trinity College, Hartford. Term of office: January 2006 to September 2011.

Mark J. Warshawsky

Mark J. Warshawsky is Director of Retirement Research at Watson Wyatt Worldwide, a global human capital consulting firm. He conducts and oversees research on employer-sponsored retirement programs and policies. A frequent speaker to business and professional groups, Dr. Warshawsky is a recognized thought leader on pensions, social security, insurance and health

care financing. He has written numerous articles published in leading professional journals, books and working papers, and has testified before Congress on pensions, annuities and other economic issues. A member of the Social Security Advisory Board for a term through 2012, he is also on the Advisory Board of the Pension Research Council of the Wharton School.

From 2004 to 2006, Dr. Warshawsky served as assistant secretary for economic policy at the U.S. Treasury Department. During his tenure, he played a key role in the development of the Administration's pension reform proposals, particularly pertaining to single-employer defined benefit plans, which were ultimately included in the Pension Protection Act ("PPA") of 2006. He was also involved extensively in the formulation of Social Security reform proposals, and oversaw the Department's comprehensive 2005 study of the terror risk insurance program. In addition, Dr. Warshawsky led the efforts to update and enhance substantially the measures and disclosures in the Social Security and Medicare Trustees' Reports, as well as the setting of the macroeconomic forecasts which underlie the administration's budget submissions to Congress.

Dr. Warshawsky's research has been influential in the 2001-2002 regulatory reform of minimum distribution requirements for qualified retirement plans, the increasing realization of the importance of financial protection against outliving one's financial resources in retirement, and a product innovation to integrate the immediate life annuity and long-term care insurance. For the latter research, he won a prize from the British Institute of Actuaries in 2001 for a professional article he co-authored. Favorable tax treatment for this integrated product was also included in PPA due to Dr. Warshawsky's advocacy. Dr. Warshawsky has also held senior-level economic research positions at the Internal Revenue Service, the Federal Reserve Board in Washington, D.C. and TIAA-CREF, where he established the Paul A. Samuelson Prize and organized several research conferences. A native of Chicago, he received a Ph.D. in Economics from Harvard University and a B.A. with Highest Distinction from Northwestern University. Term of office: December 2006 to September 2012.

Members of the Staff

Katherine Thornton, Staff Director
Deborah Sullivan, Deputy Staff Director
Joel Feinleib
George Schuette
Beverly Sheingorn
Jean Von Anckin
David Warner

Social Security Advisory Board

An independent, bipartisan Board created by the Congress and appointed by the President and the Congress to advise the President, the Congress, and the Commissioner of the Social Security Administration on matters related to the Social Security and Supplemental Security Income programs.