The Social Security Administration's Decentralized Computer Strategy: Issues and Options

April 1994

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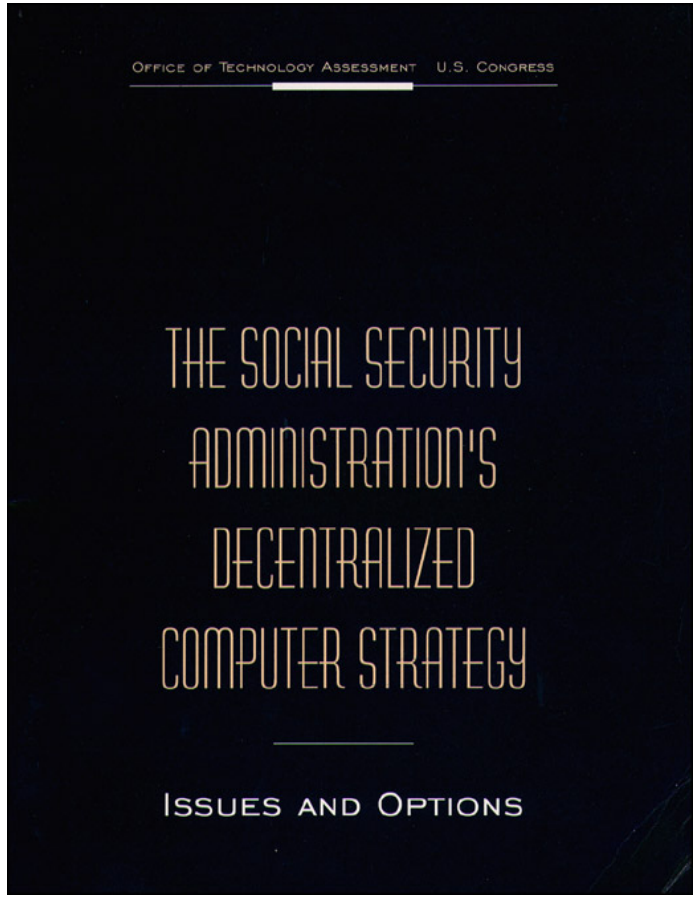

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Foreword

The Social Security Administration is one of the largest federal service agencies, based on the number of clients and employees and the size of its budget. Millions of older, disabled, and low-income Americans depend on SSA benefits to make ends meet. However, SSA is struggling to meet congressional and public expectations for service delivery because of the relentless increase in its workload and the constraints on staff and resources.

Information technology is a vital tool for SSA for providing responsive and cost-effective service. The House Committee on Appropriations asked the Office of Technology Assessment to review SSA's plans for its latest round of technology modernization—known as the intelligent workstation and local area network program, or IWS/LAN—that will use decentralized networks of personal computers at SSA and the state offices. OTA found that SSA's planned evolution to IWS/LAN is technically sound and compatible with generally accepted public and private sector practices. But to realize the full benefits of IWS/LAN, SSA will need to improve its service delivery planning and think more creatively about the possibilities for electronic delivery.

This report provides Congress with OTA's evaluation of SSA's decentralized computer strategy and service delivery planning. It offers a range of congressional options for funding SSA's technology modernization, including possible benchmarks and milestones to help SSA achieve a higher return on its information technology investments. The report highlights some of the opportunities and challenges faced by a major federal agency in: 1) implementing the Administration's "National Performance Review** and "National Information Infrastructure" programs, and 2) addressing issues raised in OTA's 1993 report *Making Government Work: Electronic Delivery of Federal Services.*

OTA appreciates the assistance of the many SSA and General Accounting Office staff who provided input and reviews, as well as the workshop participants and others who participated in the study. OTA values their perspectives and comments; the report is, however, solely the responsibility of OTA.



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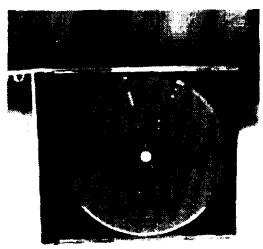
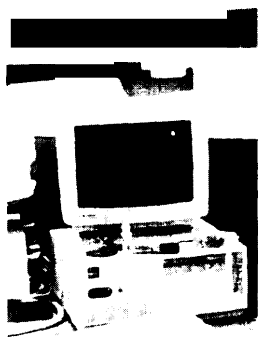






Executive Summary

The Social Security Administration (SSA) distributes benefit payments to more than 47 million people each month, and about $350 billion in total benefit payments each year. Millions of older, disabled, and/or low-income Americans depend on SSA benefits to make ends meet. Over 200 million people have Social Security numbers that are widely used for recordkeeping and identification purposes. And SSA tracks the earnings and accrued benefits of over 140 million working Americans.

An ever-increasing workload, combined with staff reductions, threatens SSA's ability to meet congressional and public expectations for service delivery. The agency's toll-free 800 telephone numbers are severely overloaded during peak periods, for example, and its Disability Insurance benefits program is in serious distress with a large backlog and long processing delays.

Today, information technology is essential to SSA in carrying out its mission. Indeed, SSA would literally collapse without the use of computers and telecommunications. To carry a growing workload, SSA is placing high hopes on its next round of technology modernization-a 5-year, $1. 125-billion automation investment fund commonly referred to as the IWS/LAN Technology Program. IWS/LAN is short for "intelligent workstation (IWS) and local area network (LAN)." The workstations are current generation, off-the-shelf microcomputers (i.e., personal computers or PCs), and the LANs are a widely implemented means of interconnecting microcomputers in local networks that can, in turn, be tied together into larger networks.



FINDINGS

The Office of Technology Assessment (OTA) concludes that SSA's planned evolution from ● 'dumb" terminals (with only minimal local processing or storage capability) to networked microcomputers is well within widely accepted government and private sector practices. Many agencies and companies have already made this transition. SSA has specified a flexible, off-the-shelf microcomputer platform that is available at a low per-unit cost and will allow upgrades as available and needed.

It is important to emphasize, however, that SSA's IWS/LAN technology planning and testing are well ahead of the agency's understanding of how to use IWS/LAN to upgrade service delivery. SSA's strategic and information systems planning has improved markedly in recent years, but service delivery planning is lagging. Only recently has SSA management included meaningful customer and labor participation in the planning effort to improve sex-vice delivery.

OTA concludes that, while IWS/LAN is a flexible technology and can be properly viewed as part of the SSA infrastructure for service delivery, a tighter connection needs to be made between the technology and the expected improvements in service delivery to make best use of IWS/LAN. To strengthen the planning for service delivery, it will be necessary to allocate more staff to the planning group and assure that the group has authority for integrated strategic planning and management that cut across all SSA offices and programs. The planning group also needs members who have strong expertise in electronic service delivery.

OTA's review suggests that, while SSA's current electronic delivery program is exploring or using a wide range of technologies and applications, it is underfunded and is missing some key information technology opportunities. As a consequence, SSA is not developing a complete understanding of what role IWS/LAN technology should play in the larger context of electronic delivery. Revising priorities and reallocating staff and funds could help increase the chances that the IWS/LAN technology program will succeed.

OTA believes that IWS/LAN, if properly deployed, could substantially improve SSA's service delivery. Unfortunately, however, the agency's cost-benefit analyses and technology transition planning to date provide little help in understanding IWS/LAN's potential to improve delivery of services or reinvent SSA operations. Although SSA does have a comprehensive planning and budgeting system in place, it is not yet being used to estimate the costs, benefits, and performance impacts of IWS/LAN. This will be difficult to do well until service delivery planning improves.

Determining eligibility for disability benefits is acknowledged as the most troubled SSA service and is the current focus of SSA's reengineering efforts. State Disability Determination Service (DDS) offices evaluate disability applications, make decisions, and conduct continuing reviews of eligibility. State DDS offices are fully funded by SSA, but state DDS staff are state, rather than federal, employees and operate pursuant to numerous state (as well as federal) regulations.

OTA's review indicates that the states strongly support the modernization of state DDS offices, but have concerns about a range of technical and procurement matters. SSA has addressed these concerns over the past year. But continuing differences in federal and state perspectives suggest that a joint SSA-state review is needed to further streamline the modernization process and to make best use of available funds. A joint review team might also consider: SSA's priorities for IWS/LAN installation in state DDS offices; relative priorities between DDS and SSA offices; the findings and recommendations (when available) of SSA's disability process reengineering task force; and broader state plans for electronic service delivery in which SSA could participate.

POLICY OPTIONS FOR CONGRESS

The primary congressional policy options relevant to this OTA review involve the timing, levels, allocations, and conditions of funding for SSA's current automation program.

Options for Obligation of FY 1994 Appropriation

Congress could:

1. Request SSA to defer the IWS/LAN procurement (and obligation of the $300 million appropriated for FY 1994);
2. Allow SSA to proceed as planned; or
3. Permit SSA to proceed with a modified procurement that reflects the results of the agency's interim reengineering and service delivery planning, this OTA review, and the General Accounting Office's (GAO's) continuing evaluation.

Early milestones that would increase OTA's confidence in the agency's ability to fully utilize IWS/LAN technology and significantly improve service delivery include the SSA: satisfactorily completing the disability reengineering draft report (due March 31, 1994); strengthening its service delivery planning process; improving the balance and funding for its portfolio of electronic delivery projects; and initiating an SSA-state review of the disability modernization program.

SSA could reprogram a percentage of FY 1994 funds (e.g., 5 percent or $15 million) for use in reengineering and in implementation of the Agency Strategic Plan—including service delivery planning and testing.

SSA also could reprioritize the FY 1994 IWS/LAN procurement to cover offices and locations that offer the greatest near-term leverage for improving services, and are most likely to remain stable under a range of reengineering and reorganization scenarios.

Options for FY 1995 Appropriation

Congress could:

1. Provide zero funding for IWS/LAN in FY 1995;
2. Provide the requested funding ($130 million) with no strings attached;
3. Provide FY 1995 or 1995-96 funding ($130 million or $385 million) with strings attached; or
4. Provide full multiyear funding ($825 million for FY 1995-98).

OTA believes that SSA may be able to justify the $130 million for FY 1995 if SSA continues to improve its service delivery planning, among other areas. Appropriating FY 1995 (and perhaps FY 1996) funds with conditions and modifications would allow SSA to continue generally on schedule, but with added incentives to ensure the best use of available monies. This option should keep the IWS/LAN program on track while, at the same time, permitting more effective congressional oversight and holding SSA more accountable for performance.

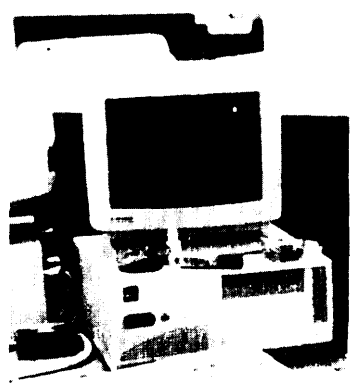
In OTA's judgment, the advisability of appropriating FY 1995-96 monies in the FY 1995 budget cycle depends significantly on SSA's ability to meet early milestones for use of the FY 1994 appropriation. Appropriations beyond FY 1996 are not prudent at this time, in OTA's view, given the lack of clarity and documentation for use of the out-year funds.

Congress also could attach conditions to SSA's general operating funds. These funds total about $5 billion (of which about $400 million funds the SSA annual information technology budget)—all separate and apart from the 5-year, $1. 125-billion SSA automation investment program. Funds could be reprogrammed or prioritized within the SSA operating budget to cover reengineering and service delivery priorities. Funds might also be used to strengthen SSA's strategic management, which OTA believes is key to SSA's ultimate success in improving service delivery.

Summary and Policy Options 1

The Social Security Administration, in many respects, is our nation's largest government service agency. More than 47 million people receive over $350 billion each year in SSA benefit payments. SSA has issued about 360 million Social Security numbers, of which roughly 205 million are active. In 1992, SSA issued nearly 7 million new and 10 million replacement cards, and tracked the earnings of 140 million people. Millions of older, disabled, and/or low-income Americans depend on SSA benefits to make ends meet. [1]

The ability of SSA to deliver services quickly, efficiently, and responsively is of vital concern to Congress, the Administration, and the public. Congressional committees and the General Accounting Office (GAO) have urged action on the many management, personnel, and technology challenges facing SSA.[2] The Administration's "National Performance Review" has assigned high priority to improving delivery of SSA services,[3] as have senior citizens' and disability advocacy groups.[4]



[1] See ch. 2 for a discussion of trends in SSA's workload.

[2] See, for example, U.S. Congress, General Accounting Office, Report to the Commissioner, Social Security Administration, *Social Security: Sustained Effort Needed To Improve Management and Prepare for the Future,* GAO/HRD-94-22 (Gaithersburg, MD: October 1 993).

[3] See Vice president Al Gore, *Creating a Government That Works Better & Costs Less: Report of the National Performance Review* (Washington, DC: U.S. Government Printing Office, September 1 993).

[4] See, for example, statements of Robert Shreve, American Association of Retired Persons; Ethel Zelenske, National Senior Citizens Law Center; and Stan Kress, President, National Council of Disability Determination Directors before a hearing on "Reinventing the Social Security Administration" held by the House Committee on Ways and Means, Subcommittee on Social Security, Oct. 28, 1993.

Today, information technology is essential to SSA in carrying out its mission. Indeed, SSA would literally collapse without the use of computers and telecommunications. Management expertise and human resources are equally important, but technology is frequently the focal point for debate over the quality and future of SSA services.

INTRODUCTION

In its early years, SSA was in the forefront of information technology and was one of the first users of mainframe computers. A decade ago, SSA embarked on a "Systems Modernization Plan" to upgrade its technology bases The results of this upgrade have been dramatic, as reflected in significant reductions in the time required for SSA to issue Social Security cards (cut from 6 weeks to 10 days), recompute annual benefit levels (cut from 4 years to 6 months), and post annual earnings reports (cut from 39 to 6 months).[6]

But an ever-increasing workload (see chapter 2), combined with possible staff reductions,[7] once again threatens SSA's ability to meet congressional and public expectations for service delivery. The use of toll-free 800 telephone numbers, for example, has become a key part of SSA's service delivery strategy. But during peak periods, the telephone system is overloaded to the point where most callers receive a busy signal on their first attempt. SSA's Disability Insurance (DI) and Supplemental Security Income (SSI) programs are medically and/or means tested. This necessitates periodic reviews to assure that recipients continue to be eligible based on their medical and financial condition. The joint federal-state program for initial and continuing reviews of eligibility for disability benefits is in serious distress.[8] Initial determinations can take up to several months, with a current backlog of over 725,000 cases. The backlog of continuing reviews is even larger. For SSI, the estimated error rate is about 3.5 percent, roughly three-quarters of a billion dollars per year.[9] The error rate for D] is not regularly measured, but probably is at least similar to SSI. These errors include overpayments to eligible recipients or payments to ineligible recipients. An unknown number of eligible people receive underpay merits or no payments at all because benefits were erroneously denied or the persons did not apply. [10]

This Office of Technology Assessment (OTA) study focuses on SSA's current proposal for its next round of technology modernization-a 5-year, $1.1 25-billion Automation Investment Fund scheduled to run from FY 1994 through FY 1998. The investment proposal is commonly re-

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[5] U.S. Congress, Office of Technology Assessment, *The Social Security Administration and Information Technology,* OTA-CIT-3 1 I (Washington, DC: U.S. Government Printing Office, October 1986).

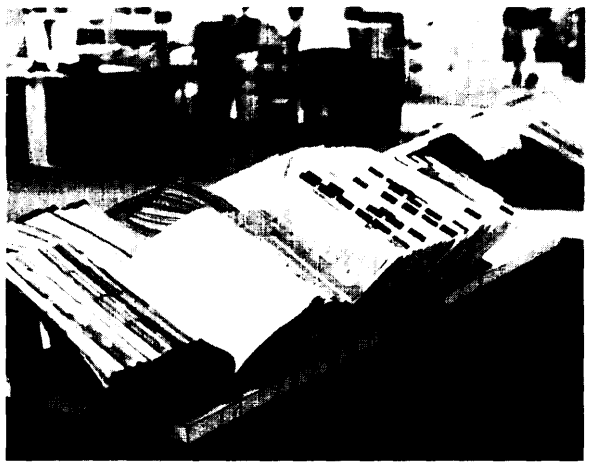
[6] See Social Security Administration, *Information Systems P/an* (Baltimore, MD: September 1993), p. 1-6 and figure I -1. SSA has implemented several technology-based services, such as automatic enumeration and issuance of Social Security cards at birth, and automated issuance of personal earnings and benefit statements.

[7] SSA's full-time equivalent staffing level dropped from about 83,000 persons in FY 1983 to 63,000 in FY 1990, and has remained stable since. Further cuts due to government-wide downsizing are possible.

[8] See U.S. Congress, General Accounting Office, *Social Security: Increasing Number of Disability Claims and Deteriorating Service*, GAO/HRD-94-11 (Gaithersburg, MD: Nov. 14, 1993).

[9] See U.S. *Congress,* House *committee* on Ways and Means, *Overview of Entitlement Programs: 1992 Green Book*, WMCP 102-44 (Washington, DC: U.S. Government Printing Office, May 15, 1992), p. 1605. Also see Vice President Gore, op. cit., footnote 3, p. 109; Jane L. Ross, U.S. General Accounting Office, "Processing of Continuing Disability Reviews," testimony before the House Select Committee on Aging, Mar. 9, 1993, GAO/T-HRD-93-3; and Jane L. Ross, U.S. General Accounting Office, "SSA Needs To Improve Service for program Participants," testimony before the House Committee on Ways and Means, Subcommittee on Social Security, Mar. 25, 1993.

[10] The National Caucus and Center on Black Aged estimates that 1.5 million elderly poor people eligible for SSI are not receiving benefits. See Joyce T. Berry, former U.S. Commissioner on Aging, U.S. Department of Health and Human Services, statement before the Congressional Black Caucus Forum on "Aging: A Black Financial Crisis," Sept. 17, 1993.







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SSA is using information technology to he/p make the transition from a paper based to an electronic agency
Top: *SSA* has *thousands of pages of regulations that take up several feet of shelf space per set*
Bottom left: *Many SSA employees still work in a sea of paper.*
Bottom right: Individual disability *case files frequent/y generate thick folders of documents that are moved around by pushcart,*

ferred to as the "IWS/LAN Technology Program," and is separate from SSA's operating budget. IWS/LAN is short for "intelligent work station (IWS) and local area network (LAN)." The workstations are current generation off-the-shelf microcomputers, and the LANs are a widely implemented means of interconnecting microcomputers in local networks that can, in turn, be tied together into larger networks. The SSA Automation Investment Fund includes more than just microcomputers and LANs, which account for about 30 percent of the total anticipated expenditures. Ergonomic furniture and site preparation represent another 30 percent, and training and telecommunications about 10 percent. Unspecified reengineering accounts for the remaining 30 percent. [11]

Consideration of SSA's modernization program is complicated by several factors. First, SSA's technology planning historically has led strategic and operational planning by several years. Prior GAO, National Research Council,

[11] SSA has revised its estimated allocation of the $1.125 billion as follows (original allocation followed by current estimates): IWS/LAN (decreased from $341 million to $316 million); ergonomic furniture and site preparation (increased from $307 million to $422 million); support services and training (decreased from $42 million to $25 million); telecommunications and maintenance (increased from $122 million to $125 million); and reengineering Agency Strategic Plan implementation (decreased from $313 million to $237 million),

and OTA reports, among others, have criticized SSA for inadequate strategic planning. [12] SSA has made notable progress in developing its "Agency Strategic Plan" in 1991 and followup tactical plans. [13] Service delivery planning is still weak, giving rise to concerns about the ability of SSA to properly execute the modernization program. A service delivery plan can be viewed as a mid-level plan that establishes linkages between strategic and tactical planning. Second, the Administration's "National Performance Review" [14] and OTA's *Making Government Work,* [15] among other reports, [16] have highlighted the importance of information technology in reinventing government and improving service delivery. But these studies also emphasize the major challenges facing SSA and other agencies moving into the era of electronic service delivery. This is not an easy transition under the best of circumstances. Third, the tightly constrained federal budget, with little real increase in discretionary spending, means that all agency proposals are being more rigorously scrutinized. In prior decades, agency information technology programs were approved largely on faith without the more detailed explanations and justifications now required.

The Administration requested congressional approval of the entire $1.125 billion in no-year funds (that could be obligated over a 5-year period) as part of the SSA appropriation for FY 1994. GAO took issue with the SSA's Automation Investment Fund, citing concerns about documentation for SSA's technical solution, service delivery benefits and total resource requirements, measurement of performance and costs, and implications for state disability determination activities. [17] The House Committee on Appropriations shared GAO's concerns and asked SSA to address these concerns before obligating the $330 million

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12 See U.S. Congress, General *Accounting* Office, *Social Security Administration: Stable Leadership and Better Management Needed To Improve Effectiveness*, GAO/HRD-87-39 (Gaithersburg, MD: March 1987; *Social Security: Status and Evaluation of Agency Management Improvement Initiatives*, *GAO/HRD-89-42,* July 1989; *Health and Human Services Issues*, GAO/OCG-93-20TR, December 1992, pp. 11-16; *Social Security: Sustained Effort Needed,* op. cit., footnote *2.* National Research Council, Computer Science and Telecommunications Board, *Elements of System Modernization for the Social Security Administration* (Washington, DC: National Academy Press, 1991). U.S. Congress, Office of Technology Assessment, *The Social Security Administration and Information Technology,* OTA-CIT-311 (Washington, DC: U.S. Government Printing Office, October 1986). John Harris, Alan F. Westin, and Anne L. Finger, Reference Point Foundation, "innovations for Federal Service: A Study of Innovative Technologies for Federal Government Services to Older Americans and Consumers," contractor paper prepared for the Office of Technology Assessment, February 1993, see esp. pp. 47-64. Office of inspector General, Department of Health and Human Services, "Social Security Client Satisfaction: Fiscal Year 1993," June 1993.

13 See Social Security Administration, "The Social Security Strategic Plan: A Framework for the Future," September 1991; "SSA Strategic Priority Transition Guidance,' 'June 1992; and "Implementation of the Social Security Administration's Strategic Plan-A Status Report," June 1993.

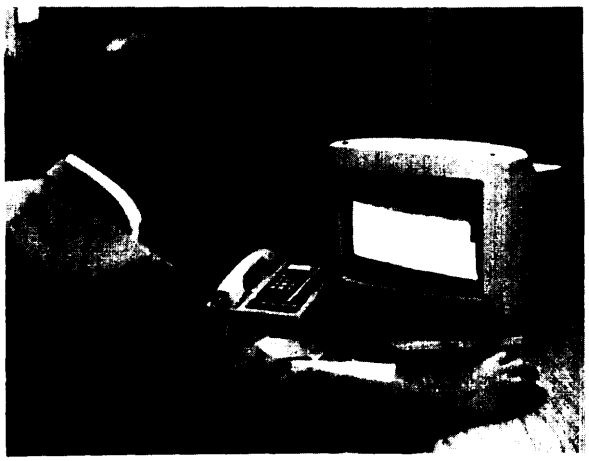
14 Vice President Gore, op. cit., footnote 3.

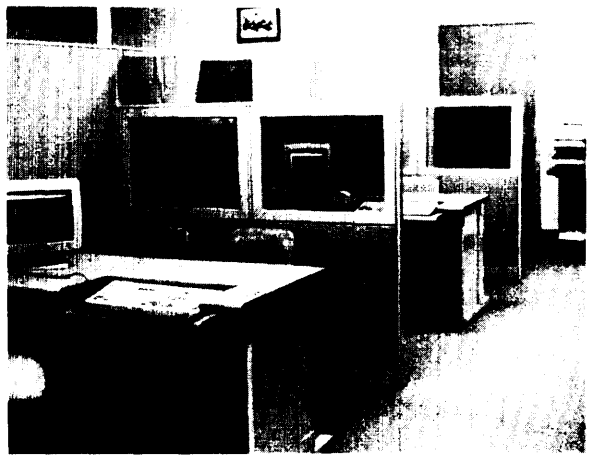
15 U.S. *congress,* Office Of Technology Assessment, *Making Government Work: Electronic Delivery of Federal Services*, OTA-TCT-578 (Washington, DC: U.S. Government Printing Office, September 1993).

16 Also *see* U.S. *Genera]* Services *Administration, Service to the Citizens: Project Report,* KAP-93-1 (Washington, DC: GSA, information Resources Management Service, February 1993).

17 See letter from Frank W. Reilly, Director, Human Resources Information Systems, Information Management and Technology Division, U.S. General Accounting Office, to Louis D. Enoff, then Acting Commissioner of the Social Security Administration, Mar. 30, 1993. SSA engaged in lengthy discussions with GAO. In a Nov. 17, 1993, letter from Lawrence H. Thompson, SSA's Principal Deputy Commissioner, to Donald A. Chapin, Assistant Comptroller General, SSA stated its belief that actions to date "are adequate to address all issues in GAO's letter and that the IWS/LAN project should proceed." In a Dec. 23, 1993, letter from Frank W. Reilly, Director, Health, Education, and Human Services Information Systems, Accounting and Information Management Division, to Lawrence H. Thompson, SSA's Principal Deputy Commissioner, GAO responded that "we do not believe the issues [previously raised by GAO] have been addressed adequately to fully support funding your [SSA's] planned IWS/LAN acquisition."







SSA's Intelligent work station and local area network program is intended to provide most SSA employees with a personal computer and ergonomic furniture.
Top: *Personal computers can support walk-in counter service in an SSA office*
Bottom left: An *SSA employee demonstrates use of the graphical user interface on a personal computer.*
Bottom right: *Personal computers can help SSA employees conduct client interviews in an SSA office.*

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appropriated for FY 1994.18 The Senate Committee on Appropriations, citing similar concerns about inadequate SSA justification as well as general funding constraints, appropriated $220 million.[19] The House and Senate compromised on a $300-million FY 1994 appropriation for the IWS/LAN automation program.[20]

The House Committee on Appropriations asked OTA to conduct a review of the SSA's automation program and address the concerns of the

18 U.S. Congress, House Committee on Appropriations, *Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriations Act, Fiscal Year 1994,* House Report 103-156 (Washington, DC: U.S. Government Printing Office, June 24, 1993), pp. 90-91

19 U.S. Congress, Senate Committee on Appropriations, *Departments of Labor, Health and Human Services, and Labor and Re/fllpdA~Cncies Appropriations Act, Fiscal Year 1994,* Senate Report 103-143 (Washington, DC: U.S. Government Printing Office, Sept. 15, 1993), pp. 152-153. The Senate Committee on Appropriations expressed similar concerns in language accompanying FY 1993 appropriation for SSA. See U.S. Congress, Senate Committee on Appropriations, *Departments of Labor, Health and Human Services, and Labor and Related Agencies Appropriations Act, Fiscal Year 1993,* Senate Report 102-397 (Washington, DC: U.S. Government Printing Office, Sept. 10, 1992), pp. 169-170.

20 The $300 million was appropriated as "no-year" funds, meaning the funds do not have to be obligated in the year appropriated. See Social Security Administration, "Apportionment and Reapportionment Schedule: Fiscal Year 1994," OMB Form 132, Nov. 23, 1993.

committee and GAO. The committee directed SSA to defer obligation of the FY 1994 appropriations until OTA completed its review, SSA could respond to the OTA findings (as well as any continuing GAO questions), and SSA reports back to the committee.[21]

This chapter summarizes OTA's findings on each of the issues raised by the House Appropriations Committee and GAO, and then presents and discusses a range of relevant policy options. Subsequent chapters discuss in greater depth: SSA's increasing workload that drives the need for modernization; SSA's strategic and information systems planning process; SSA's plans to use IWS/LAN technology; and opportunities for electronic delivery of SSA services.

FINDINGS ON SSA's IWS/LAN TECHNOLOGY PROGRAM

OTA's key findings are presented below in the context of the concerns originally raised by GAO and reiterated by the House Committee on Appropriations in its request for the OTA review.

Documentation for SSA's Technical Solution

GAO originally found that SSA had not documented the basis for its selection of IWS/LAN technology.[22] From a narrow technical perspective, OTA concludes that SSA's planned evolution from "dumb" terminals (with only minimal local processing or storage capacity) to networked microcomputers is well within widely accepted practices of both the government and private sector.[23] Many agencies and companies have already made this transition. OTA found that SSA has adequately documented the selection of IWS/LAN.[24] (GAO has now reached a similar conclusion.)

The recommended microcomputer (using a 486 computer chip and IBM-compatible operating system) and local area network (token ring, also IBM-compatible) are proven technologies available off the shelf at competitive prices. The term intelligent workstation is actually misleading because it suggests a more powerful (and more expensive) workstation than is planned. PC/LAN would be a more descriptive term for this technology.

The shift to networked microcomputers will allow SSA employees to benefit from the word-processing, records management, integrated file access, distributed processing, and other computer applications that are difficult or impossible using dumb terminals networked to mainframe computers.[25] With microcomputers, all of these applications can be executed with user-friendly windows-type screen displays (known as graphical user interfaces). Microcomputers, when fully utilized, should help decentralize SSA's computer resources and increase its overall computer capacity and flexibility. The local area networks permit microcomputers to be linked together at the local office level, and perhaps by regions or other geographic areas, and still be connected via file

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21 U.S. Congress, House Committee on Appropriations, op. cit., footnote 18.

22 Letter from Frank W. Reilly, U.S. General Accounting Office, Mar. 30, 1993, op. cit., footnote 17.

23 The National Research Council reached a similar conclusion in prior studies. See National Research Council, Computer Science and Telecommunications Board, *Systems Modernization and/he Strategic Plans of the Social Security Administration* (Washington, DC: National Academy Press, 1990); and National Research Council, op. cit., footnote 12.

24 See ch. 4 discussion, SSA conducted numerous studies and tests resulting in dozens of papers and reports. For the primary documentation, see Social Security Administration, "The Social Security Administration Analysis of the Alternative Architectures for the Distributed Data Processing Pi lots," May 24, 199 1; "The Social Security Administration's Analysis Methodology of the Performance and Benefits from the Distributed Data Processing Pi lots," Jan. 17, 1992; "The Social Security Administration's Analysis of Costs, Benefits, and Performance from the Distributed Data Processing Pi lots," 1993 draft; and "Flexibilities and Capabilities of the Social Security Administration's IWS/LAN Architecture," December 1993.

2s The Social Security Administration has identified 13 applications and 38 other software packages currently operating at various IWS/LAN sites, and 59 tactical plans and 39 automatic data-processing plans that depend on IWS/LAN implementation.

servers and telecommunication links to SSA's mainframe computers.

SSA's selection of IBM-compatible microcomputers and LANs is a judgment call, but technically defensible. SSA operates an IBM-compatible mainframe computing system, and this real it y was weighted heavily in the technical evaluation process, especially for the token ring selected as the local area network technology. OTA reviewed whether the selection of 486 microcomputers is overkill with regard to the computing power really needed on most SSA desktops, or, on the other hand, whether the 486 microcomputer will be obsolete by the time the procurements are actually executed and deployed, necessary software written and installed, and users properly trained.

OTA believes that the 486 microcomputer is a prudent choice because it is off-the-shelf technology available at a low per-unit cost, and because software and application advances usually require more, not less, disk storage capacity and processing speed. Also, SSA has stated that the microcomputer specifications will be modified at the time of actual procurement, if warranted (e.g., if, by then, next-generation microcomputers are available off the shelf at low cost). SSA has specified a flexible microcomputer platform that will allow memory and application upgrades as needed and available.

In the course of examining the IWS/LAN plan, OTA also briefly reviewed the SSA mainframe computer operation at the National Computer Center in Baltimore, MD, and concluded that SSA has substantially upgraded its mainframe computers and peripheral equipment since the 1986 OTA report on SSA automation. The mainframes and disk storage units are the best available off-the-shelf technology. However, the ability of the computer center to remotely manage, monitor, and maintain a network of tens of thousands of IWSs and hundreds of LANs has not been established.[26] SSA needs to anticipate possible technical and staff adjustments to address network management problems that may develop as IWS/LAN testing and implementation are scaled up.

Relationship of Technical Solution to Service Delivery Strategy

GAO concluded that SSA has not completed its service delivery plan and has not linked its proposed technology strategy to specific service delivery improvements. GAO questioned SSA's plans to implement IWS/LAN without first determining the service delivery improvements that could result from IWS/LAN. GAO believes that SSA may be missing significant opportunities to use information technology to improve the quality and cost-effectiveness of service delivery. GAO further noted the absence of performance goals, schedules, and resource requirements necessary to improve service delivery .27

Before the GAO review, SSA did address service delivery in the context of the 1991 '*Agency Strategic Plan" (ASP),[28] the "Information System Plan" (ISP, first issued in 1991, and updated in 1992 and in late 1993),[29] and various tactical plans intended to implement aspects of the ASP and ISP. GAO credited SSA for improvements in agency strategic planning, but concluded that this effort fell well short of that needed to identify specific service delivery improvements.

Since the GAO review, SSA has agreed to prepare a service delivery plan and has taken some initial steps in this direction. SSA upgraded its service delivery planning to the level of the chief policy officer (who reports directly to the principal deputy commissioner), who has prepared two

26 SSA does centrally manage the current 40,000 dumb terminals, plus the IWS/LANs at pilot-test sites.

27 Frank Reilly, GAO, letter, op. cit., footnote 17, Mar. 30,1993.

28 Social Security Administration, op. cit., footnote 13.

29 Social Security Administration, *Information Systems Plan* (Baltimore, MD: September 1991, 1992, 1993).

drafts of a service delivery concept paper.[30] The drafts develop some goals and principles for service delivery. The first draft included a fairly detailed discussion of delivery alternatives and implications for reorganizing SSA. SSA's senior management concluded that this latter discussion was premature; thus, the second draft is philosophical and conceptual in nature. SSA also developed an outreach strategy for obtaining further input on strategies for service improvement,[31] although its status is uncertain given the absence of detailed service delivery scenarios and the apparent lack of consensus on which scenarios warrant serious consideration.

OTA's review of prior and current SSA planning efforts indicates that, while strategic and information system planning has improved markedly in recent years, service delivery planning is still in the very early stages. SSA appears to have made only limited progress since the 1991-92 timeframe when GAO[32] and National Research Council (NRC)[33] reports found SSA's service delivery planning to be inadequate. About 1 year ago, SSA set a goal of completing a service delivery plan by the end of 199334—a goal it was unable to meet. The limited effort on service delivery planning over the last 3 years contrasts sharply with the substantial staff and resources devoted to the planning, testing, and implementation of IWS/LAN.

SSA also has been slow to develop a human resources plan, although a draft now exists.[35] The plan provides a useful conceptual framework for developing and managing human resources, but does not address specific staffing, training, or work environment issues associated with IWS/LAN deployment or reengineering. SSA has prepared numerous tactical plans for implementing aspects of the 1991 Agency Strategic Plan, which SSA is currently updating. But it is unclear how the ASP update ties into service delivery and human resources planning; perhaps the several efforts should be fully integrated.

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30 Social Security Administration, "Improving Service Delivery at the Social Security Administration: A Conceptual Proposal," drafts dated Oct. 21, 1993, and Dec. 30, 1993.

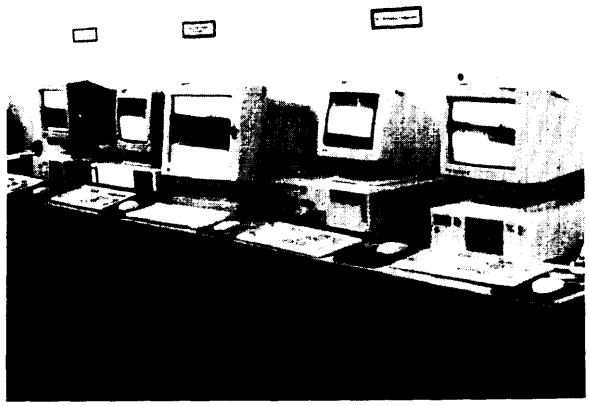
31 Social Security Administration, Memorandum, "Next Steps in Service Delivery Planning—-Action," Nov. 10, 1993.

32 U S Congress, General Accounting offic, Report to the Chairman, Senate Special committee on Aging, *SSA Computers: Long-Range Vision Needed To Guide Future Systems Modernization Efforts*, GAO/IMTEC-91-44 (Gaithersburg, MD: September 1991), p. 10, recommended that SSA "articulate a clear, consistent vision of how it intends to use information technology to do business in the future. The vision should go beyond automating current processes; instead, it should be based on a fundamental reconsideration of the agency's organization and business processes in light of opportunities offered by current technology." U.S. Congress, General Accounting Office, *Information Management and Technology Issues*, GAO/OCG-93-5TR (Gaithersburg, MD: December 1992), p. 1I, noted that '*For the most part, however, SSA has focused on automating its existing paper-driven, labor-intensive work practices in an incremental, piecemeal fashion. While resulting in some immediate benefits in improved service, this approach will not put SSA in a position to cope with the surge in beneficiaries looming on the horizon. To capture the critically needed benefits of modernization, SSA must direct its system modernization efforts toward fundamentally improving the way it does business."

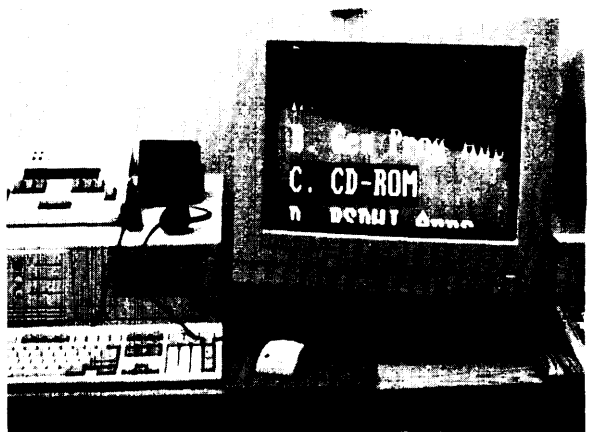
33 National Research Council, op. cit., footnote 12, p. 3, concluded that "The SSA does not have a vision for its information systems that encompasses what will be needed to support the agency's mission and operations into the next century. "'The SSA does not today have well-defined targets for levels of service to the public, nor does it convey the view that its operations are governed by such targets" (p. 27). Willis H. Ware, Chairman, Committee on Review of SSA's Systems Modernization Plan and Agency Strategic Plan, Computer and Telecommunications Board, National Research Council, Letter Report, June 30, 1992, p. 1, concluded that "'Although the SSA has made important strides in automating its processes, it still has a long way to go before the full benefits of automation can be real ized. In particular, SSA needs to develop an overall management approach that encourages active, continual improvements in quality and productivity, rather than electronically embalming current practices. "

34 See Social Security Administration, "Report to the Senate Appropriations Committee on the IWS/LAN Project," Apr. 5, 1993, pp. 2,28.

35 Social Security Administration, "Human Resources Strategy and Implementation Plan," draft, January 1994.







FRED B. WOOD

Top: *SSA's "System Zero" serves as a test bed for evaluating personal computer applications.*
Bottom left: An *SSA employee demonstrates the varied uses of personal computers that SSA hopes to implement nationwide,*
Bottom right: *SSA is testing personal computer applicatlons for employees with hearing or visual Impairments.*

Also, SSA management only recently has included meaningful customer and labor participation in planning efforts. The first round of SSA-sponsored customer focus groups took place in late 1993.[36] And SSA appears to be moving toward more productive labor-management collaboration on agency planning and other matters, spurred in part by the National Performance Review's emphasis on labor-management councils.

In the absence of a service delivery plan, SSA has been unable to link the IWS/LAN technology program to specific planned improvements measured against the service delivery objectives. SSA argues that the IWS/LAN technology should be viewed as part of an SSA information technology infrastructure that is flexible enough to support whatever objectives and alternatives ultimately result from service delivery planning, and that delivery alternatives are unlikely to be so dramatic as to disrupt the planned IWS/LAN deployment.[37] GAO continues to believe that SSA should be able

36 An OTA contractor conducted a limited series of focus groups during the same timeframe. See partners in Enterprise, Inc., "Improving Social Security Services: Focus Group Discussions in the Washington, DC, Area," contractor paper prepared for the Office of Technology Assessment, November 1993.

37 SSA has identified 59 tactical plans and 39 automated data-processing plans that depend on IWS/LAN implementation.

to make better linkages or connections between the technology and measurable improvements in service delivery, even if only as an interim step in completing the delivery plan.

OTA concludes that, while the IWS/LAN is a flexible technology and can be properly viewed as part of the SSA infrastructure for service delivery, a tighter connection needs to be made between the technology and expected service delivery improvements to make best use of IWS/LAN. OTA's review suggests, however, that strengthening and accelerating the planning effort for improving service delivery will require the allocation of more staff operating with full authority from the SSA commissioner and principal deputy commissioner. Also, the planning group needs authority for integrated strategic planning and management that cuts across all SSA offices and programs. OTA believes that a larger full-time planning staff and stronger coordination are essential. The integrated planning and management group needs to cover the strategic, operational, service delivery, technology, human resources, and facilities components that will, collectively, determine SSA's future directions and performance. The group also needs people who have strong expertise in electronic service delivery.[38]

The recently initiated SSA reengineering project may provide results helpful to both the process and substance of service delivery planning. "Reengineering" is intended to be a fundamental rethinking about how an organization, in this case SSA, carries out its mission. The objective is to identify new, radically improved ways of doing business, not just marginal improvements to current activities. SSA initiated its reengineering task force activities in mid-1993 and decided to focus initially on the disability benefit determination process-generally agreed to be the SSA service in greatest difficulty. SSA top management has thrown its full weight behind reengineering by providing seminars, teleconferences, videos, and an 18-person staff (on 6-month detail) that reports directly to SSA's commissioner.[39] The staff has already conducted over 1,000 interviews and visited SSA offices and Disability Determination Service (DDS) offices in a majority of states.[40] A draft report on disability reengineering, expected by March 31, 1994, will give a strong indication of SSA's ability to identify ways to dramatically improve service delivery and to leverage the role of information technology—including IWS/LAN—in making those improvements.

Documentation and Rationale for Planned Use of IWS/LAN

GAO concluded that SSA had not adequately evaluated and justified its proposals for widespread deployment of IWS/LAN. GAO noted that SSA did not assess a range of alternative technical solutions and deployment strategies.[41] The issue here, as framed by OTA, is not whether IWS/LAN is an appropriate evolution from dumb terminals (OTA concluded that it is, as discussed earlier), but whether SSA has adequately assessed alternative ways to deploy and use IWS/LAN alone and in concert with other information technologies.

SSA's current plan envisions the purchase of about 95,000 personal computers—82,000 for SSA offices and 13,000 for state DDS offices. About 13,000 computers were funded out of FY

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38 SSA could reengineer its top management by, for example, transforming the deputy commissioner for finance, assessment, and *management* into a deputy commissioner for strategic planning and management.

39 See outline of SSA seminar by Michael Hammer, Management Consultant, "Reengineering: From Concept to Reality," November 1993; and an SSA-produced video on '. Creating Change" in which the SSA commissioner and principal deputy commissioner discuss SSA's service delivery planning and reengineering activities.

40 See Social Security Administration, "Internal Communications Plan--Action," disability reengineering project memorandum, Nov. 9. 1993.

41 See Frank Reilly, GAO, letter, op. cit., footnote 17, Mar. 30, 1993.

1992 and FY 1993 budgets and are, or will be, installed in selected SSA offices and a few DDS offices. The remaining 82,000 are to be funded out of the proposed $1. 125-billion IWS/LAN automation investment program, placing first priority on modernizing the SSA field offices and second priority on other SSA offices and the state DDS offices.

OTA's review suggests that SSA has been approaching IWS/LAN planning primarily as an infrastructure initiative. SSA has prioritized IWS/LAN installation according to current SSA operational and service delivery needs-essentially automating marginal improvements in the status quo. SSA has placed less emphasis on identifying priority needs that, if met, would translate into more dramatic improvements in service delivery. The lack of more aggressive performance improvement objectives for IWS/LAN is understandable, given the absence of a service delivery plan (or working performance measurement program, see later discussion), but not desirable.

SSA has deferred DDS office modernization in most states, awaiting full development and pilot testing of the Modernized Disability System (MDS) that preceded the current disability reengineering project.[42] Also, prior SSA-sponsored studies have suggested that the role of automation in improving the disability process will be small in comparison to the effects of radically changing the organization and flow of disability work.[43] It remains to be seen whether SSA's disability reengineering task force will identify opportunities to accelerate improvements using information technology.

OTA's review also suggests that SSA's electronic delivery program is exploring a wide range of technologies and applications,[44] but is underfunded and missing some key information technology opportunities. As a consequence, SSA is not developing a complete understanding of how IWS/LAN technology fits into the larger context of electronic delivery. Again, this situation is understandable, given the lack of an SSA service delivery plan and because the SSA strategic and information systems plans—while well done—predate the heightened interest in, and knowledge about, electronic delivery. Also, OTA concludes that SSA is overly conservative in its assessment of the ability of current and future customers to use electronic delivery (see figures 1-1 and 1-2), and is moving too slowly on developing and testing electronic delivery options.[45] A more aggressive, innovative, creative approach is needed—one that engages the range of options and issues presented in OTA's 1993 report, *Making Government Work: Electronic Delivery of Federal Services.*[46]

OTA applied the analytical framework of electronic delivery ● 'success factors" developed in *Making Government Work*[47] to current SSA acti-

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42 Social Security Administration, "Modernized Disability System," n.d.

43 Williams, Adley & Co. and Planning Analysis Corp., "Review and Anal ysis of Office Automation Questionnaire for the State Disability Determination Services," contractor report prepared for the Social Security Administration, Information Technology Systems Review Staff, June 30, 1993.

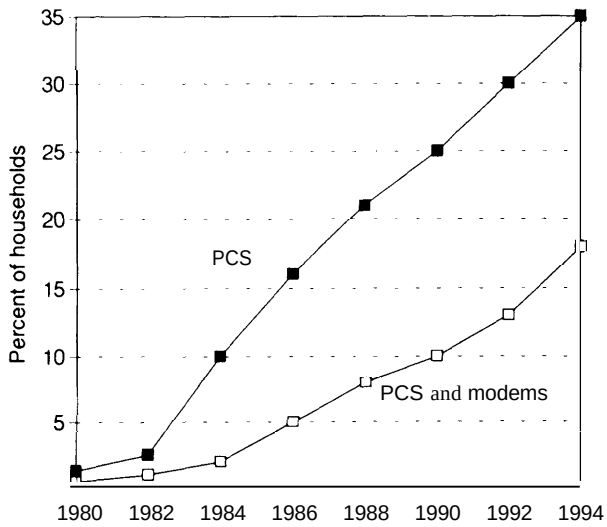
44 Including, for example, optical disk storage, 800-number expert systems, paperless records storage and processing, videoconferencing, and numerous r]~lcr(~'t~rl~pl]ter-based projects. See Social Security Administration, *Information Systems Plan*, op. cit., footnote 6.

45 See ch. 5 disc.ussl(~n. The community of persons with disabilities, for example, has found computers and computer networking to be valuable and co lst-effect ive. Also see Richard P. Adler and Mary S. Furlong, SeniorNet, "Electronic Del i very of Social Security Services," contractor paper prepared for the Office of Technology Assessment, February 1994; William A. Beasley, National Public Telecomputing Network. "The OTA NPTN Teleforum Project: Use of Telecommunications Resources by the Social Security Administration," contractor paper prepared for the office of Technology Assessment, Feb. 10, 1994; and Nancy G. Shor, National Organization of Social Security Claimants' Representatives, "SSA Service Delivery: A Presentation of Current Problems and Opportunities for Improvement," contractor paper prepared for the Office of Technology Assessment, Jan. 13, 1994.

46 11 S Congress Office of Technology Assessment, op. cit., footnote 15.

47 Ibid.

FIGURE 1-1: Percent of U.S. Households With PCs and Modems, by Year 1980-1994



SOURCE. Institute for the Future, cited in Richard P Adler and Mary S Furlong, "Electronic Delivery of Social Security Services, " contractor paper prepared for the Off Ice of Technology Assessment, February 1994, p 4

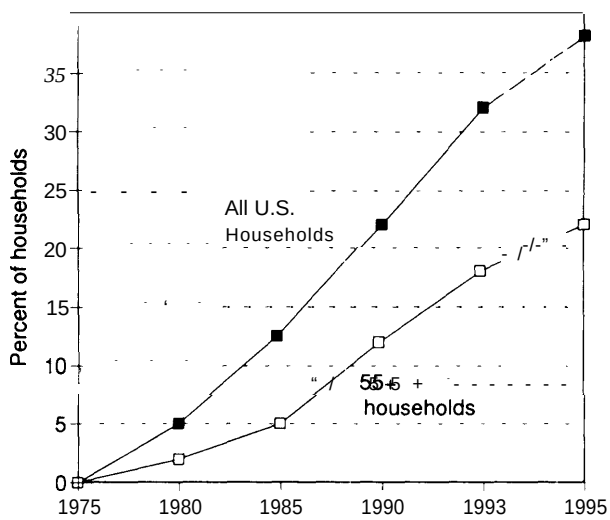
vities. The results suggest that SSA could justifiably give higher priority and increased funding to:

- grassroots involvement of SSA's customers in electronic delivery—including local advisory groups, focus groups, pilot studies, and user evaluations;
- development and involvement of the community infrastructure (e.g., libraries, schools, and senior citizen centers) directly or as intermediaries in electronic delivery of SSA services;
- encouraging innovation in electronic delivery of SSA services through budget set-asides, staff development, performance awards, and other incentives;
- creating and participating in electronic directories to SSA services-as part of larger government-wide and private sector directories; and
- strategic partnering in SSA service delivery—including collaboration with other federal and state agencies responsible for delivery of social and other (e.g., employment and medical) services.

OTA identified several specific electronic delivery initiatives that warrant intensified SSA attention: 1) full-scale pilot testing of integrated electronic records and automated disability determination; 2) multiprogram electronic benefits transfer (using magnetic stripe, smart, and hybrid card technology); 3) electronic interagency eligibility determination; 4) electronic bulletin boards and computer networks; and 5) "one-stop shopping" for electronic services.

SSA has intensively pursued and implemented the use of toll-free 800 telephone numbers for service delivery, electronic data interchange for filing of earnings reports by businesses, and direct electronic deposit of benefit payments. SSA eventually intends to fully test integrated electronic records and automated disability determination, but needs a more aggressive, innovative pilot test strategy—including abetter developed evaluation component. SSA tends to underfund true pilot tests in favor of what are really pre-operational tests. SSA is underinvesting in exploratory, devel-

FIGURE 1-2: All U.S. Households and Households Headed by Ages 55+ With PCs, by Year 1975-1993



SOURCE SeniorNet, cited in Richard P Adler and Mary S Furlong, "Electronic Delivery of Social Security Services," contractor paper prepared for the Off Ice of Technology Assessment, February 1994, p 12

opmental pilot activities. SSA is participating in electronic benefits transfer (EBT) and electronic kiosk projects, but at minimal levels,[48] and its limited electronic bulletin board and computer network projects do not as yet involve SSA recipients.

Again, SSA's Agency Strategic Plan and followup tactical and implementation plans recognize many of the technical areas of opportunity mentioned in OTA's report *Making Government Work*. However, electronic delivery oriented toward end users is given low priority and minimal funding, and there is no ● 'mid-level" service delivery plan that links high-level strategic goals and directions with specific "low-level" tactical pilot tests and implementation plans.

SSA has argued that the full, on-schedule deployment of IWS/LAN technology is imperative to: 1) provide an infrastructure that will stimulate and support electronic delivery and reengineering initiatives; 2) avoid problems and expenditures that will result from breakdowns of the existing dumb terminals;[49] and 3) minimize the delays that inevitably accompany large-scale federal information technology procurements. GAO and others contend that deploying the IWS/LAN technology before electronic delivery and reengineering opportunities are understood means that the technology will be underutilized, perhaps mislocated, and possibly even obsolete before full implementation.

GAO believes that SSA has not adequately justified either the total number of terminals or their deployment. GAO also notes that judicious use of the many dumb terminals with useful life remaining could allow for a more flexible IWS/LAN deployment than proposed. GAO is concerned that, in the absence of service delivery plans and goals, IWS/LAN technology could be deployed in offices that might be reorganized. The technology might then need to be reconfigured or physically moved, depending on the results of ongoing reengineering and service delivery planning efforts. This could, in turn, result in inefficient or wasteful use of funds spent on equipment, site preparation, wiring, and furniture.

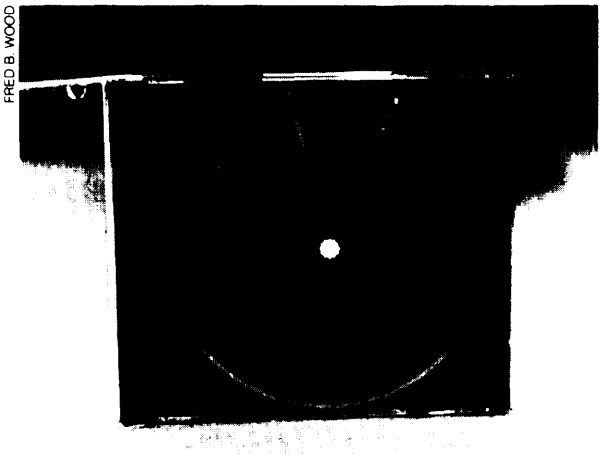
In balancing these considerations, OTA believes that resources could be reprioritized and reallocated to significantly increase—not decrease—the chances that the IWS/LAN technology program will succeed. IWS/LAN is a logical successor to the dumb terminals and is arguably a key part of SSA's future infrastructure. But SSA has not persuasively documented the urgency or need for the full complement of microcomputers (13,000 already procured or in the pipeline; 41,000 in a phase 1 buy with FY 1994 funds; another 41,000 in a phase 2 buy with FY 1995-98 funds). OTA concludes that SSA's current IWS/LAN automation investment program can be improved. A range of modifications warrant serious consideration (see later policy discussion).

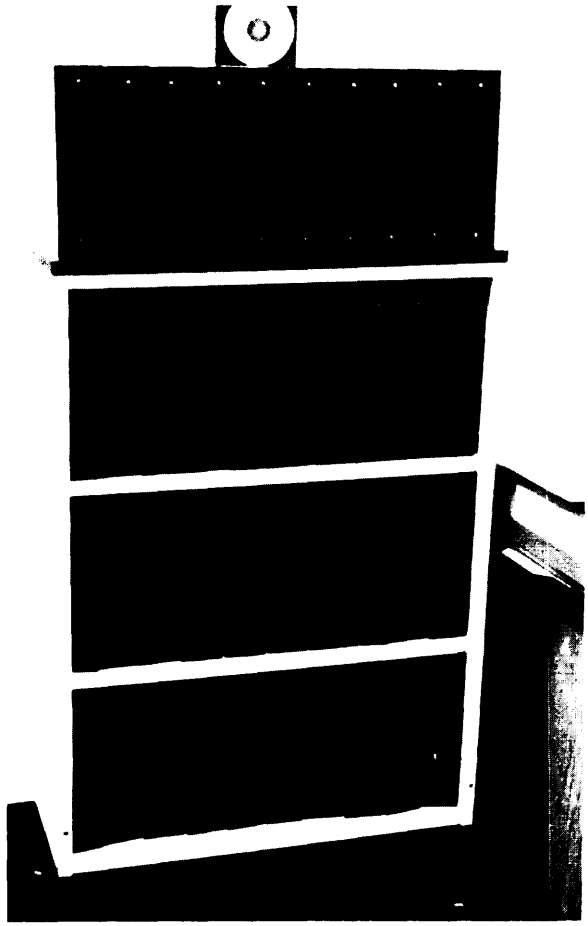
Methodology for Measuring and Tracking Results of IWS/LAN

GAO concluded that SSA had not developed a framework for tracking the costs and benefits of automation—including IWS/LAN—and for comparing the impacts of automation against specific performance goals. As a consequence, GAO said, establishing accountability of SSA's automation program will be difficult or impossible. GAO noted that other agencies, such as the Inter-

[48] See for example, Social Security Administration, "Visual Communications Plan," April 1993, for discussion of kiosk projects. See generally, Social Security Administration, 1993, op. cit., footnote 6.

[49] Assuming a 5-year life for the dumb terminals, SSA estimates that, in FY 1995, 26 percent of the dumb terminals will be 3 years beyond expected life, 34 percent will be 2 years beyond, and 9 percent will be 1 year beyond.





Left: The POMS compact disc includes material that in paper form would require an entire bookcase, Right: *SSA has placed its entire set of regulations on one compact optical disc, known as the "Program Operations Manual System" or POMS disc, that is accessible via personal computer,*

nal Revenue Service, are implementing specific accountability programs to measure the costs and benefits associated with major automation initiatives.[50]

OTA's review suggests that SSA's limited ability to estimate the costs, benefits, and performance impacts of IWS/LAN is primarily due not to the lack of methodology for assessing such impacts, but to deficient use of existing methodology and to inadequate planning for service delivery. SSA has a comprehensive planning and budgeting system that requires a cost-benefit analysis for all tactical plan initiatives where implementation is proposed (and updated cost-benefit analyses for ongoing projects if benefits or costs change sign ificantly).[51] SSA does not require a cost-benefit analysis for demonstrations, prototypes, and studies. SSA issued comprehensive cost-benefit analysis instructions in November 1993.[52] SSA requires that all tactical plan initiatives include: 1) a schedule of deliverables; 2) an analysis of the anticipated impact on SSA work processes; and 3) a description, quantified where possible, of likely effects on the service delivery goals and objectives stated in the Agency Strategic Plan. SSA has identified 7 broad goals and 64 more specific objectives for improving service delivery that flow from the strategic plan:[53]

1. issue Social Security numbers properly *(4* objectives);
2. maintain earnings records properly (6 objec - tives);
3. pay benefits correctly (12 objectives);
4. pay benefits when due (13 objectives);
5. provide prompt, courteous service (16 objectives);
6. inform the public of its rights and responsibilities (8 objectives); and
7. ensure integrity of payments and records (5 objectives).

Even with an acceptable method, SSA has difficulty developing meaningful cost, benefit, and performance impacts of infrastructure technologies like IWS/LAN because these technologies work in concert with other technologies (along with current, modified, or even reengineered work processes) to affect service delivery. A service delivery plan would seem to be essential as part of the framework for understanding and estimating the impacts of IWS/LAN. Even if the Agency Strategic Plan and the individual tactical plans continued to be substantially valid, a service delivery plan might well suggest significant changes in priority and funding for testing and implementing the tactical plans—based on new cost, benefit, and performance estimates.

For all these reasons, SSA did not, and perhaps could not, conduct a full cost-benefit analysis of IWS/LAN. SSA based its analysis on comparisons of the time required to perform certain functions before and after IWS/LAN installation in 10 pilot-test offices. SSA extrapolated results from a few hundred terminals at the 10 test offices to a projected 41,000 terminals at more than 1,300 SSA offices. SSA estimated a cost-benefit ratio of 2.5 to 1 (benefits to costs), suggesting that IWS/LAN is a cost-effective replacement for the dumb terminals.[54] The SSA results have limited appli-

[50] Frank Reilly, GAO, letter, op. cit., footnote 17, Mar. 30, 1993.

[51] social Security Administration, "Planning & Budgeting System: Schedule and Instructions for Fiscal Year 1996 Cycle," January 1994.

[52] Social Security Administration, "Agency-Level Comprehensive Cost Benefit Analysis Instructions," November 1993.

[53] Social Security Administration, "Agency Strategic Plan," op. cit., footnote 13, pp. 51 -55; Social Security Administration, "*office* of Technology Assessment Orientation Briefing Materials," Aug. 10, 199.3.

[54] Social Security Administration, "Report to the Senate Appropriations Committee on the IWS/LAN Project," Apr. 5, 1993. Note, however, that SSA reduced the IWS/LAN cost by the amounts needed to purchase ergonomic furniture (that would be needed anyway, SSA argues) and to replace and operate dumb terminals (if I WS/LANs were not installed). Without the ergonomic furniture {) ffset, the cost-benefit ratio would have been 2 to 1; and without both offsets, the cost-benefit ratio would have been I to 1.

cability for understanding major opportunities to improve service delivery because:

1. SSA assumed no significant changes in work processes;
2. most of the projected work-year savings were marginal in nature—more than half due to SSA employees not having to walk from their desks or wait in line to use a shared personal computer;
3. the personal computers in the pilot offices were used primarily in terminal emulation mode—-meaning most functions were dependent on the mainframe computers as they are with dumb terminals; and
4. SSA assumed no significant additional requirements for training and staffing due to IWS/LAN (SSA proposes to monitor and maintain the IWS/LAN networks from the National Computer Center in Baltimore, MD).

OTA believes that IWS/LAN, if properly deployed, could contribute to major improvements in service delivery. But SSA's currently available cost-benefit analysis provides little help in determining the optimal IWS/LAN deployment strategy or in understanding the potential of IWS/LAN to improve service delivery or reinvent SSA work processes. The absence of a service delivery plan also impairs SSA's ability to develop cost estimates of long-term automation, beyond IWS/LAN. GAO estimated total costs in the $5-billion to $ 10-billion range over a 5- to 7-year period.[55] SSA disputes these estimates, noting that they include significant costs for normal upgrades of mainframe computers and other technologies that would be needed regardless of the modernization and service delivery strategies ulti - mately adopted. SSA is developing its own estimates (not provided to OTA). But whatever the numbers, GAO's point is that the $1.125 billion is not a total cost for SSA modernization. Also, OTA believes that the $3 13-million reengineering component[56] of the $1.125 billion is simply a placeholder, and cannot be credibly detailed until completion of reengineering and service delivery plans.

Another GAO concern is tying actual performance of IWS/LAN (and other information technologies) to projected service delivery improvements. GAO would like to see greater accountability for results. An SSA contractor is currently developing a methodology for improving accountability y of automation projects .57 The contractor is reviewing methodologies used by other agencies such as the Internal Revenue Service. Implementation of an accountability methodology will depend, however, on establishing realistic and specific performance improvement objectives and on credibly linking these objectives to modernization activities—again, difficult to do in the absence of reengineering and service delivery plans.[58]

Relationship of IWS/LAN to the State Disability Determination Process

GAO concluded that SSA has not considered a range of alternatives on how automation could improve the disability determination process, in which states have major responsibilities. GAO noted that SSA appears to be imposing its technical solution on the states without adequate consideration of the needs of states or the implications for their role in delivering SSA programs.

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55 See US Congress, General Accounting Office, Op. cit., footnote 2. An SSA contractor estimated costs in the $5-billion to $10-billion range over a 12-year period, but SSA does not have confidence in this work. See George M. Kolenaty and Charles F. Swett, Birch & Davis Associates, Inc., "Preliminary Cost Estimates for the Social Security Agency's Agency Strategic Plan," contractor paper prepared for the Social Security Administration, July 22, 1991.

56 Decreased to $237 million in SSA's revised budget estimates.

57 See Brown & Co., "Methodology Outline: SSA Strategic Planning Initiative—Project Tracking and Accountability," contractor project conducted for SSA, Nov. 2, 1993, draft.

58 Also see U.S. Congress, General Accounting Office, op. cit., footnote 2

The initial and continuing determination of eligibility for disability benefits is acknowledged as the most troubled SSA service. At present, applicants apply for disability at their local SSA field office, which forwards the paperwork to the nearest state Disability Determination Service (DDS) office. State DDS offices do the actual evaluation, obtain necessary medical evidence and examinations, make the initial decisions on eligibility, and conduct continuing reviews of eligibility. State DDS decisions may be appealed to SSA's Office of Hearings and Appeals for consideration by an administrative law judge. SSA's federal DDS office provides backup to the states as needed, and serves as a model office to test new technologies and work processes.

State DDS offices are fully funded by SSA, but staff are state, rather than federal, employees and operate pursuant to numerous state, as well as federal, regulations and procedures. The SSA's IWS/LAN technology program includes modernization of the state DDS offices, whether as part of the Modernized Disability System or alternative approaches developed by SSA's disability reengineering task force. Experts differ on the role of technology in improving disability processing. SSA's disability reengineering task force is studying how to best leverage the IWS/LAN and other information technologies.

SSA has funded the modernization of about one-fourth of the state DDS terminals from the FY 1992-93 budget—about 4,000 terminals and about 70 LANs principally in eight states (Alabama, Alaska, California, Illinois, Michigan, Oregon, Pennsylvania, and Virginia).[59] Although procured separately from the formal IWS/LAN program, the terminals are consistent with the IWS/LAN concept but may vary slightly in terms of technical specifications and configuration, depending on the state. The remaining 12,000 terminals and 155 LANs for state DDS offices are included in the SSA's IWS/LAN technology program.[60] SSA is proposing to accelerate state DDS modernization by providing additional funds from the SSA's $1.1-billion annual budget for state DDS operations.[61]

OTA's review, based in part on input from the National Council of Disability Determination Directors and selected state DDS and information management officials, indicates strong overall support among the states for modernization of state DDS offices, but considerable concern about federal-state relationships.[62] One major concern centers around SSA's perceived inflexibility in attempting to impose its IWS/LAN technical solution on state DDS offices. States vary widely in their level and type of automation. State DDS officials would like to see a more flexible-and perhaps a more functional, rather than hardware/software-specific-modernization approach that can more easily accommodate individual state information technology plans and procurement procedures. Some state officials feel SSA is acting as if the state DDS offices were federal, rather than state, offices. Another concern is perceived redundancy and inconsistency in the SSA approval process where multiple signoffs are required and one branch or level of SSA may contradict another. A further concern is SSA's inadequate attention to initial and continuing training and maintenance requirements for IWS/LANs installed in state DDS offices.

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59 Social Security Administration, "DDS System Life Cycle to IWS/LAN—Status of the FY93 Funding Cycle," Dec. 2, 1993.

60 Ibid.

61 This effort could focus on the 10 states that collectively account for over half of the total DDS workload—California, New York, Texas, Florida, Illinois, Ohio, Michigan, Pennsylvania, Georgia, and Louisiana. Also see Social Security Administration, "Draft SSA Modernized Disability System Implementation Plan and Coordination with IWS 'LAN Installation," Oct. 19, 1993.

62 See statement of Stan Kress on behalf of the National Council of Disability Determination Directors before a hearing of the House Committee on Ways and Means, Subcommittee on Social Security, Oct. 28, 1993. Also see Charles Jones, President, National Council of Disability Determination Directors, letter to OTA, Jan. 13, 1994.

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SSA is participating in the development and pilot testing of electronic kiosks for delivering selected services Early prototypes are limited to dissemination of basic informatlon, later applications may include transactional services,

Some tension and disagreements between state and SSA officials are inevitable whenever a federal] y funded and monitored state procurement is involved. SSA is trying to assure itself that state DDS offices are pursuing cost-effective, compatible, and technically sound modernization. SSA is showing some flexibility regarding both technical solutions and procurement procedures, but is insisting, understandably, that state DDS proposals be cost competitive and interoperable with the evolving SSA-wide IWS/LAN system. Continuing differences in federal and state perspectives suggest that a joint SSA-state review is in order to attempt to further streamline the process and to make best use of available funds.

A joint SSA-state review team might also reconsider SSA's priorities for IWS/LAN installation in state DDS offices. The logic of the current deployment plan is not convincing. SSA needs to determine, in collaboration with the states, what deployment plan will be most highly leveraged in improving disability processing as soon as possible *and* will be compatible with the Modernized Disability System (MDS) or reengineered disability process when implemented. A joint SSA-state team could review SSA's disability reengineering report (when available) regarding implications for IWS/LAN deployment. SSA also needs to assess relative priorities between state DDS office modernization and IWS/LAN installation at SSA offices. A further acceleration of state deployment might make a significant difference (SSA appears to be moving in this direction).

MDS also highlights what OTA believes to be confusion at SSA over the distinction between pilot testing and pre-operational testing. SSA's current schedule calls for the first full state MDS pilot test to begin in June 1995 in Northern Virginia and expand to the rest of Virginia in January 1996; pilot testing would be expanded to four other states in July 1996. These pilot tests are actually part of MDS implementation, and are more accurately described as pre-operational, not pilot, tests. One reason for the delay is to allow time for development of the software to run MDS on an operational basis. A true pilot test would, for example, attempt to model the desired MDS functionality in one or a few locations using software/database adaptations and simulations. SSA would benefit from true pilot tests in MDS and other areas of SSA modernization and electronic service delivery.

Some state DDS officials expressed concern that SSA did not seem sufficiently aware of broader state plans and initiatives for electronic service delivery, such as electronic kiosks, electronic benefits transfer, electronic bulletin boards, and computer networks. SSA's current electronic delivery program gives minimal attention to related state activities. As a consequence, opportunities for synergy and partnering between MDS and other electronic delivery initiatives may be missed.

POLICY OPTIONS FOR IMPLEMENTING THE IWS/LAN TECHNOLOGY PROGRAM

The policy options relevant to this OTA review involve the timing, levels. allocations, and conditions of funding for SSA's current automation program and, perhaps, for limited aspects of SSA's general management and operations. The FY 1994 House Committee on Appropriations report language already requires SSA to respond to any OTA and GAO concerns and report back to the House Committee on Appropriations at least 30 days before obligation of FY 1994 automation funds ($300 million).[63] If it wished, Congress could ask that SSA meet additional conditions before obligation of the FY 1994 appropriation. Congress could reflect priorities for reengineering and service delivery planning and implementation in language that accompanies the appropriations for FY 1995 (and subsequent years).

This OTA review is limited to consideration of SSA's automation investment fund, specifically the IWS/LAN program, and does not include a broad-scale consideration of SSA's overall information technology programs, the financial health of various SSA trust funds, or proposals for major regulatory or institutional change (e.g., converting SSA to an independent agency or statutory revisions to SSA's charter). OTA notes that frequent changes in SSA's top management make coherent and sustained planning difficult.

Options for Obligation of Fiscal Year 1994 Appropriation

Defer the IWS/LAN Procurement

Congress could request SSA to holdup the IWS/LAN procurement process until much later in FY 1994 or indefinitely (or, theoretically, could ask SSA to reprogram these funds for other purposes).[64]

A lengthy deferral or reprogramming would seem reasonable only if the IWS/LAN technical solution was seriously flawed and/or the SSA organizational structure was so uncertain that no prudent procurements could be made. OTA believes that neither of these conditions applies.

A lengthy deferral could, on the other hand, compromise an orderly procurement process, delay the realization of benefits of IWS/LAN technology, slow the SSA modernization initiative, and possibly incur some additional costs for interim replacement of dumb terminals.

Proceed as Planned With the IWS/LAN Procurement

Congress could allow SSA to proceed with the IWS/LAN procurement as planned. This option would apply if Congress judges that the IWS/LAN technical solution and deployment plan are sound, and that the SSA reengineering/service delivery planning is well balanced and unlikely to result in changes that might significantly affect the IWS/LAN procurement.

OTA concludes that, while the IWS/LAN technical solution is sound, some adjustments in procurement and deployment plans are likely to be needed. OTA also concludes that the service delivery planning needs to be strengthened, and that results of the disability reengineering project (scheduled to be available March 31, 1994) could affect the IWS/LAN procurement.

Proceeding as planned without further conditions or modifications presumably would expedite the procurement process and obligation of FY 1994 funds, and perhaps somewhat accelerate the realization of IWS/LAN benefits. On the other

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63 This is a so-called "no-year" appropriation, meaning that SSA need not obligate the funds in FY 1994. The Senate appropriations report likewise requires SSA to report back to the Senate Committee on Appropriations on IWS 'LAN concerns at least 30 days before obligation of FY 1994 automation funds, See (J. S. Congress, House Committee on Appropriations, op. cit., footnote 18; U.S. Congress, Senate Committee on Appropriations, Senate Report 103-143, op. cit., footnote 19.

64 SSA expects to actually obligate the FY 1994 IWS/LAN funds in FY 1995, since obligation occurs not when the request for proposals is issued, but when a contract is awarded.

hand, this approach would increase the likelihood of a mismatch between the IWS/LAN procurement and reengineering or service delivery priorities, and could result in less than optimal use of FY 1994 funds.

SSA could proceed as planned and issue the request for proposals on IWS/LAN, with the understanding that the final IWS/LAN procurement package and later deployment would be modified, to the extent needed, based on reengineering and service delivery planning results. The concern is that SSA has not satisfactorily responded to prior GAO and congressional committee requests for service delivery plans and more comprehensive IWS/LAN justifications. SSA's credibility on this score is low.

Proceed With a Modified IWS/LAN Procurement

Congress could request that SSA proceed with a modified IWS/LAN procurement, incorporating the results of interim reengineering and service delivery planning, this OTA review, and GAO's continuing evaluation. SSA could both reprogram funds (e.g., from IWS/LAN and ergonomic furniture to reengineering) and prioritize funds within current allocations (e.g., on locations for IWS/LAN installation).

OTA believes that proceeding with prudent modifications to the IWS/LAN procurement need not significantly slow the procurement process or the realization of IWS/LAN benefits. OTA also believes that this option could improve the planning process for reengineering and service delivery. It could also help assure that IWS/LAN technology procurement is optimized and that greater benefits accrue from IWS/LAN than might otherwise be realized.

OTA concludes that SSA would achieve the best results through a combination of modifications including reprogramming and prioritizing of allocated funds. SSA could reprogram a percentage of IWS/LAN (and related ergonomic furniture/site preparation) funds to reengineering and implementation of the Agency Strategic Plan—including service delivery planning and testing. Even 5 percent ($ 15 million) would go a long way toward providing a better balance within the overall SSA automation initiative. (Note: SSA also could reprogram a fractional percentage of its operating budget to free up funds for service delivery initiatives.)

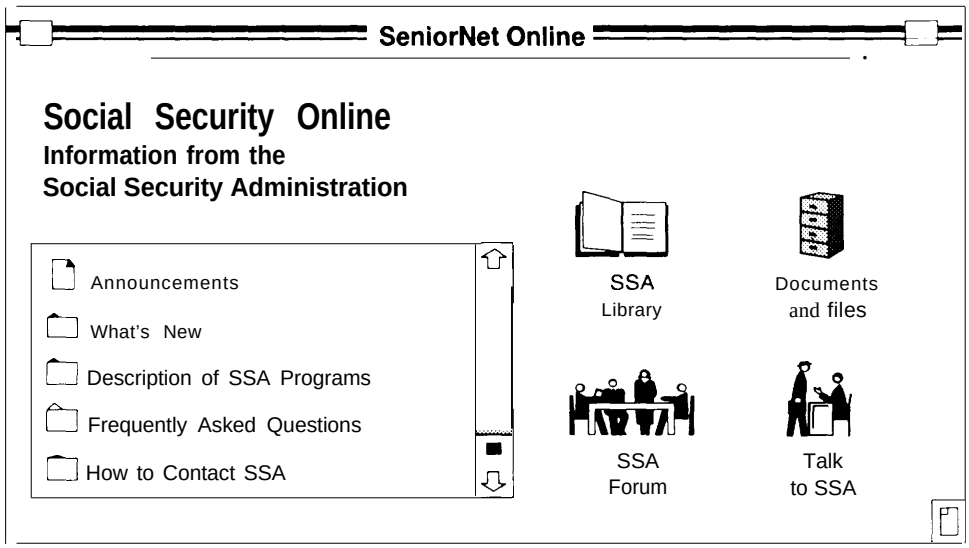
Possible uses for reprogrammed funds include:

1. additional staffing and support for the activities of the reengineering and service delivery teams;
2. implementation of the electronic delivery success factors identified by OTA (e.g., grassroots involvement and community infrastructure development);
3. design and implementation of a new or modified series of pilot tests (e.g., integrated electronic records, automated disability processing, electronic benefits transfer, and computer network services), including testing of ideas emerging from reengineering studies;
4. design and implementation of service delivery performance tests;
5. intensified participation in government-wide electronic delivery pilots and projects; and
6. review and streamlining of state disability automation support.

SSA also could prioritize the FY 1994 IWS/LAN procurement to cover offices and locations that offer the greatest near-term leverage for service improvement, and are most likely to remain stable under a range of reengineering and reorganization scenarios. SSA could, for example, further accelerate the IWS/LAN procurement for some state DDS offices; this, in turn, might affect technical specifications, especially if SSA were to offer more flexibility in meeting state needs. Also, SSA would need to be assured that state requirements for IWS/LAN are consistent with, or at least would not markedly change as a result of, the disability reengineering project.

Early milestones that would increase OTA's confidence in SSA's ability to fully utilize the IWS/LAN technology and significantly improve service delivery include the SSA: satisfactorily completing the disability reengineering project

FIGURE 1–3: Illustrative Personal Computer Menu for a Social Security Online Information Service



SOURCE Richard P Adler and Mary S Furlong, "Electronic Delivery of Social Security Services, " contractor paper prepared for the Off Ice of Technology Assessment, February 1994, p 19

(draft report due March 31, 1994); strengthening its service delivery planning process; improving the balance and increasing the funding for SSA's portfolio of electronic delivery projects (see figures 1-3 and 1-4); and initiating an SSA-state review of the disability modernization program.

Options for FY 1995 Appropriation

Provide Zero Funding for IWS/LAN in FY 1995

Congress could defer appropriation of further funds for the IWS/LAN program. Zero funding for IWS/LAN in FY 1995 would logically apply if the IWS/LAN technical solution was highly uncertain, and SSA's progress on reengineering and service delivery planning was judged unsatisfactory. Assuming funds were otherwise available, zero funding would signal low confidence in SSA's modernization initiative.

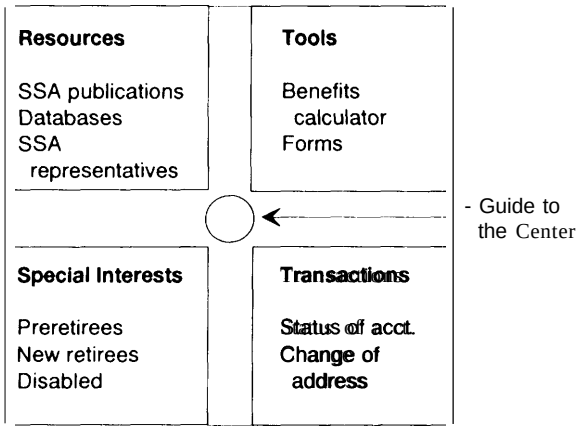
Zero funding for FY 1995 would allow SSA more time to develop reengineering and service delivery plans. It would, however, significantly delay IWS/LAN procurement and installation, and any benefits that might result, and would run the risk of seriously disrupting SSA's modernization.

OTA is modestly optimistic that SSA's planning efforts for reengineering and service delivery will bear fruit, especially if revised and strengthened in accordance with the results of this OTA review.

Provide Requested FY 1995 Funding With No Strings Attached

Congress could appropriate only the $100 million originally requested for FY 1995 or the $130 million SSA intends to request (to make up for the $30 million shortfall in the FY 1994 appropriation) without any conditions or modifications. This option would apply if Congress concludes that the IWS/LAN technical solution is sound, SSA's reengineering/service delivery planning is proceeding satisfactorily, and the requested FY 1995 funding level is adequate.

FIGURE 1–4: Model of a Next–Generation Online Social Security Service Center



SOURCE Richard P Adler and Mary S Furlong, "Electronic Delivery of Social Security Services," contractor paper prepared for the Off Ice of Technology Assessment, February 1994, p 22

This option would allow SSA to continue with the IWS/LAN procurement, but would require SSA to go through separate appropriations requests and justifications for subsequent fiscal years. This would permit additional congressional oversight and opportunities for guidance, but would somewhat complicate SSA's planning and increase the level of uncertainty. OTA believes that SSA maybe able to justify the $100 million or $130 million for FY 1995, contingent on continuing improvements in SSA's service delivery planning, among other areas. Just as OTA's review suggests the need for modifications to SSA's planned use of FY 1994 funds, some combination of conditions and modifications for FY 1995 funding should be helpful.

Provide FY 1995 or 1995-96 Funding With Strings Attached

Congress could appropriate funds with conditions and modifications. This option could include appropriation of funding levels covering 1 or 2 additional years of the SSA budget plan, reprogramming of funds (e.g., from IWS/LAN and ergonomic furniture to reengineering and electronic service delivery), prioritizing within current planned allocations (e.g., on locations for IWS/LAN installation), and establishing benchmarks for SSA progress on reengineering and service delivery improvement.

Appropriating FY 1995 (and perhaps FY 1996) funds with conditions and modifications would allow SSA to continue generally on schedule, but with added incentives to assure best use of available monies. This option should help keep the SSA program on track, while permitting more effective congressional oversight and holding SSA more accountable for performance. Benchmarks **or** milestones could be established as a basis for determining appropriations in subsequent years.

Possible conditions and modifications for SSA's obligation of FY 1995 and FY 1996 appropriations include:

FY 1995

- continued commitment to staff and resources for service delivery planning;
- completion of service delivery plan that addresses the findings of OTA's *Making Government Work*[65] (including success factors for electronic delivery) and GAO's general management review of SSA;[66]
- startup of intensified electronic delivery pilot projects that include opportunities identified by OTA;
- accelerated completion of full-scale pilot testing (as distinguished from pre-operational testing) of IWS/LAN, MDS, and disability reengineering;
- completion of federal-state review of disability automation strategy and priorities;
- completion and initial pilot testing of performance measurement methodology;

65 U.S. Congress, Office of Technology Assessment, op. cit., footnote 15.

66 U.S. Congress, General Accounting Office, op. cit., footnote 2.

- intensified commitment to grassroots involvement and community infrastructure development for SSA service delivery; and
- initiation of followup reengineering study of other (nondisability) service areas.

FY 1996

- achievement of specified service delivery improvements based on use of IWS/LAN and other information technologies;
- implementation of reengineered disability process in selected states;
- implementation of selected electronic delivery improvements;
- completion of second-generation plans for service delivery and reengineering;
- continued commitment to grassroots involvement and community infrastructure development; and
- continued electronic delivery pilot-testing with emphasis on strategic partnering opportunities.

Congress could appropriate only the FY 1995 funds ($100 million or $130 million), but make clear that a strong SSA performance in meeting FY 1995 conditions would favorably influence consideration of a multiyear appropriation in FY 1996 (e.g., for FY 1996-98). Or Congress could make a 2-year appropriation in FY 1995 (for FY 1995-96), but make obligation of the FY 1996 portion ($285 million or $255 million) contingent on satisfactory compliance with conditions placed on fiscal year 1996 as well as FY 1995 funding. OTA's estimation of the merits of a 2-year versus l-year appropriation depends significantly on SSA's ability to meet early milestones for use of the FY 1994 appropriation (see prior discussion). Appropriations beyond FY 1996 would not appear to be prudent at this time (the FY 1995 budget cycle), in OTA's judgment, given the lack of clarity and documentation for use of the out-year funds.

Provide Full Multiyear Funding

Congress could appropriate $825 million ($1. 125 billion less $300 million already appropriated for FY 1994) in no-year funds (i.e., funds that could be used at SSA's discretion during FY 1995-98). This option would warrant consideration if the IWS/LAN technical solution is sound, confidence in SSA's reengineering and service delivery is very high, and funds permit appropriating the rest of the 5-year request in no-year money.

This option would give SSA maximum flexibility in allocation and obligation of funds, send a strong signal of support for SSA's modernization, and eliminate the need for annual appropriations justifications and the uncertainties of future funding actions. Full multiyear funding, especially with no strings attached (and probably even with conditions), would exceed OTA's level of confidence, and would make it more difficult for Congress to set direction or priorities and encourage improvements that OTA believes are needed. Also, SSA has not adequately documented its need for the out-year IWS/LAN procurements. And about one-third of the FY 1996-98 funds is for out-year activities related to reengineering and implementation of the strategic plan that are not, and cannot be, credibly specified at this time.

Attach Conditions to SSA Operating Funds

Congress could appropriate SSA operating funds with conditions and modifications relevant to reengineering and service delivery. The 5-year, $1 .125 -billion SSA automation investment program is separate and apart from the annual SSA operating budget that totals about $5 billion (of which about $250 million funds SSA's annual information technology budget[67]). Funds could be reprogrammed or prioritized within SSA's operating budget to cover reengineering/service delivery priorities, and/or to strengthen SSA's strategic

67 SSA's personnel costs associated with information technology total approximately another $150 million.

management that could be a key to successful reengineering.

This option could permit full funding of IWS/LAN in FY 1995, for example, with additional reengineering/service delivery funding provided or supplemented from operating budgets. Ultimately, the reengineered SSA service delivery, when fully operational, presumably will be funded in large part from the operating budget. The operating budget could be tapped sooner and more aggressive y to fund reengineering and service delivery priorities, which would complement or substitute for funds included in the current automation investment plan.

This option also could provide a greater incentive to SSA to strengthen its strategic management team. This would improve the integration of agency planning for service delivery, information systems, human resources, and facilities across al1 SSA operational components. OTA's review (as did GAO's[68]) concluded that a strengthened strategic management team is necessary and probably essential to assure that SSA meets whatever conditions Congress may place on annual appropriations.

68 U.S. General Accounting office, op. Cit., footnote 2.

The Challenges of SSA's Growing Workload 2

The Social Security Administration, in many respects, is the nation largest government service agency. More than 45 million people receive almost $350 billion each year in SSA benefit payments.[1] This represents 24 percent of all federal expenditures and over 6 percent of the gross domestic product. SSA is a key component of the Department of Health and Human Services (HHS) and accounts for more than half of the department's staff and 56 percent of its budget. As the U.S. population grows and its average age increases, SSA projects that its workload will continue to grow.

Information technology is one of the primary tools SSA has used to ensure that it continues to provide its legislatively mandated services to its customers. Because of growing workloads and declining staff levels, the agency believes that information technology will play an even greater role in the future. To provide a basis for evaluating SSA's information technology planning, this chapter describes its programs and the challenges it faces.



SOCIAL SECURITY ADMINISTRATION PROGRAMS

The Social Security Administration administers several important programs that currently provide benefits to more than one in seven Americans. The three main programs are the Old Age and Survivors Insurance (OASI) Program, the Disability Insurance (DI) Program, and the Supplemental Security Income (SSI) Program. A beneficiary may receive benefits from more than one program—for example, a disabled worker may be eligible for both

[1]Social Security Administration, "Folder I: Introduction and Overview of SSA," 1993, p. 2.

the Disability Insurance and Supplemental Security Income Programs.

Old Age and Survivors Insurance

The retirement insurance program is the largest SSA program. Old Age and Survivors Insurance is a national program of contributory social insurance under which employees and employers pay contributions into a trust fund. OASI then pays monthly benefits when the worker retires: each year, about 3 million newly retired workers apply for benefits. In 1993, SSA paid approximately $270 billion in benefits to 36.7 million individuals.[2] More than 90 percent of all Americans over the age of 65 receive Social Security benefits.[3]

Computers in the National Computer Center at SSA headquarters in Baltimore, MD, play an important role in administering the OASI program. Using modern storage technologies, SSA maintains earnings records for 125 million workers.[4] Because monthly retirement benefits are determined by the amount of an individual contributions to the trust fund, the agency is required to keep track of each worker's earnings history. Every year, SSA processes about 220 million wage reports from employers detailing workers' contributions.[5] In the past, these reports were received on paper, but now the majority are received in electronic form.

Workers who have reached the age of 62 are eligible to receive retirement benefits. Claims for benefits are filed atone of the agency's 1,300 field offices located throughout the United States, or via the agency's toll-free 800 telephone number. Often, applicants call the 800 number to make an appointment for an interview either at a field office or by telephone. SSA employees call up the applicant's earnings history by using computer terminals connected to the main computers in Baltimore. This information is then used to compute the monthly benefit. Computer support for most aspects of the retirement program allows SSA to process claims in an average of 15.5 days.[6]

Disability Insurance

The Disability Insurance Program pays monthly benefits to disabled workers and their dependents. DI, like OASI, is mandated under Title II of the Social Security Act, and is also funded by a trust fund. As of December 1992, the disabled represented 11 percent of the total combined (OASI and DI) Title H benefit program beneficiaries. The 1993 projected budget outlay for DI was $34.3 billion serving 5.1 million individuals.[7]

The determination of eligibility for disability benefits is considerably more difficult than the determination of eligibility for retirement benefits. The law requires that SSA determine whether an individual has a medical impairment expected to last at least 1 year that prevents the individual from not only doing his or her usual work, but also from doing any form of work that exists in significant numbers in the economy given his or her age, education, and work experience. Complex rules and procedures have evolved in order to implement these criteria. There is often significant disagreement with decisions made on disability claims, given that the determination of how disabling a medical condition may be is inherently a judgment decision.

The disability program is also complicated by the fact that responsibility for it is shared between the federal government and the states. As with retirement insurance, the claims are taken by SSA field offices. Evaluations of the severity of the applicant's disability, however, are made by state

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[2]Ibid.

[3]Ibid, p. 3.

[4]Social Security Administration, '"Folder 5: Primary Service Delivery/Public Contact," 1993, p. 2.

[5]Ibid.

[6]Social Security Administration, op. cit., footnote 1, p. 3.

'I bid., p. 5.

government Disability Determination Services (DDS), The applicant's file is mailed from the SSA field office to the state DDS office, which then gathers medical evidence from the applicant "s physician and other sources, makes a determination, and mails the file back to SSA to determine the monthly benefit. Many believe that the number of handoffs and stages in the process is a source of inefficiency.

Supplemental Security Income

The third major program operated by SSA is the Supplemental Security Income Program (Title XVI of the Social Security Act). It is designed to provide a minimum level of income for the aged, blind, and disabled. The projected SSI outlays for 1993 were $23.4 billion serving 5.5 million individuals.[8] SSI differs from the retirement and disability insurance programs in that it is funded out of general federal revenue, not a trust fund. It is a means-tested program; eligibility does not depend on prior contributions to a trust fund, but on the applicant's income and assets. As a result, it is possible for disabled children to receive SSI benefits; the number of new claims for children's benefits has grown rapidly since 1990.

Administering SSI is more costly and complex than the Title 11 programs because SSA must monitor income, resources, living arrangements, and, in cases where a disability is involved, medical conditions. To receive the full amount, an individual must have no other countable income. Individuals with more than $2,000 in assets cannot qualify for SSI. The component of SSI related to disability is difficult to administer for the same reasons that apply to the DI program, as well as the added challenges that are unique to SSI. Today, 72 percent of SSI recipients are disabled, further adding to the administrative burden.[9]

SERVICE DELIVERY CHALLENGES

The Social Security Administration is facing serious challenges because of a growing workload, declining staff levels, and outdated work processes. Over the past several years, the agency's performance has improved in some areas, but in many others the level of service experienced by the agency's customers has declined. In a recent document outlining issues in service delivery, the agency observed that "SSA does not deliver service as effectively as it once did and is unable to respond to change as quickly as it should. "]" Among the problems that have been identified are an inability to answer telephone calls and provide service during periods of peak demand, a growing disability backlog, difficulty responding to new workloads, and uneven delivery of services to some segments of the population that do not understand English.

Growing Workloads and Declining Staff Levels

In the late 1980s, the Social Security Administration suffered a rapid decline in staff as a result of federal budget constraints. In 1984, SSA had almost 80,000 employees; today, the agency has only 63,000 employees. At the same time, the workload has been increasing. This is especially acute in the area of disability, both DI and SSI, which involves an especially complex and labor-intensive process. From 1990 to 1993, the number of disability claims increased 47 percent, from 1.7 million to 2.5 million.[11] The reasons for this increase are unclear, but may reflect worsening eco-

[8] Ibid., p. 6.

[9] Ibid., p. 8.

[10] Social Security Administration, "improving Service Delivery at the Social Security Administration: A Conceptual Proposal," Dec. 30, 1993, p. Il.

[11] Ibid., p. 6.

nomic conditions in the early 1990s, as well as demographic changes and an aging population. Today, the disability workload is consuming over half the agency's administrative resources, despite the fact that it represents only 10 percent of the beneficiary population.

SSA believes that large investments in information technology in the late 1980s have helped it to compensate for some of the decline in staff. Beginning in 1987, SSA deployed 40,000 computer terminals to its field offices, allowing its employees online access to earnings records. The claims process for the retirement program was automated and the agency also encouraged electronic filing of wage reports and direct deposit of benefits. However, there is clear evidence that the quality of service delivery has declined in significant areas and that the agency has not been able to accommodate the growing workload and staff cuts.

Given the budget climate, SSA seems resigned to little growth in staffing or even further cuts over the remainder of the decade. This is recognized in the Agency Strategic Plan: "Because we expect Federal budget deficits to continue through the mid- 1990s, our available administrative resources are likely to grow at a much slower rate than increases in the volume of our work would warrant."] [4] As a result, SSA is looking to the increased use of computer technology to automate as many tasks as possible. In 1991, the agency began planning the IWS/LAN (intelligent workstation/local area network) project to distribute microcomputers throughout the organization. It also began to develop software for the SSI and disability programs, which had little computer support. More recently, the agency has begun a more comprehensive evaluation of its disability program to determine if there are inefficiencies that can be avoided by redesigning the process.

Disability Backlogs

The growth in disability claims has caused a crisis. The new workload has imposed large administrative costs on SSA and has led to a rapid decrease in the quality of service provided to applicants for disability benefits. The average processing time has increased from 87 days in 1990 to 128 days in 1993; SSA projects that the processing time may reach 185 days in 1994.] [5] By contrast, the Agency Strategic Plan established a target of 60 days.[16] The number of unadjudicated cases has now reached 725,000,[17] and is projected to grow to 1.3 million by September 1994.18 The situation varies from state to state; in California and Ohio, for example, the processing time is 140 days, while in North Carolina it is under 70 days.

One response to the growing workload has been to severely curtail the use of continuing disability reviews (CDRs). By law,[19] SSA is required to periodically review whether recipients of disability benefits continue to be entitled to benefits. However, because of the growth in the number of new claims, the agency has been forced to divert resources from doing CDRs. As of the middle of

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[12] Social Security Administration, op. cit., footnote 1, pp. IO-11.

[13] "[R]elying simply on additional staff is no longer an option." Social Security Administration, op. cit., footnote 10, p. iii.

[14] Social Security Administration, Office of Strategic Planning, "The Social Security Strategic Plan: A Framework for the Future," SSA Pub. No. 01-001, September 1991, p. 7.

[15] Social Security Administration, 0p. cit., footnote 10, p. 6.

[16] Social Security Administration, op. cit., footnote 14, p. 30.

[17] Lawrence H. Thompson, Principal Deputy Commissioner for Social Security, personal communication, Jan. 7, 1994, p. 3.

[18] Department of Health and Human Services, "Fiscal Year 1994, Justification of Estimates for Appropriations Committees," in testimony of Stan Kress, President, National Council of Disability Determination Directors, before the House Subcommittee on Social Security, Committee on Ways and Means, Oct. 28, 1993.

[19] Social Security Disability Amendments, 1980.

1993, SSA had over 1 million beneficiaries scheduled for reviews. In FY 1992, only 58,000 reviews were conducted.[20] There is concern that the inability to carry out CDRs is leading to benefits being paid to ineligible recipients. SSA's Office of the Actuary has estimated that there will be $1.4 billion less in the trust funds because of failure to perform CDRs in the early 1990s.[21]

SSA believes that increasing its computer capabilities is one way to handle the disability backlog. Today, computer support for the disability program is limited. Each state Disability Determination Service uses different hardware and software, and the links between the state and SSA systems are limited. One of the objectives of the IWS/LAN initiative is to install computers throughout SSA and the state DDS offices, providing a common system, and to develop a new software package to handle the disability programs. An important component of the new system is that it will permit the electronic transfer of records between the SSA field office and the state DDS, eliminating the time that the file spends in the mail.

While increased computer capability will have some impact, it will not cut the backlog dramatically. A private contractor hired by SSA to determine the effects of automation on the disability process found little correlation between the degree of automation in a state DDS and performance measures.[22] As the process is currently structured, only one day of the several months needed to handle an initial disability insurance application is spent in an actual processing activity that could be affected by automation (see table 2-1). For this reason, SSA has established a "reengineering" task force to look at more substantial changes in the disability claims process.

Slow In-Person and Telephone Service

Each year, 56 million individuals reach SSA through the toll-free telephone service, and 24 million use the field offices. The toll-free number is often used for more routine business such as answering general inquiries or handling "postentitlement events" such as changes of address. The field offices are used for more complex tasks or tasks that require documents to be verified. However, the Agency Strategic Plan states that clients should have a choice as to how they interact with the agency;[23] some clients prefer to use the field offices.

Wait-times in the field offices have been getting longer, especially in the busy urban offices that were hit disproportionately by staff reductions in the 1980s. The toll-free number, originally intended to take some of the load off the field offices, has been overwhelmed as well.[24] During peak days, the busy signal rate can be as high as 75 percent.[25] SSA prefers to look at the **access rate--** the percentage of callers who try to reach the agency and are able to get through on the same day. On peak days, the access rate is about 67 percent.[26] Even among callers who get through, the "hold" times can be significant. In FY 1991, SSA

[20] Jane L. Ross Associate Director, Income Security Issues, General Accounting office, testimony before the House Select Committee on Aging, Mar. 9, 1993.

[21] Ibid.

[22] Williams, Adley & Co., "Final Report to the Social Security Administration: Review and Analysis of Office Automatism Questionnaire for the State Disability Determination Services," Washington, DC, June 30, 1993.

[23] Social Security Administration, op. cit., footnote 14, pp. 38-39.

[24] "Too many callers receive busy signals, especially at peak hours, and some people receive incomplete and inaccurate advice. The agency cannot expect applicants and beneficiaries to use a system that limits access and dispenses inaccurate or inadequate advice." Testimony of Robert Shreve, American Association of Retired Persons, before the House Subcommittee on Social Security, Committee on Ways and Means, Oct. 28, 1993.

[25] Social Security Administration, op. cit., footnote 1, p. 19.

[26] Ibid., p. 20

TABLE 2-1: The Number of Sites, Days, Employee Hours, and Employees Required to Carry Out Typical SSA Case Work

Type of case	Sites[a]	Time (days)[b]	Employee hours involved	Number of employees involved
Denial of initial DI claim	4	120	9.6	16
Award of Initial DI claim	6	155	12,8	26
Award of initial SSI claim	5	150	14,7	19
Denial of initial DI claim and denial of claim after Reconsideration	8	223	16,0	24
Denial of initial DI claim and award of benefits after Reconsideration	10	258	19.2	36
Denial of initial SSI claim and award of benefits after Reconsideration	9	264	210	29
Denial of initial DI claim, denial after Reconsideration, and denial after Hearing	10	506	281	34
Denial of initial DI claim, denial after Reconsideration, and award after Hearing	10	553	330	45
Denial of initial SSI claim, denial after Reconsideration, and award after Hearing	10	528	306	33
Denial of Initial claim, denial after Reconsideration, denial after Hearing, and denial after Appeals Council	14	739	358	43

[a] This number represents the number of times a customer's case passes thrcugh a site Multiple passes count as another processing "site "

[b] Cumulative time, from the customer's point of view, that it took from initial claim inquiry to final settlement

SOURCE Social Security Administration, "Improving Service Delivery at the Social Security Administration A Conceptual Proposal, " Dec 30, 1993, p 9

spent over $11 million in long-distance charges for callers on "hold."*'

SSA attempts to handle the call volume in a number of ways. A control center in Baltimore tries to balance the load among the various teleservice centers by rerouting calls as needed. In addition, the agency has "spike units''—additional staff that can be diverted from other duties to handle calls on busy days. In total, about 650 employees are available to complement the core group of teleservice representatives. 28 Despite these attempts, congressional testimony, General Accounting Office reports, and HHS Office of the Inspector General reports have consistently found that SSA is well short of its goal of toll-free service that is as good as the best in the private sector.[29]

One objective for the new computers that SSA plans to acquire is to make teleservice representatives more efficient. The goal is for staff to handle calls more quickly and to ensure that a caller task can be handled with one call, limiting the number of cases in which a customer has to make multiple calls to resolve a problem. One of the tools for accomplishing this is an "expert system" that pro-

[27] Ibid.

[28] Social Security Administration, "Social Security 800: It Never Stops Working," 1993.

[29] SSA's service delivery "vision" includes the objective that "Telephone service is as good as the best in the private sector and provides a full range of services." Social Security Administration, op. cit., footnote IO, p. i.

TABLE 2–2: Growth in SSA Beneficiaries

Year	1990	2005	2015	2020
Beneficiaries (millions)	439	545	66,7	756
% increase as compared with 1990	n/a	24%	52%	72%

SOURCE Social Security Administration, "Folder 1 Introduction and Overview of SSA " 1993 p 12

vides a series of automated scripts for responding to caller inquiries. This system is intended to ensure that all important points are covered and that the agency gives consistent responses to inquiries.

As with disability processing, however, other approaches beyond the use of new computers may also prove effective. The most difficult problem in managing the toll-free service is that call volume is unevenly distributed throughout the month. Nearly 45 percent of all calls occur during the first week of the month .30 This is because all Social Security checks are issued at the beginning of the month, and customers call with questions about lost or stolen checks and other inquiries about their benefits. Several outside reviewers have suggested distributing mailing dates throughout the month, at least for new recipients.[31]

TABLE 2–3: Average Age of Disabled Worker Beneficiaries

Year	Average age of men	Average age of women
1960	573	56.7
1965	54.4	552
1970	539	550
1975	53.5	54,4
1980	529	537
1985	51.9	52,6
1990	504	508
1992	49.9	50.2

SOURCE Social Security Administration, 1993

An Aging Population and Other Demographic Changes

One major challenge facing SSA is an expected increase in the number of beneficiaries as the "baby boomers" born between 1947 and 1964 begin to retire in 2010. Table 2-2 provides SSA's estimate of total growth in the beneficiary population as a result of the aging baby boomers. A more immediate problem is that, as baby boomers reach their fifties, the percentage expected to qualify for disability payments will increase dramatically, placing further strains on an already problematic disability system (see table 2-3).[32]

In addition to growing workloads due to the baby boomers, the agency must address changes in workload resulting from judicial and legislative actions. Currently, SSA estimates that it faces about 100 class action lawsuits[33] that could necessitate the readjudication of thousands of claims. For example, a 1990 U.S. Supreme Court decision

[30]Social Security Administration, op. cit., footnote 1, p. 19.

[31]Willis H Ware Chairman, Committee on Review Of SSA's Systems Modernization Plan and Agency Strategic Plan, letter to Gwendolyn S. King, Commissioner, Social Security Administration, June 30, 1992, p. 10.

[32]Social Security Administration, op. cit., footnote 14, p. 6.

[33]Thompson, op. cit., footnote 17, p. 4.

is expected to result in 175,000 new SSI beneficiaries.[34] The Court ruled in *Sullivan* v. *Zebley that* SSA would have to change its rules for evaluating children's claims for SSI disability benefits; no longer could the agency use different procedures for evaluating child and adult disability claims. Legislative action can affect SSA's workload as well. SSA will have to begin providing annual Personal Benefit Statements (PEBES) to persons over 60 in 1995, and to all workers 25 and older in the year 2000. The resulting workload, both in issuing PEBES documents and responding to inquiries, will further strain SSA.

SSA will also have to adapt to changes in its client population. In particular, there are growing numbers of non-English-speakers and a shifting population with regard to geographic distribution. SSA must serve an increasing percentage of persons who are non-English-speaking (primarily Spanish, Vietnamese, and Chinese). The most recent national census indicates that one in seven people in the United States speaks a language other than English at home—a 38 percent increase over the past decade. To some extent, SSA tries to handle these tasks—the 800 number is answered in several languages. SSA must also be flexible enough to handle a shifting population distribution. For example, the overall U.S. population is expected to grow by 7 percent between 1993 and the year 2000, but the population in the South is expected to grow by 15.8 percent and in the West by 19.8 percent.

THE NEED FOR CHANGE

SSA's processes and procedures have evolved over a period of decades. Most SSA processes were initially designed to be carried out in a "highly specialized, sequential and manual environment."[35] Over the past 20 years, SSA has acknowledged the need to reformulate its processes and procedures, as well as to make better use of advancing information technology. The 1975 SSA Master Plan, for example, recognized that technology would be important, but that fundamental redesign of the SSA work process was key. Two statements, one from the Master Plan prologue and one from the document's summary, indicate this best:

> The SSA is faced with the need to redefine its processes if it is to cope with the ever-increasing workloads.
>
> Moreover, a projection of future workloads and related administrative costs clearly demon-- strates that the current process, already under stress, will be unable to support the magnitude of growth expected. A comprehensive examination of current processes and the development of a totally new plan for the future of SSA processes are necessary if the agency is to continue to perform its program responsibilities.[36]

These quotations could appear in an SSA document today; overall redesign of SSA work processes is still required. SSA has developed a conceptual vision of service delivery (see box 2-1). The challenge now is to translate this vision into reality using both technology and process redesign or reengineering, linked together by strategic and service delivery plans.

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[34] Ibid.

[35] Social Security Administration, Op. cit., footnote 10, p. 9.

[36] Reference Point Foundation, "Innovations for Federal Service: A Study of Innovation Technologies for Federal Government Services to Older Americans and Consumers," contractor report prepared for the Office of Technology Assessment, February 1993, p. 49.

BOX 2-1: The Social Security Administration's Vision of Service Delivery

The Social Security Administration has begun moving to address weaknesses in its service delivery In 1993, the agency outlined several goals that it would like to achieve in the future

Each person has a choice of how to interact with SSA—in person, by telephone, by mail, by fax, or by personal computer

Addresses and telephone numbers for local offices, toll-free numbers, fax numbers, and personal computer mailbox addresses are well publicized.

Telephone service is as good as the best in the private sector with

- the telephone being answered on the first try by the public,
- live service available to meet public demand,
- service available in most languages,
- all business, including claims and postentitlement, conducted by phone,
- all business conducted with one call with no need for additional call back, and
- information and referral to other services for the aged and disabled, Including health care, can be accessed

Through its network of local SSA offices

- waits for In-person service are minimal,
- virtually all Important decisions can be made by someone whom the public can see and deal with directly, including disability determinations,
- service IS available in most languages,
- all business IS conducted with one contact with no need for additional contact, and
- Information and referral to other services for the aged and disabled, including health care, can be accessed

Through the network of SSA contact stations located in places where the public congregates (including shopping centers, community centers, etc.)

- all business IS conducted, including claims and postentitlement actions, for those located in rural areas and areas Isolated from local offices, and
- high volume business IS conducted (e g,, SSNs [Social Security Numbers] in INS [immigration and Naturalization Service] offices, SSI [Supplemental Security Income] claims in welfare offices) for those located in third party offices

For those persons unable to interact with SSA by phone or visit a local office, In-person service will be provided at the person's place of residence

All SSA services, whether by phone or in person, are accessible to persons with disabilities

Facilities for electronic contact with SSA are located in communities to provide access to information about Social Security and SSI benefits and for simple claims and postentitlement actions

Help in filing for Social Security and SSI benefits is provided by third parties and outreach programs are conducted by Social Security to find people who may be eligible for benefits

SSA Information and actions are accurate and timely, SSA employees are courteous, and SSA does everything possible to minimize any inconvenience associated with mistakes or with delays

SOURCE Social Security Administration, "Improving Service Delivery at the Social Security Administration A Conceptual Proposal," Dec 30 1993 pp 2-3

Social Security Administration's Planning Process 3

The Social Security Administration intends to spend about $1.1 billion on information system procurement and modernization over the next 5 years. Critics of the agency especially the General Accounting Office (GAO)—assert that SSA does not have a defensible justification for this huge investment, and has not shown it will significantly improve either service delivery or the work environment. [1]

In discussions with Office of Technology Assessment (OTA) analysts, GAO officials have stated that the core of their criticism of SSA is the agency's perceived unwillingness to undertake a rigorous, systematic restructuring of the entire process of eligibility determination and delivery of Social Security benefits before major additional procurements of information technology are carried out.

SSA, however, maintains that:

- meeting GAO's demand that SSA first review and restructure the entire service delivery process, which may require regulatory changes, would delay technological improvements for a number of years;



[1] Specifically, GAO has urged SSA to "link technology systems redesign to a long-range business strategy" by setting performance goals; demonstrating institutionalized plans and timeframes to achieve the goals; and identifying the financial, information, and human resources needed for implementation. See letter from Frank Reilly, Director of Human Resources and Information Systems, GAO, to Louis D. Enoff, Acting Commissioner of Social Security, Mar, 30,1993. GAO also urged SSA to: 1) document [he justification for SSA's technical solution, 2) better define SSA's need for intelligent work stations and local area networks, 3) develop an accountabil ity methodology, and 4) better define state disability requirements. GAO analysts say that SSA has made significant progress in responding to GA() criticisms and suggestions.

- the present "dumb terminals" are at the end of their life, no replacements are available, and failing devices are being cannibalized to repair the inadequate number still in use;
- new workstations and networks are necessary to allow SSA to cope with a rapidly increasing workload and to solve persistent and worsening problems in processing disability claims; and
- SSA has chosen technology that is flexible enough to accommodate all changes that will result from strategic planning and agency reengineering, both of which it is diligently undertaking.

GAO'S criticism mirrors criticisms leveled at SSA a decade ago, during an earlier cycle of information technology procurement. In 1982, SSA announced a 5-year "Systems Modernization Plan." This was a response to serious problems that had developed during the 1970s, threatening to disrupt SSA's service delivery operations. It was also a desperate attempt to prepare for the coming decimation of SSA's workforce by the Office of Management and Budget (OMB), from which the agency has not yet recovered.

GAO[2] and OTA[3] both concluded that the Systems Modernization Plan was defective because it was not based on a long-range strategic plan for solving SSA's deeper management and service delivery problems. The OTA assessment pointed out that SSA's attempts at strategic planning were flawed because the agency failed to:

- include strategic as well as operational planning;
- have an effective vision of the future, with strategies for using new technology to accomplish government missions;
- involve users, clients, and the interested public in the planning process;
- identify innovative opportunities for use of information technology; and
- effective y connect planning to implementation.

PLANNING IN THE 1990s

In the late 1980s, SSA set up a new strategic planning office and developed an Agency Strategic Plan (ASP) released in January 1988. A revised strategic plan appeared in September 1991, which included some objectives for service delivery. The ASP is now about to undergo its third iteration. But only in mid-1993 did SSA move to correct some of the deficiencies noted above:

- The ASP of 1991 defined some service delivery objectives and looked to modernized systems to achieve them; thus, SSA is beginning to forge a link between strategic planning, operational or service delivery planning, and systems planning.
- SSA is in the early stages of developing a Service Delivery Plan that is intended to operationalize the goals of the ASP and move a step further in generating "a vision of the future."
- A "framework for human resource planning" has been developed.
- The Systems Modernization Plan has become firmly focused on "user needs" and users are consulted in architecture design.
- The new planning process includes parallel initiatives to develop and schedule steps toward implementation.
- In late 1993, SSA began to reach out to clients and "the interested public" in service delivery planning through the use of focus groups, surveys, and similar techniques.
- SSA began, also in late 1993, the process of "reengineering" some especially troublesome service delivery processes; this is still in the early stages.

These signs of progress are somewhat suspect because systems planning still has first priority

[2] U.S. Congress, General Accounting Office, *Social Security Administration: Stable Leadership and Better Management Needed To Improve Effectiveness*, GAO/HRD-87-39 (Gaithersburg, MD: Mar. 18, 1987).

[3] U.S. Congress, Office of Technology Assessment, *The Social Security Administration and Information Technology—Special Report*, OTA-CIT-311 (Washington, DC: U.S. Government Printing Office, October 1986), p. 15.

and receives most of SSA's planning resources; it is already in the implementation stage. Strategic planning and service delivery planning lag far behind systems planning, and therefore seem to be the post-hoc rationale for systems procurement rather than its purpose. The signs of progress are also suspect because many of them have appeared during the few months that SSA procurement funding and authority have been clearly threatened by continuing GAO criticism of SSA planning--criticism echoing that made in the 1986 OTA report and the 1987 GAO report.

The SSA planning process is fragmented, poorly sequenced, and uncoordinated. The links between the component plans often appear weak and *pro forma*. *The* sequencing is especially unfortunate. Systems planning, which should follow and be designed to implement strategic and service delivery planning, has already reached the implementation stage and could, therefore, constrain and distort the overall planning process.

To fully correct these problems, SSA needs an agency planning process that is comprehensive, integrated, and thoroughly supported at the highest executive level. Ideally, the comprehensive plan would include the following elements (whether embodied in one document or in several):

1. an overall *strategic plan* to formulate long-range agency goals;
2. a *service delivery plan* to redefine improved modes of delivery and target quality levels for all SSA services-possibly including fundamental restructuring or "reengineering" of SSA's work process;
3. a *systems plan* that would procure technology that is selected or designed to achieve the strategic and service delivery goals;
4. a *human resources plan* that would prepare SSA's workforce to use the technology to accomplish those goals in a cooperative and productive environment;
5. a *facilities plan* that would efficiently marshal] SSA's physical resources toward goal accomplishment; and
6. an *implementation plan* that would schedule and coordinate the necessary steps in a rational change program.

The service delivery plan should give form to the "vision of the future" articulated in the agency's long-range strategic plan. The plans for technological, human, and physical resources would then spell out the steps to be taken toward these goals. SSA has, indeed, put these elements in place, but because it resisted long-range planning for so long, the relationships between the elements are only weakly established.

Fortunately, modern information technology has become very flexible and adaptable. SSA systems modernization is taking good advantage of this flexibility, choosing platforms that can accommodate and adapt to changing needs-even to processes that are far more innovative and creatively reengineered than SSA planners appear likely to come up with. Much of the ASP implementation—perhaps 75 percent, some SSA officials say—will require systems support. The systems planners maintain that the intelligent workstation/local area network (IWS/LAN) architecture they have chosen is appropriate for these goals.

The fact that an improved strategic planning process is becoming institutionalized at SSA and has been accepted by the new SSA commissioner is a hopeful sign that the agency may eventually achieve the benefits that will fully justify its ambitious systems procurement plans. In the past, new commissioners have ignored or thrown out existing plans, forcing SSA to repeatedly begin again. This is demoralizing to the agency and confusing to congressional oversight committees.

AGENCY STRATEGIC PLANNING

An Agency Strategic Plan was issued by SSA in January 1988. However, anew SSA commissioner who took office in August 1989 declared new goals and objectives and redirected budget allocations, ignoring already stated priorities.

A second ASP was issued in September 1991. It includes seven broad service goals, a set of stra-

tegic priorities, and 34 related quantified service delivery objectives.[4] The service goals are: 1) to issue Social Security numbers properly; 2) to maintain earnings records properly; 3) to pay benefits correctly; 4) to pay benefits when due; 5) to provide prompt, courteous service; 6) to inform the public of their rights and responsibilities; and 7) to ensure the integrity of payments and records. The strategic priorities are: improving client access to SSA, improving the disability process, improving the appeals process, moving toward a "paperless agency," and establishing a decentralized data-processing structure.

These five priorities are the clearest link between the Agency Strategic Plan, the Service Delivery Plan, and the Systems Plan. In 1992, a National Research Council Committee on Review of SSA Systems concluded that:

> Although the ASP serves as a high-level overview or framework, it falls short of what would be accepted as a strategic plan in industry. . . . [because it] does not provide strategic, focused implementation plans. . . .

SSA has, however, put in place a "Unified Planning System" with a four-person strategic planning staffs The Unified Planning System includes a process for revising and updating the ASP and a process to translate ASP into detailed "tactical plans" and annual budgets. The planning staff works with representatives from major SSA components (e.g., Operations Division) to do detailed planning for each of the strategic priorities.

Larry Thompson, SSA's principal deputy commissioner, acknowledges that there are "a lot of similar things going on in different places" that need to be tied together, that there is not yet a "shared vision," and that the strategic plan still needs to be validated by the public. However, he believes that SSA is moving aggressively in the right directions.

SERVICE DELIVERY PLANNING

Although SSA already is developing several projects to improve service delivery, it has just begun to work up a Service Delivery Plan (SDP), in response to GAO's repeated recommendations. The basic assumption of SSA's management is that the substance of SSA service is mandated and can be changed only in response to congressional actions. The agency does recognize that the location and mode of service delivery can change, but SSA has appeared content to let these changes be determined by technology, rather than proactively using a service delivery plan to define systems requirements.

The SDP began as the responsibility of SSA's operations Division, not of the planning staff. The initial approach was to refine the work process to take advantage of the technology envisioned in the Information Systems Plan, i.e., IWS/LAN.[6] Recently, more emphasis has been put on outreach to beneficiaries, employees, and the public, and the responsibility for development of the SDP has been elevated to the Office of the Principal Deputy Commissioner in order to move the plan to "a rapid track for completion."[7]

The SDP so far exists only as "A Conceptual Proposal." The first version appeared in mid-October 1993. The aim was to fill out the "vision of the future" spoken of in the Agency Strategic Plan by specifying "the access methods from which customers will be able to choose and the level of service that the customer can expect from SSA." The conceptual proposal recognized some

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[4] A comparison of the current levels of performance with the levels to be reached by 2005 enabled SSA to "identify its strategic priorities." Under each of these strategic priorities are defined "initiatives"; under these, in turn, are sub-initiatives and "projects" designed to demonstrate ways of reaching the goal.

[5] The planning staff is under the senior executive officer (the third-ranking official in the agency, following the commissioner and the Principal deputy commissioner).

[6] Also see chs. 1 and 4.

[7] (Then Acting SSA Commissioner) Larry Thompson's letter to Comptroller-General Bowsher, Sept. 16, 1993, p. 2.

serious problems within the agency, including business processes "which were designed to work in highly specialized, sequential, and manual environments" and required large overhead structures, rigid responses, highly specialized jobs, and limited career paths.[8] The plan stressed the necessity for SSA to reengineer its processes to "dramatically change the way it does business" and to maximize flexibility, responsiveness, and speed while minimizing cost.

The details of this reengineering were lacking, but the draft was definite on one point; namely, that '*only the combination of Community-Based Offices (CBOs) and Integrated Services Centers (ISCs)" would "meet all of the objectives that SSA wants to drive its process reengineering."[9] This definitive conclusion was reached on the basis of analyzing 18 different alternatives, ranging from strong centraliza tion into fewer larger-scale centers to complete decentralization into the 1,300 field offices.

On December 30, 993, a revised Conceptual Proposal was distribut ed as a basis for "stakeholder discussion s." Far from being an amplified or more detailed proposal, this version was a step back toward generalizations and away from a plan. In fact, the cover memo emphasized that the revised draft "deleted all references to. . . a 'service delivery plan'. . ." and ". . limited SSA's next steps to the stakeholder discussions." [10] Most importantly, this version deleted all references to community-based organizations and integrated services centers, or to any alternative organizational arrangements. The reason given was that "SSA has decided that it is premature to discuss organizational alternatives without first deciding what process changes it needs to make."[11]

SSA says that is determining how to get the service delivery concept paper out for comment to SSA managers, the union, advocacy groups, Congress, and others. As early as 1987, GAO urged SSA to involve clients and public interest groups in determining future service delivery methods, ' [2] but SSA did not do so. Some SSA line managers criticized this lack in early drafts of the Service Delivery Plan,[13] and even SSA's planners noted that the lack of consultation with the public compromises the agency's ability to understand client needs. The SSA's Policy Council finally decided in August 1993 that SSA needed public input on service delivery from beneficiaries and the general public. From October through December 1993, 12 focus groups (including one Hispanic group and one Vietnamese group) were held in six cities. Their input, SSA says, "will be the cornerstone of the Agency's Service Delivery Plan."[14]

INFORMATION SYSTEMS PLANNING

In 1990, three factors drove the agency to evaluate alternative systems strategies:

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[8] Social Security Administration, "Improving Service Delivery at the Social Security Administration: A Conceptual Proposal," Oct. 21, 1993, draft, p. ii. In fact, however, SSA has a proud and longstanding tradition of bringing employees up through the ranks from clerical to high-level executive positions during a lifetime of service. This sharply changed during the 1980s as the last wave of systems modernization routinized and narrowed many jobs and cut off many job ladders. See Office of Technology Assessment, op. cit., footnote 3.

[9] Social Security Administration, op. cit., footnote 8, p. iii.

[10] Cover memo to SSA Executive Staff, Dec. 26, 1993, accompanying revised Conceptual Proposal of Dec. 30, 1993.

[11] Social Security Administration, "improving Service Delivery at the Social Security Administration: A Conceptual Proposal"' Dec. 30, 1993, draft.

[12] General Accounting Office, op. cit., footnote 2, p. 35. GAO also noted that, in developing the first ASP, SSA "did not seek or respond to input broadly from within the agency. "

[13] The professional association representing SSA's line managers has supported a more decentralized work distribution focused on small community-based field offices.

[14] Thompson, op. cit., footnote 7.

1. the shelf life of the existing terminals would begin to expire in 1995; maintenance contracts were running out and some parts would no longer be produced;
2. other agencies and corporations were moving to distributed processing and networking; and
3. key elements of the ASP called for modernizing and improving basic processes and substituting electronic claims folders for paper folders; this implied—according to the systems planners--establishing a cooperative processing architecture.

An SSA working group was convened in September 1990 to review technical and business issues and develop recommendations.[15] The working group visited many agencies and companies to identify and compare technical alternatives.[16] It eventually recommended "smart terminals" or personal computers (as had earlier been recommended by the Department of Health and Human Services' (HHS's) Office of the Inspector General, GAO, and the National Research Council).[17] The working group reported its recommendations in March 1991, and set goals for pilot and pre-operational testing.

SSA planners then formulated 12 business elements to support the Agency Strategic Plan. These were reviewed and endorsed by a National Research Council panel; then five alternative systems architectures were developed and analyzed. This analysis was published in 1991.[18] The five architectures were rated using 15 criteria, and the IWS/LAN architecture was rated best. Thirteen IWS/LAN pilot sites are now operational.

The Information Systems Plan was developed without guidance from a service delivery plan; thus, it aimed at further automating the existing work process, focusing on making recognized tasks more efficient rather than on innovations in the mode or quality of service. It does, however, describe an information system "that will support employees who provide personal services to beneficiaries *and* will support other service-delivery options for those who choose to interact with the agency differently than in the past."[20] The architecture, says SSA, is flexible enough to meet all of the agency's needs, however much the work process changes. In the worst case:

> . . . Should current or planned reengineering efforts lead in a direction of such radically altered business processes that the IWS/LAN platform could not support it, the very scope of such changes would make it unlikely that implementation would occur before the end of a normal life cycle for any equipment procured within the next few years.[21]

For the next 5 years (1994-98), SSA plans to implement the IWS/LAN project agency wide, do process reengineering studies, and support other selected pilots and investments in technology derived from SSA's tactical plans (e.g., kiosks).

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15 Social Security Administration, "Report to the Senate Appropriations Committee on the Intelligent Work Station/Local Area Network Project," Apr. 5, 1993, p. 11. Transmitted by Elizabeth M. James, Acting Assistant Secretary for Management and Budget, Department of Health and Human Services, memo, Apr. 16, 1993.

16 These included the Internal Revenue Service, Department of Health and Human Services, Department of Defense, Central Intelligence Agency, General Services Administration, Hartford Insurance Group, Wal-Mart, and several state governments.

17 The working group considered and rejected a prototype system called TAPLINK that used the existing dumb terminal-mainframe computer connection and added a minicomputer via a LAN to provide access to office automation applications and local computing power.

18 Social Security Administration, "The Social Security Administration's Analysis of the Alternative Architectures for the Distributed Data Processing Pilots," May 24, 1991.

19 Ibid. Also see summary of the Aug. 10, 1993, SSA briefing for OTA.

20 SSA, op. cit., footnote 15.

21 Thompson, op. cit. footnote 7, p. 3.

The SSA's unionized workforce has not participated actively in planning activities. According to union officials, they did ask to participate in planning.[22] Union representatives were briefed at quarterly meetings with top managers, and were told that the automation plan would involve significant downsizing of the workforce and retraining for those retained.

SSA projects a savings from automation of 7,504 workyears, but insists that the resulting workyear savings will be redeployed to other tasks where additional workers are badly needed. SSA may be forced to take personnel cuts anyway.[23]

Union officials welcome automation and like the proposed workstations, but fear that further automation could be used to justify workforce downsizing even though SSA is already understaffed as a result of downsizing in the 1980s and growth in the workload.[24] Union officials also argue that new automation should be deployed first where it is most needed—to workers involved in disability claims-processing. Training is another stubborn issue. Union officials claim that training is inadequate because the workload is so heavy that people cannot be offline long enough for proper training.[25]

Union officials support the IWS/LAN strategy, but some privately assert that SSA consistently "overbuys" technology that is more sophisticated than it needs.[26]

Some of the problems that beset SSA's systems modernization efforts in the 1980s—such as a lack of up-to-date systems and software skills, poor choice of outside contractors, and inadequate attention to user needs—have been corrected. A comparison of SSA's efforts with similar automation programs in the United Kingdom shows a number of similar mistakes and problems. However, as a whole, the comparison tends to shed a favorable light on the U.S. program. (See box 3-1 for details.)

In 1986, an OTA report, referring to SSA's earlier Systems Modernization Plan (SMP), concluded—in words that apply equal] y well to SSA's current systems modernization efforts—that:

> The basic strategy (of the SMP). . . is reasonable and defendable in the sense that it is consistent with accepted systems engineering practices . . . . [W]hether or not the original decisions were the best ones, the alternative strategies also have disadvantages and risks; they cannot be shown to offer stronger guarantees of success. . . . Achieving SMP's objectives now

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[22] Discussion with John Gage, President, AFGE Local 1923, Sept. 8, 1993; and by telephone with Al Levy, Executive Director of the AFGE headquarters local, Aug. 17, 1993. The information about occasional briefings and worker-nonparticipation was also confirmed in a telephone discussion with David Jenkins, of SSA's Office of Human Resources, also on Aug. 17, 1993. According to John Gage, participation in systems planning was raised in contract negotiations, but it does not appear in the final contract. The union has concentrated in the recent past on successfully negotiating ergonomic furniture.

[23] According to SSA, the current OMB directive is that HHS must give up 5,000 full-time equivalent positions in 3 years; 2,000 will come from SSA. Note, however, that while this is the official position, the Department of Health and Human Services may reduce SSA's cuts and shift personnel reductions to other areas within the department.

[24] The number of SSA employees declined from 82,500 in 1983 to an estimated 63,300 in 1993 (full-time equivalents), a decline of 23.3 percent, while the number of people served rose from approximately 39.5 million to about 47.5 million (a rise of 16.8 percent).

[25] Gage, op. Cit., footnote 22, SSA's Office of Human Resources did a human factor impact survey using questionnaires and task analyses and found that employees with 6 months' experience were very positive, but complained that front-end training was "too intense" and refresher training was inadequately scheduled. Training is being reevaluated.

[26] Ralph C. de Juliis, Executive Vice President, National Council of SSA Field Operations Locals, AFGE Council 220, personal communication, Oct. 4, 1993. One labor representative says that ". . .SSA wants to buy this hardware (1 WS/LAN) and has all kinds of ideas how it might be used when SSA's work is reengineered pursuant to SSA's many and various Strategic Plans. . . . reengineering will be driven by very expensive hardware purchases and the need to *ex post facto* justify those purchases instead of having reengineering driven by the needs of the public and the employees (external and internal customers)."

BOX 3–1: Systems Modernization in the United Kingdom's Department of Social Security

The United Kingdom's Department of Social Security is one of the U.K.'s largest agencies, accounting for 30 percent of all public spending and 10 percent of central government staff. Until 1980, the agency used only batch processing by central computers, at the client level, everything was done on paper. In 1980, a decision was made to install 40,000 microcomputers in 1,000 offices, linked to centralized computer systems.

The plan was called the "Operational Strategy." Business objectives were to reduce costs and increase both quality of service and job satisfaction.[1] Net savings of $2.4 billion were to be achieved, mostly by eliminating 20,000 jobs.

In the next 11 years, projected costs rose from $l billion to $3 billion, while estimates of eventual savings and benefits fell.[2]

The baste choice made in 1980 was between complete centralization and Integration of the database, and decentralization. Centralization entailed disadvantages of size, complexity, heavy communications costs, and highly complex software; and susceptibility to disruption from systems failure, sabotage, or natural disaster. The disadvantages of decentralization were higher capital and running costs, untested microcomputer facilities, and problems of maintaining uniform software. "The compromise was a three-tier structure with a central general index, several area (regional) centers, and terminals m local offices.

Planning and design took 3 years (1982-85), But in 1985, the government announced plans for completely reforming social security and restructuring benefits, this sent much of the planning back to the drawing boards. By 1987, many of the 14 implementation projects had slipped far behind. Anew "fast and furious" implementation initiative began, but slippage continued. A critical report from the National Audit Off Ice in 1989 was followed by strong criticism in Parliament.

The major problems in the U.K. modernization effort included:

1 High turnover (45 percent) among the operational strategy staff and an extreme shortage of technical skills These were dealt with by hiring "consultants, but the outsiders cost nearly five times as much as the equivalent number of in-house staff The relations between consultants and internal staff were bad There was little skill transfer from consultants to government workers

2 Lack of low-level user Involvement systems designers did not understand the work processes they were trying to automate. Some projects had "project user teams" as part of their steering committees, but these were composed of "Higher Executive Officers, Senior Executive Officers, and above."[3]

3. Policymaking and administrative management were unnecessarily separated. For example, the restructuring of benefits in 1985 took systems planners by surprise, ". .The overall tone of the Operational Strategy was aimed at how best to run the administrative machine, given the policy inheritance, rather than how to serve the public or effect an anti-poverly policy." There was no link between operational systems and the production of data for planning.

Experts say that the U.S. Social Security system, in spite of its problems, is more cost-effective than the U K. system m terms of costs and time expended per transaction.[4]

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[1] United Kingdom, Department of Social Security, "Social Security Operational Strategy A Framework for the Future, " 1982

[2] Discussion with Helen Margetts, Research Officer, London School of Economics, in Washington, DC, Sept 10, 1993, see also Helen Margetts, "The Computerization of Social Security The Way Forward or a Step Backward, " *Public Administration*, VOI 69, autumn 1991, pp 325-343

[3] David Collingridge and Helen Margetts, 'Can Government Information Systems Be Inflexible Technology? The Operational Strategy Revisited, " forthcoming in *Public Administration*, 1994

[4] Margetts, op cit footnote 2

depends on SSA's technical competence, on the quality of its management as it implements the SMP, and on certain factors outside of the agency's control, including Administration policy and directives.[27]

HUMAN RESOURCES PLANNING

The Agency Strategic Plan of 1991 recognized that the future will bring significant changes in SSA's workforce, and called for the development of a Human Resources Plan. The impending challenges include the approaching retirement of a majority of SSA mid- and upper-level managers;[28] steadily increasing workloads; the need for an increasing number of bilingual employees; and the demand for retraining, job redefinition, and new career ladders that is implied by new technology.

In the meantime, SSA already suffers from "serious imbalances in human resources allocations" resulting from uneven attrition after the *20* percent downsizing during the 1980s.29

Work on a Human Resources Plan for meeting SSA's recruitment, training, promotion, and motivational challenges began in 1991 when SSA created a new position, deputy commissioner for human resources. Not until the end of 1993, however, was a "framework" for human resources (HR) planning ready for internal comment. The first deputy commissioner for human resources says that developing **a** plan **was slow because** there was no Service Delivery Plan to guide HR planning, and because "this was unexplored territory and we couldn't find anyone who knew how to do it."[30]

HR planning was assigned to a small group of people temporarily engaged in SSA development programs. They conferred with human resource directors from other agencies, and "scanned the environment" to identify trends to use as a basis for planning. A draft framework was developed and reworked with the deputy commissioner for human resources. A second draft was taken to the other deputy commissioners, who insisted on a number of revisions. A third draft was negotiated with the deputy commissioners in individual face-to-face meetings. The framework has now been presented to the SSA commissioner and released to unions, internal advisory councils, and the SSA Managers Association for comment.

Up to that point, the "human resources" themselves—the employees—had not participated in the planning.[31] Nor were the personnel in SSA's regional offices given any opportunity to contribute. From this point on, however, employees at all levels and in all locations are to be represented in working out ways to achieve the goals laid out in the framework.

The general theme of the framework is "that managers must now learn to manage teams" and to be coaches and mentors. Total quality management is "a central part of the vision. " The elements of the plan are staffing and recruitment, the work environment, training and development, and man-

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27 Office of Technology Assessment, op. cit., footnote 3

28 According to the General Accounting Office, 54 percent of SSA's Senior Executive Service level and 42 percent of GS grades 14-15 employees are eligible to retire between 1992 and 1997.

29 Social Security Administration, op. cit., footnote 8.

30 The deputy commissioner for human resources reports that her working group visited "many companies, agencies. and universities, " but could find "few or no people who knew anything about human resources planning. " In fact, however, human resources pkannmg is a well-developed professional area with a large national professional association, several excellent journals, annual and regional meetings. and a large body of Iiterature.

31 As to why workers were not asked t. participate in the planning process, the deputy commissioner for human resources explained that this is not the way that SSA operates. At least until recentl y, the relationship between management and the unions has been considered adversarial by both sides. There are three unions the Association of Federal Government Employees (AFGE), the National Teamsters Union (NTU), and the National Federation of Federal Employees (NFFE). AFGE, a large white-collar union, represents by far the largest percentage of SSA employees.

agerial tools. The framework is based on an assumption that there will be neither growth or further downsizing of the workforce. As already noted, however, SSA could have to take its share of the reductions assigned to HHS in the context of the President's "reinventing government" initiative.

The HR plan is merely a very general framework, according to the planners. It contains no quantified goals and no time lines; these will be developed later in implementation plans. (Draft implementation projects are being developed but are not yet, in March 1994, ready for comment.) The HR planners are confident that when the HR Plan, the Information Systems Plan, and the Service Del i very Plans are fully developed, "they will all come together." The links between them are, however, tenuous during the development process. As the first IWS/LANs are being installed, there is no long-range plan for managing the retraining, job redefinition, promotions, recruitment, and health issues that they will raise. Those will have to be dealt with on an ad hoc basis, probably in part through labor negotiations.

FACILITIES PLANNING

Facilities planning will begin only when the other plans and reengineering recommendations are accepted because facilities plans must be responsive to them. SSA officials discuss several alternative facilities scenarios ranging from one integrated hub per state to highly decentralized community-based centers, depending on factors such as a possible move to consolidate service centers or to significantly downsize staff. In the meantime, routine facilities planning continues to ensure that maintenance and necessary replacement of buildings, leasing arrangements, installation of ergonomic furniture, and site preparations for IWS/LAN are carried out.

Significant changes in SSA organization and delivery modes thus might be temporarily delayed or hampered by the necessary changes in facilities and accommodations, but this appears unavoidable.

REENGINEERING AND TOTAL QUALITY MANAGEMENT

"Total quality management" (TQM) is an organizational tool used to restructure an organization through "continuous improvement" to deliver a complete, well-defined service to a specific group of users. TQM emphasizes the cooperative efforts of workers and managers to find new and better ways of defining and relating goal-oriented tasks.

SSA has had a TQM effort underway for some months, with a number of active TQM committees and the vigorous support of most of the top managers. This initiative figures largely in all of the plans under development, especially the HR plan.

A more drastic organizational improvement strategy is "reengineering," which ". . . reflects the growing realization that continual improvement . . . is not enough"[32] and "aims to disrupt and redefine established procedures on a one-time basis."[33]

> Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service, and speed.[34]

From the reengineering perspective, any work process should consist of combining various inputs to create an output of value to a customer (who may be external or internal). Individual tasks

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32 Gary K Gulden and Robert H Tack, "Combining Quality and Reengineering Efforts for Process Excel lence," *Information Strategy: The Executive's Journal*, spring 1992, pp. I IO-1 15.

11 Richard p Wells et al., "What's the Difference Between Reengineering and TQEM?" *Total Quality Environmental Management*, spring 1992, pp. 273-282.

34 Michael Hammer and James Champy, *Reengineering the Corporation: A Manifesto for Business Revolution* (New York, NY: HarperBusiness, 1993). (Book excerpt, "The Promise of Reengineennng," *Fortune*, May 3, 1993, pp. 94-97).

may be combined, eliminated, or automated to achieve the desired workflow. Reengineering is not incremental change; it reshapes core processes, eliminates unnecessary organizational hierarchy and work specialization, and identifies hidden flows of resources and information in order to cut out those that are not productive. Reengineering also emphasizes a shift from individual data collection for single use to pooling data for multiple uses,[35] and emphasizes the connection between an organization's strategic plans and information systems.

Unlike TQM, which can be tackled at departmental levels, many experts argue that reengineering should involve the whole company or agency,[36] or at least a major, discrete product-delivery component of the agency. It works best where a company or agency is floundering and has no option but to do something quickly.[37]

In spite of the 1986 criticism by OTA[38] and continual prodding by GAO, SSA had not begun to think seriously about the necessity of reengineering its business processes until the summer of 1993. On July 26, the decision was made to try reengineering the part of SSA--disability claims and benefits-that was most clearly "floundering and with no option but to do something, fast." A reengineering team or task force was charged with recommending whether and how reengineering was to be implemented. The task force began work on October 4, and by the end of 1993 had interviewed about 1,000 people, conducted 12 focus groups, and visited approximately 60 federal and 30 state agencies in *25* states. A first draft plan, originally expected by February 4, 1994, is now promised by March 31.

The task force will make two sets of recommendations to the SSA commissioner. One set will be based on current law; the other will be unconstrained by current law. There is to be a 1-month period for executive staff comment, followed by a final decision by the SSA commissioner. Implementation at some sites is planned before the end of 1994.

The reengineering task force has been instructed that it should "rethink" the entire disability process, except for things that cannot be changed: 1) the basic definition of disability, which is set by law; 2) the process of vocational rehabilitation; and 3) the right to appeal, including a hearing before an administrative law judge. SSA is not holding the design team to the current hearing process or to the current federal-state division of responsibility.39

The 18-person task force, consisting mostly of SSA managers with field experience in disability determination and processing, includes a physician and an administrative law judge. There is an executive steering committee to provide direction; it includes one union official, one Disability Determination Service director, and two SSA regional commissioners.

The reengineering effort is designed to correct serious problems in the disability determination and appeals process that were marked as priority areas in the Agency Strategic Plan, but it is not directly linked to the more general planning activities. SSA maintains that, of necessity, the reengineering initiative and strategic planning will continue in parallel. Strategic planning or the recommendations of TQM circles may produce im-

35 Wells et al., op. cit., footnote 33.

36 Dan Rasmus, "Reengineering, or Evolution Through Violent Overthrow," *Manufacturing Systems*, September 1992, pp. 52-58.

37 Jon Parker "An ABC Guide to Business Process Reengineering," *Industrial Engineering*, May 1993, pp. 52-53.

38 OTA op. Cit., footnote 3. in its 1986 report, OTA noted that SSA's "frequent, drastic reorganizations broke up the earlier coherence and accountability of major programs but failed to provide what may have been better---a *rational structure based on a redesigned work flow and technology-based functions.*" (p. 14).

39 State offices (entirely funded by the federal government through SSA) make the initial determinations of who is or is not entitled to disability benefits.

provements that are urgently needed and should not be delayed until reengineering is implemented. If the improvements are congruent with the more radical changes anticipated by reengineering, they will be preserved; if not, little will have been lost and some interim benefits may still have been enjoyed.

This strategy is based on two assumptions: 1) because they are mandated by laws, the basic parameters of disability compensation will not change, and 2) any significant reengineering of" the process will require new regulations or basic revisions of existing regulations, which take a long time. Some laws related to Social Security benefits are self-effectuating; that is, they mandate a straightforward change in benefits or entitlements with a date at which they will become effective, and there is no need and no room for discretionary action by SSA.[40] Other laws, however, provide for determinations or discretionary findings by SSA;[41] therefore, regulations are issued using the notice of proposed rulemaking (NPRM) procedures required by the Administrative Procedures Act to assure equity and fairness. NPRM procedures take from 6 months to several years to accomplish (in extreme cases, 5 years). New or revised regulations are then turned into detailed Program Operations Manual System (POMS) processing procedures.

This is a central dilemma for SSA in trying to meet the GAO demand for thorough restructuring or reengineering of the entire service delivery process before final decisions about systems modernization and technology procurement are made. SSA assumes that the wait would delay further automation for a number of years.

The reengineering team leader reports that they will "look for things to implement quickly, using studies already done" (although this violates the reengineering premise that incremental changes may interfere with the opportunities for radical change). An internal SSA document entitled "Disability Process Reengineering and the Modernized Disability System," dated September 2, 1993, says that SSA plans "to improve the disability process. . .[through]. . .a concentrated effort to reengineer the procedures and methods that are currently used to serve the customer," and also recognizes that "the primary enabling tools that are being used" are the IWS/LAN technology and the Modernized Disability System (MDS).[42] In a report by SSA to the Senate Appropriations Committee, the agency said that:[43]

> Automation provides the tools that will allow SSA to achieve reengineering of the current business processes, not to simply automate what is done today.

However, automation assumptions are already in place although reengineering is just beginning. The MDS is, in fact, designed to automate the disability claims process as it now exists, at the same time laying a foundation for reducing paperwork documentation, eliminating some queuing time, and establishing better workload controls. It begins to provide automated decision logic and documentation, and incorporates some job function changes.

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40 This material is based on discussions with officials in the SSA Office of Regulations, November 1993. An example Of a self-effectuating rule is the provision in the 1990 Omnibus Budget Reconciliation Act that all determinations of childhood disability must be based on a recommendation by a pediatrician. In such cases, there is no need for SSA to promulgate a regulation, although guidelines for operational procedures may be issued.

41 Actually by the Secretary of Health and Human Services; such laws may read "The Secretary shall determine. . . ." or "at the discretion of the Secretary. . . ."

42 The MDS is described as "a singular software solution running on a client server hardware platform." The intake process, 'here "ata are gathered from the claimant, is being reengineered to utilize decision support logic to structure the interview toward the particular body system(s) at issue. The structured interview will guide the claims takers to be sure that all necessary questions are asked and documented and to be sure that all available information is obtained in that first encounter.

43 Social Security Administration, op. cit., footnote 15, p. 8.

CONCLUSION

SSA has not yet satisfied the GAO recommendation that its systems procurements be based on an integrated, comprehensive planning process aimed at thoroughly restructuring its service delivery. SSA does, however, appear to be making a good faith effort to create and institutionalize such a process. The extent to which it will have the will, resources, management stability, and executive leadership to accomplish this goal remains to be seen.

The lack of stable and consistent management in the past, together with the failure to actively involve its customers or its large and dedicated workforce, contributed to SSA's failure to articulate a "vision of the future" that would authoritatively and convincingly define an appropriate technological infrastructure for meeting the needs of service recipients and service delivery.

The technology procurement and deployment plan that SSA now seeks to implement was not designed on the basis of a thoroughly developed, broadly participatory strategic plan. In spite of this, SSA systems planners have learned from past mistakes. They are increasing their attention to the needs of end users, listening to the recommendations of national experts, and taking advantage of the flexibility of modem information technology. They appear to have chosen an architecture and platforms that can accommodate changing needs and new methods of packaging and delivering services as these are created by improved long-range planning or process reengineering.

The development and acceptance of effective strategic planning has a long way to go at SSA. The elements of the process are, however, now in place. Congressional oversight committees and GAO should continue to insist that SSA leaders nurture and broaden their planning to make it more participatory, more creative, and more effective. This does not require that systems modernization be halted, but it does require that it continue to provide the flexibility to accommodate changing agency requirements.

SSA's Plans for Using IWS/LAN Technologies

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The Social Security Administration is planning to move from a computing system centered on large mainframe computers to one that relies more on smaller personal computers. This strategy is being pursued by most companies in the private sector, as well as other federal agencies. For several reasons, a system based on personal computers promises to provide a more cost-effective and responsive infrastructure for the agency's operations. However, the full benefits of the proposed new hardware will not be realized without the development of software that implements the many SSA functions that are still performed manually or are only partially automated.

SSA SYSTEMS PLANS

Trends in Computer Technology

In the past, large organizations such as SSA typically built their data-processing operations around expensive mainframe computers. These large computers were at the hub of a network of terminals located throughout the organization. Terminals look just like today's personal computers, with a keyboard and a display, but have limited processing power of their own. They are used by employees in the field to enter data for transmittal back to the mainframes, which then do all the necessary processing, access databases, and send a response back to the terminal. In the case of SSA, 39,000 terminals in 1,300 field offices are connected to mainframe computers at the National Computer Center at SSA headquarters in Baltimore, MD.



Today, many organizations are moving away from an environment in which all processing is centralized at the mainframes.1 Instead, they are using distributed or cooperative processing in which more of the processing is done at the employee's desktop. The "dumb terminals" are replaced by personal computers with considerable processing power of their own. Personal computers are built around microprocessors—small silicon chips with the power of mainframe computers of a decade ago. While early personal computers were usually used by themselves, they are increasingly being integrated into an organization's data--processing operations, linked to each other and to mainframes or other specialized computers through high-performance networks.

There are two main trends that explain why organizations are choosing to rely less on mainframe computers to do all their processing. First, for some types of applications, personal computer technology is a more cost-effective source of processing power than mainframe technology. In many cases, it may be less expensive for an organization to add capabilities at the user's desktop than to upgrade the costly mainframe computers in the data center. Second, computer network technology has advanced to the stage where computers at widely separated locations can quickly exchange data and work together to solve a problem. There is no need for all of the processing power and data to be in one central location; the data and programs needed to solve a problem can be located where it is most cost-effective.

A distributed system that relies on personal computers has other benefits. First, there is considerable competition in the high-volume market for personal computer hardware and software, which brings prices down. Second, many analysts believe that software for the new distributed systems can be developed at a lower cost and more quickly, allowing organizations to make changes rapidly and take advantage of new opportunities. Third, the processing power at the user's desktop can be used to support graphical user interfaces that are user-friendly. Potentially, several applica- i ions can use a similar user interface, reducing the time required to train employees to use new applications.

Personal computer-based systems can also introduce fundamentally new types of applications into an organization. Imaging technologies, for example, area promising development for organizations that manage large volumes of documents. Most personal computers are equipped with high-resolution displays that can show detailed images. When documents are stored in electronic form as images, they take up much less space than their paper equivalents and can be accessed more quickly. While image-related applications still strain the microprocessor and memory technologies of today's personal computers, many believe that they are quickly becoming cost-effective. SSA has also been looking at other new types of applications, such as electronic mail, facsimile, online manuals, and expert systems to assist in evaluating claims.

Most organizations with data-processing needs similar to SSA's are planning to move from mainframe-centered systems to distributed systems. The computer industry trade press devotes considerable space to articles about a type of distributed processing called "client-server" computing. Servers are usually powerful machines that perform functions for several "clients' '-even when processing power is distributed, there may be reasons to centralize some functions at a few computers. For example, a program executing on one computer, the client, may request data from a second machine, called a "database server," that handles accesses to a centralized database. Main-

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1See, for example, peter Nulty, "When To Murder Your Mainframe, " *Fortune*, Nov. *1, 1993,* pp. 109- 120; Laurie Hays, "IBM Tries To Keep Mainframes Afloat Against Tide of Cheap, Agile Machines," *Wall Street Journal,* Aug. 8, 1993, p. B I; "How 1S Can Answer Corporate Needs With Client/Server Computing," *Datamation*, vol. 39, No. 12, June 15, 1993, p. S2.

frames may evolve into database servers: they will no longer handle an organization's entire processing load, but will manage the database for a network of personal computers.[2]

While there are several reasons why distributed processing is considered to be the architecture of the future, there are also concerns associated with managing the transit ion from mainframe-centered systems. One problem is that millions of dollars have been invested in mainframe-based systems: organizations would like to preserve as much of this investment as possible. In addition, designing and programming distributed systems may demand new skills of systems employees. Finally, the new distributed systems are, in some ways, more complex to design and manage. Among the new concerns are questions of security and reliability in an environment where data and processing power are no longer under central control in a computer center. Despite these uncertainties, many organizations believe that distributed systems are the systems design of the future, and that early deployment allows them to begin gaining experience with the new technologies.

SSA's Existing Computer System

Today, SSA uses a mainframe-based system that connects about 39,000 terminals to the mainframes at the National Computer Center at SSA headquarters in Baltimore.[3] These terminals are located in approximately 1,300 field offices throughout the United States. Terminals are also used in the 37 teleservice centers that serve callers contacting the agency through its toll-free telephone number. The terminals are connected to the mainframes through an extensive data network, SSANet. Software executing on the mainframes controls the terminals, generating text on the terminals' displays that leads SSA employees through the processing of a claim. In response to these prompts, the field representatives or teleservice representatives enter data. The data travel back through the network to the mainframes, and then are processed or stored in one of the agency's databases.

In addition to the terminals, the field offices also have a limited number of personal computers that are used for word-processing and other office automation functions. These are stand-alone machines, not part of the mainframe-based system used for processing claims and for other programmatic functions. Because most offices have only one or two personal computers, shared among all employees in the office, SSA field representatives currently have to leave their desks in order to use one of the personal computer-based applications.

The current SSA computer system is, in many ways, typical of large data-processing operations. It reflects the longstanding dominance of International Business Machines (IBM) in mainframe-centered computing: the mainframes are IBM products, and the programming languages, operating systems, and network protocols are typical of those used in an IBM mainframe environment. For example, the network uses IBM's Systems Network Architecture (SNA) protocols, not the more "open" Transmission Control Protocol/Internet Protocol (TCP/IP) or Open Systems Interconnect (OSI) protocols available from multiple vendors. SSA software is written in Common Business-Oriented Language (COBOL) or Customer Information Control System (CICS), languages rarely used by programmers developing software for newer personal computers, minicomputers, or workstations.

The current SSA system has been pieced together over several years at a cost of several billion dollars. The major initiative was the Systems Modernization Plan of the mid-1980s, which modernized the mainframe computers, upgraded the storage hardware for the agency's databases, and saw the installation of terminals in SSA field

[2]Steve Lohr, "Present at the Transition of IBM," *New York Times*, Oct. 26, 1993, p. D1; Laura B. Smith, "Mainframes Hang On," *PC Week*, vol. 10, No. 33, Aug. 23, 1993, p. 87.

[3]For a description of SSA's computer systems, see Social Security Administration, "Information Systems Plan," September 1993.

offices. As a result of this initiative, SSA was able to stabilize its systems operations and improve several aspects of its operations.[4] The basic claims-taking for retirement (Title II) has now been automated, Social Security numbers can now be obtained in less than a day, earnings records are updated in a timely fashion, and the agency has been able to institute 800-number service.

While SSA's computer systems have stabilized, there are still important shortcomings. First, SSA has only moved part of the way to a full online system in which transactions are processed as they are entered. Several functions are still processed in batch mode overnight, which prevents SSA employees from verifying information as it is entered or completing the processing of a claim in a single session. In addition, the agency maintains separate databases for each of its programs, preventing a "whole person" view of SSA clients.[5] In its recent management report, the General Accounting Office (GAO) noted that this was a major shortcoming.[6] Finally, like other large organizations, SSA has a considerable amount of older software that has been criticized as poorly documented and maintained.

Another serious problem is that many of the objectives of the Systems Modernization Plan for automating SSA business processes have not been achieved—many agency functions remain largely paper-based. Of the three major SSA programs—retirement, supplemental security, and disability---only the retirement program has been significantly automated. Even for the retirement program, however, more complicated cases frequently cannot be processed to completion in the computer system, and require manual intervention. Software that would automate claims-taking for the more complex Supplemental Security Income Program has been completed only recently, and its deployment has been limited by a shortage of terminals in the field offices and mainframe capacity.

The complicated disability program has been automated only to a very limited extent. For each applicant, a large paper file of forms and medical evidence is assembled by various components of SSA, state disability offices, and doctors who provide medical evidence. Today, the claims-taking is done in SSA field offices using paper forms. Once the file has been compiled, it is mailed to the appropriate state disability office, which then gathers medical evidence and adjudicates the file. The level of automation and type of computer hardware vary from state to state.[7] There is also no uniformity in the software packages used by the states and only limited connectivity between the state computer systems and the SSA computer system.[8]

IWS/LAN—Technologies

SSA intends to move from its current mainframe-centered environment to one that makes greater use of distributed processing.[9] The foundation for this transition is the proposed purchase of 95,000 personal computers, to be installed over several years between now and 1999. The mainframe computers will continue to play an important role in SSA computing, but the dumb terminals will be replaced by more powerful and flexible personal computers. These personal computers will be located throughout SSA, linked to each other and to the mainframes by local area networks and SSA-

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[4]Ibid., pp. *1-6, 1-7.*

[5]Ibid., p. 3-49.

[6]U.S. Congress, General Accounting Office, *Social* Security: *Sustained Effort Needed To improve* Management and *Prepare for the Future*, GAO/HRD-94-22 (Gaithersburg, MD: October 1993), p. 39.

[7]SSA, op. cit., footnote 3, pp. 3-44, 3-45.

[8]Ibid., pp. 3-45, 3-48.

[9]Ibid., pp. 4-30, 4-31.

Net. The initiative is called the IWS/LAN project; IWS refers to *intelligent workstation* (SSA's term for personal computers) and LAN to *local area network.*

The computers are intended to standardize computing throughout the agency. Computers like those that will replace the dumb terminals in the field offices will also be deployed in the state disability offices, processing centers, and other locations within the agency. Currently, there is little uniformity in agency computing—for example, about 1,500 users at headquarters use a UNIX-based system. A variety of systems are used by the states, although the majority use Wang products. SSA believes that a standard hardware platform will allow the agency to standardize software packages, improve inventory and contract management, and simplify the development of applications linking several parts of the agency.

The new personal computers will provide a more flexible computing platform than the dumb terminals they replace. SSA employees will be able to use the same mainframe-based programs that they currently access through the dumb terminals, but the personal computers will provide additional capabilities. First, the programs that previously ran on the stand-alone personal computers will now be available at each employee's desk. Second, the user will have access to a variety of new programs, such as an electronic version of the agency's regulations and procedures. Third, the personal computers will allow the user to access several programs at the same time in separate windows on the screen. Finally, the personal computers will have a graphical user interface, replacing the characters-only interface of the dumb terminals.

However, it should be emphasized that it will be some time before IWS/LAN significantly changes the way SSA employees handle agency business. The public will not see the benefits of automat ion until SSA develops the software needed to support its programs. IWS/LAN only provides the hardware platform for this programmatic software. Software for many of the agency's major programs still needs to be developed, especially in the disability program. In some cases, the development of good programmatic software will first require the rethinking of the agency's business processes. Even for those SSA programs that are already automated, work will have to be done to take advantage of the IWS/LAN computers' new capabilities.

It should also be emphasized that the IWS/LAN project will not fix all of SSA's systems problems. IWS/LAN encompasses only the deployment of personal computers and associated LAN hardware. Other key projects, such as the modernization of the agency's databases, are outlined in SSA's Information Systems Plan or in the tactical plans of the Agency Strategic Plan, but are not considered part of IWS/LAN. IWS/LAN is integral to the agency's efforts to continue upgrading its systems, but is only one component. Progress will require sustained attention to the entire SSA systems infrastructure, as outlined in the agency's Information Systems Plan.

IWS/LAN Hardware

The intelligent workstations that SSA plans to deploy are personal computers that use microprocessors made by Intel Corp. [10] SSA's use of the term *intelligent workstation* may cause some confusion because the computer industry typically uses the term *workstation* to refer to a more powerful class of desktop computers, typically built around a different type of microprocessor and incorporating a higher resolution display than is commonly used with Intel-class machines. Intel-class personal computers have been produced since the early 1980s and have the largest market share of desktop computers. Every few years, a more powerful version of these computers arrives on the market, but each generation is compatible with older versions--old software can still be

[10] Details of the IWS/LAN configuration can be found in Social Security Administration, "System Zero," June 2, 1993 and Social Security Administration, "The Interim Acquisition," June 2, 1993.

used with the faster processors. The generation that SSA plans to acquire is referred to as a "486" machine; a more advanced generation has now reached the market, but is considerably more expensive.

The personal computers in each field office will be linked together by local area networks. As with the personal computers, the network technology that SSA plans to use is proven and widely used. SSA intends to use "token ring" local area network technology, one of the two most widely used types of local area networks available today. Both the token ring networks and the other prominent LAN technology, Ethernet, are industry standards, but the token ring format has been closely associated with a single company, IBM, and is typically used in business environments that have an installed base of IBM equipment. As part of the IWS/LAN project, SSA will buy the LAN hardware, which is electronic circuitry installed in the personal computers that converts computer data to the format expected by the network and provides a connection between the computer and the cabling. SSA will also install new cabling throughout the field offices, teleservice centers, and other facilities.

The local area networks will allow employees to share data and exchange electronic mail messages. They will also provide access to printers and "servers," specialized computers shared among all network users. One example of a server will be the CD-ROM[11] server that will be used to access an electronic version of the agency procedures manual. Another important component of the network will be a bridge that will connect the local area network in each field office to the agency's network, SSANet. If, for example, a field representative entered data for a retirement insurance claim at a personal computer, the data would travel from the computer, through the local area network to the bridge, and then through SSANet to the mainframes in Baltimore.

IWS/LAN Software

Another important component of the IWS/LAN system will be the system software. SSA has to make decisions about the operating system for the computers on its representatives' desks and for the servers. There is considerable uncertainty in the market for operating systems, as major software developers have recently introduced new products specifically tailored for today's more powerful computers.[12] In a pilot configuration, SSA has been using DOS and Windows™, but it is looking at newer operating systems for future deployments. Also included in the system software is a "network operating system," which coordinates the computers on the network, and "network management" software. SSA plans to monitor the operation of the IWS/LAN system using an IBM network-management product. The agency believes this will allow operations to be controlled centrally by the National Computer Center, avoiding the need for specialized technical personnel in each field office.

The applications programs that SSA plans to deploy on IWS/LAN fall into several categories. First, the agency will acquire commercial, off-the-shelf software for word-processing, spreadsheets, and electronic mail. Second, each employee will be provided with copies of SSA-developed PC software now found on the stand-alone personal computers in each field office. Third, SSA is developing several new applications that assist SSA employees. One example of this kind of software is the 800-number expert system that leads teleservice representatives through a series of scripts that provide answers to telephone inquiries. SSA believes that use of this program will result in more consistent responses to caller inquiries and will be especially valuable to new teleservice representatives.

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[11] CD-ROM (compact disc.read only memory) systems use the vast information-storage capabilities of compact disks to store computer data.

[12] Laurie Hays, "Computer Giants Duel Over Operating Systems." *Wall Street Journal, Nov. 30, 1993,* p. B1.

The most important component of SSA software development is the programmatic software. It is important to note that this work is being done in-house as part of the regular information systems budget. For programs that are already automated—retirement and supplemental security—SSA will use the existing mainframe software for the foreseeable future. The personal computers will be used as if they were the old terminals: special software on the personal computers allows "terminal emulation." The terminal emulation strategy permits an easier transition to the new hardware, reducing risks and preserving the large investment in the existing software. It also requires only limited software development resources.

Terminal emulation does not, however, take full advantage of the new IWS/LAN platform. Over time, SSA will have to write new software. The first step will be to continue to use the mainframes for most of the processing, but to write new software for the personal computers that will replace the existing character-based input screens with new graphical input screens. In the long run, more of the processing will be done by the personal computers. The agency envisions that the mainframes will gradually evolve into database servers—they will manage the databases and provide data in response to queries from programs running on the personal computers. This evolutionary strategy is typical of most organizations making the transition to distributed computing systems.

At the same time, the current focus of software development at SSA is on software for the disability program, which is currently not automated. This software is being written specifically for the new IWS/LAN system; there will be no mainframe version. Over 100 developers at SSA are working on this project, the Modernized Disability System (MDS). MDS will automate all of the major steps of the existing process. The paper forms will be replaced by an electronic record for each applicant, and as much of the medical evidence as possible will be maintained in electronic form. Instead of mailing the record to a state disability office, it will be transmitted electronically. Computer support in the state disability offices will assist in maintaining records, requesting medical evidence, and adjudicating cases. The first release of MDS is expected to be completed in mid-1995, and will be pilot-tested in time for full-scale deployment in 1996.

Development of IWS/LAN

SSA has been evaluating the IWS/LAN technologies since 1990. Several factors contributed to the move to the new technologies. First, the agency had begun to plan for the steps to be taken when the dumb terminals deployed beginning in 1986 began to reach the end of their systems life. The original estimated systems life for this hardware was 5 years, although the first terminals deployed have now been in service for 7 years and appear to be functioning satisfactorily.

Second, by 1990, most organizations with data-processing needs similar to SSA's had begun to move toward the wider use of networked personal computers. This was reinforced by a 1990 report from the National Academy of Sciences that recommended that the agency consider a move to distributed processing. The Academy pointed out a number of weaknesses *in* the existing centralized architecture, and called for SSA to "retain the present centralized database architecture but plan for the introduction of 'intelligent' workstations providing increased local support to the users of the system and embodying a common user interface for performing any agency function."[13]

Third, the agency was getting ready to begin automating the Supplemental Security Income program and was beginning to consider the appropriate platform for this effort. Recognizing the aging of the old architecture and the technological changes behind the National Academy of Sciences' recommendation, the agency analyzed

[13] National Research Council, *Systems Modernization and the Strategic Plans of the Social Security Administration* (Washington, DC: National Academy Press, 1990), p. 5.

whether it was appropriate to support the SSI modernization by buying additional dumb terminals. In fact, the initial deployments of IWS/LAN equipment are considered to be part of the SSI modernization program.[14]

During 1990, a number of different system designs were considered. At least two were clearly viable—a UNIX-based system and an Intel-based system. SSA selected the Intel/token ring configuration, chiefly on the grounds of compatibility with the installed base of IBM equipment in the agency's systems. SSA then began a program of experimentation with a test system installed at the National Computer Center, referred to as "System Zero." After the agency had gained experience with the technology using System Zero, it was then deployed to 10 pilot field offices. The IWS/LAN equipment has been operating successfully in these offices as part of day-to-day SSA operations since the middle of 1992.

IWS/LAN--Costs and Schedules

The IWS/LAN project envisions the purchase of about 95,000 personal computers to outfit all of SSA's operations—about 14,000 to the state disability offices and the remaining 81,000 to all parts of SSA. [15] The proposed number of personal computers is more than twice the number of terminals currently deployed because IWS/LAN will be deployed in more locations than just the field offices. The personal computers and local area networks will be deployed between 1995 and 1999 in two phases. The deployment schedule is still undergoing revisions; in early versions, SSA planned to outfit the field offices in the first phase and the remaining SSA offices and the state disability determination services in the second.

Funding for IWS/LAN will come from several sources. The regular Information Technology Systems budget funded the acquisition of about 3,000 personal computers for state disability offices in FY 1992.[16] An additional 9,000 computers will be funded by the "interim acquisition," a $65-million purchase of computers, network hardware, systems software, and off-the-shelf applications software. [17] Another important component of the IWS/LAN project, the development of the programmatic software, will also be funded through the regular information systems budget. However, the bulk of the IWS/LAN deployment was to be funded by the Automation Investment Fund (AIF), $1.125 billion in no-year funding that was to be used to supplement the regular information systems budget over a 5-year period, in part to facilitate the deployment of IWS/LAN equipment. For comparison, the SSA Information Technology Systems (ITS) budget was $253 million in FY 1993.

Not all of the funding in the AIF was intended for IWS/LAN. Only about $500 million of the $1.125 billion was to fund personal computers, network hardware, and associated software. A total of$313 million was to fund other information technology expenditures that have not been specified at this time, and $307 million was to fund ergonomic furniture to be installed in the field offices before the IWS/LAN computers were deployed. The ergonomic furniture is required under the terms of an arbitrator's decision. In the FY 1994 budget process, Congress appropriated $300 million, not the full $1.125 billion; the $300 million figure is approximately the amount that SSA had intended to obligate from the fund in FY 1994.

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[14] The "interim acquisition" of 9,000 personal computers, Of which 5,300 deployed to the field offices are considered part of SSI modernization.

[15] SSA, op. cit., footnote 3, p. 6-22.

[16] SSA, Deputy Commissioner for Systems, "Cooperative 1.2 Tactical Plan," Jan. 26, 1993, p. 4.

[17] Gwendolyn S. King, Commissioner, Social Security Administration, Memorandum to Deputy Assistant secretary for Information Resources Management, Department of Health and Human Services, Jan. 13, 1992.

The initial deployments are being funded primarily under the interim acquisition. Site modifications at 90 field offices are underway to prepare them for deployment of personal computers and local area networks in 1994. In addition, several state disability offices will be provided with equipment from the 3,263 computers funded in FY 1992. The deployment of computers to the state offices is not considered to be part of the full national deployment of IWS/LAN to be funded by the AIF. Instead, these deployments are considered to be an interim effort to provide low-level, baseline automation to states that currently have no computer support, or only minimal support. The software that will be used is not the full Modernized Disability System that is scheduled for deployment in 1996, but adaptations of software already in use by other states.

ANALYSIS OF IWS/LAN TECHNOLOGIES

In many ways, SSA's plan to purchase thousands of personal computers represents an encouraging sign—an effort to keep up with the state of the art in computer systems. In the past, particularly in the early 1980s, SSA fell behind technology developments until it found itself with overburdened and obsolete equipment. In part, a new focus on staying current may have led to a technology-centered planning process dominated by the systems component of SSA. There has been considerable concern that the technology planning has not been adequately integrated into overall SSA planning; this is discussed further in the next section and in chapter 3.

Transition to a Distributed System

SSA's decision to proceed with the development of a distributed computing platform is consistent with the plans of large private-sector corporations with similar data-processing needs. Most insurance companies, banks, and airlines began to move away from mainframe/terminal configurations in the late 1980s; the question of how best to manage this transition is a major topic in the trade press for corporate information systems professionals. Moreover, by developing the IWS/LAN system, SSA is following the advice of a National Academy of Sciences panel, which recommended that the agency move to a "distributed system, with mainframe computers serving as the hub of the system," combined with "local intelligent workstations to support service agents."

Once SSA decided to move to a distributed system, it had to choose from several possible architectures. It appears that the IWS/LAN configuration selected by SSA is solid and proven. The computing power that is being purchased is appropriate for SSA's needs in the medium term, supporting current applications and allowing sufficient room for the development of new programmatic software. The type of personal computer and LAN hardware that SSA has chosen has been proven in other organizations over several years—Intel-class computers are dominant in the marketplace, and token ring networks have a significant installed base. The choice of operating systems will be more difficult, however, as there is considerable uncertainty in the market while vendors try to position new products. '8

Questions could be raised about some aspects of SSA's systems design. For example, much of the reasoning that led to the configuration chosen by SSA reflects the agency's large installed base of IBM equipment. Other organizations moving to client-server architectures have relied to a greater degree on open systems; a UNIX-based system was one of the two architectures supported by the National Academy of Sciences panel (the other was the architecture eventually chosen by SSA). In analyzing the competing designs, the ease with which equipment could be integrated with IBM network protocols and network management packages contributed heavily to the favorable score for the system chosen.

Questions have also been raised about the choice of the token-ring local area network over

[18]"Betting on the server," *InformationWeek*, Nov. 15, 1993, p. 68.

the alternative, Ethernet. Ethernet has a larger market share and is significantly less expensive.[19] The cost differential is due, in large part, to the fact that token ring development has been controlled by IBM, which dominates the market for token-ring local area networks. However, these networks do have technical characteristics that some users, particularly large organizations with mission-critical applications, believe justify the cost differential.[20]

Risks Associated With IWS/LAN

The basic architecture chosen by SSA should minimize the risk that there will be cost overruns or delays due to the technology. While trying to keep up with industry trends, the agency will not beat the leading edge with its attendant risks. The IWS/LAN project uses common industry equipment; the personal computers and LAN hardware are commodity items with millions of users in industry, homes, and government. The agency has avoided a common mistake of some federal agencies that have purchased nonstandard equipment because of perceived special needs. The transition plan, which envisages the continued reliance on mainframes and existing programmatic software, could be more aggressive, but again minimizes risk—the agency is trying to reuse what it already has in place.

SSA has proceeded in a measured fashion to learn about alternative technologies, conduct experiments, and pilot-test the technology. The pilots have now been operating in 10 offices for over 1 year, and appear to be stable, operating reliably, and well received by employees. However, there are still questions related to problems that may arise when the technology is deployed on a larger scale. The relatively small number of pilot sites may not adequately test all of the potential problems that could arise when the equipment is deployed to 1,300 sites throughout the organization. In particular, the agency will have to carefully monitor the management requirements as the IWS/LAN system grows larger. SSA believes that it is possible for the system to be centrally maintained by the National Computer Center in Baltimore, MD, without the need for specially trained system managers in each of 1,300 SSA locations.

Flexibility of IWS/LAN Technologies

In part, the successor failure of SSA's systems design depends on the degree to which IWS/LAN will be able to accommodate future needs and avoid the need for a costly systems redesign for as long as possible. The IWS/LAN technologies have large installed bases and will likely be supported for several years—they are not unique to SSA and are unlikely to be orphaned. Given the large installed base, vendors are also likely to provide upgrade paths for IWS/LAN-type equipment—a more powerful generation of computers compatible with the type that SSA has selected is already on the market. In other words, IWS/LAN will establish an architecture for SSA: a systems design that will allow individual components to be replaced as demands change, but will not require an entirely new system. For example, to buy hardware with the capability to handle image-based applications at this time would likely not be cost-effective. However, as computers get more powerful and networks more capable, SSA should be able to upgrade the components of IWS/LAN to provide image-handling capability without changing the overall systems design.

Another part of the infrastructure will be the technical skills of SSA's Systems employees. The Information Systems Plan recognizes that many new skills will be required as the agency moves from a mainframe-centered environment to one that is based on personal computers and local area networks.[21] Several new technologies will be introduced at once, each demanding new trouble-

[19] Margie Semilog, "Can Token-Ring Still Compete?" *CommunicationsWeek, No. 467,* Aug. 16, 1993.

[20] Cheryl Krivda, "Token Ring: A New Beginning," *LAN Magazine, vol. 8, No. 9,* September 1994, p. 123.

[21] Social Security Administration, op. cit., footnote 3, pp. 7-23, 7-24.

shooting and systems administration skills. In addition, software development for the new platform will require familiarity with new programming languages and operating systems.[22] SSA plans to meet these needs mainly by retraining existing employees, partly because of budget constraints on new hiring. SSA will have to ensure that training budgets are adequate to support the development of the skills that will be needed to fully utilize the IWS/LAN equipment.

SSA's JUSTIFICATIONS OF IWS/LAN

Despite the fact that SSA's strategy appears to be workable technologically, it still has to be justified from a business standpoint. Justifying any information technology purchase is a difficult task because the benefits often lie in the future, are difficult to measure, and are subject to disputes over underlying assumptions. Typically, in the private sector, both financial and nonfinancial factors are weighed in determining whether to proceed with an investment. Financial analyses place an emphasis on determining the rate of return on the information technology investment, comparing costs with benefits such as reductions in the cost of doing business. Nonfinancial factors include such objectives as cutting product-development time or improving customer service. SSA has proceeded in a similar fashion in justifying IWS/LAN, conducting a cost-benefit analysis and also justifying the investment on other, nonfinancial grounds.

SSA's Cost-Benefit Analysis

SSA has justified its IWS/LAN purchase using a cost-benefit analysis performed during the course of the pilot tests conducted in 1992.[23] In conducting this analysis, SSA measured the time required to perform certain functions both before and after the installation of the IWS/LAN in the pilot offices. SSA estimated that about 2,000 workyears would be saved in the field offices over the life of the equipment, translating into cost avoidance of about $750 million. By comparing this figure with the estimated life-cycle cost of$315 million, SSA estimated cost savings of $450 million, or a cost-benefit ratio of 2 to 1.

These data would indicate that IWS/LAN is probably a cost-effective replacement for the dumb terminals as they approach the end of their useful life. Drawing any further conclusions is difficult because the agency did not use the pilot tests to explore changes in the way the agency does business. Each dumb terminal was replaced with a personal computer, which was used in terminal emulation mode with the same programmatic applications as before. The increased processing power of the personal computers was not used to any great extent—the field representatives used the computers as if they were terminals, and performed their jobs in much the same way. In fact, over half of the workyear savings found in the cost-benefit analysis were due to the fact that SSA employees no longer needed to walk from their desks to one of the shared personal computers, as they were required to do in offices equipped with dumb terminals.

It will be some time before SSA uses IWS/LAN in a way that significantly improves the quality of service delivered to agency clients. True improvements will require continued progress on the development of software to implement SSA programs. The IWS/LAN hardware alone does not provide service improvements of the kind that would be significant to clients. For example, SSA estimated, in "Track 2" of the pilot evaluation process,[24] that IWS/LAN hardware with today's programmatic software decreased the average wait-time at the Mondawmin pilot office in Baltimore by only 6 minutes, from 34 minutes to 28

[22]Peggy Wallace, "Client Server Computing Requires Top Corporate Developer Training," *InfoWorld*, vol. *15*, No. *45*, Nov. 8, *1993*, p. 64.

[23]Social Security Administration, "Field office, PSC & TSC Benefits From IWS/LAN," June 2, 1993.

[24]SSA, "The Social Security Administration Analysis Methodology of the Performance & Benefits From the Distributed Data Processing Pilots," Jan. 17, 1992.

minutes.[25] The package of software that SSA has in place for IWS/LAN at this time is significant, but does not have an appreciable impact on the level of service provided to the agency's clients. The first project that may significantly improve client service is the Modernized Disability System software, but its deployment is not scheduled to begin until mid-1996.[26]

It should be recognized that SSA's cost-benefit analysis applies only to a subset of the 95,000 computers that the agency plans to acquire. It is valid only for the replacement of the dumb terminals in the field offices and the teleservice centers, which represents about one-half of the total of 95,000. No similar analysis has been done for the computers to be deployed in the state disability determination services, some federal offices that are part of the disability process, and administrative components of the agency. Offices that are part of the problematic disability determination process may have significantly different roles in the future, which may argue against early deployment to these locations.

SSA's Other Justifications: IWS/LAN as Infrastructure

As noted above, the new IWS/LAN hardware by itself does little to improve the quality of service delivered to SSA clients. SSA contends that the computers and local area networks constitute an infrastructure that will provide a foundation for future performance improvements, and that this factor should be taken into account when evaluating IWS/LAN. While SSA is not currently in a position to take full advantage of the technology, the agency believes that it will be able to add new capabilities, such as the Modernized Disability System, once the hardware is in place.

The key problem for SSA in arguing that IWS/LAN is infrastructure is that the benefits and costs lie in the future. The agency is currently unable to demonstrate real improvements in the service delivered to agency clients. GAO has expressed concern that these benefits will not materialize. At the same time, because IWS/LAN is only one part of the information systems investment needed to achieve better performance, there is concern that costs have been understated, GAO has estimated that the total costs over the next 5 to 7 years could be $5 billion to $10 billion,[27] far higher than the $1.125 billion requested for the Automation Investment Fund. According to SSA's IWS/LAN tactical plan, "IWS/LAN is designed to build an infrastructure and, as such, is principally a cost producer, necessary to achieve the benefits of many related initiatives being designed to operate on this platform."[28]

All information technology deployments will have aspects of infrastructure—the hardware will be deployed with the intent to add components over time. Some capabilities will be available as the equipment is first deployed; others will be added as limited organizational resources permit their acquisition or development. This is demonstrated by SSA's current software development strategy: an initial emphasis on MDS, with other projects to follow. Ideally, before the computers are deployed, SSA would be further along with efforts related to using the new infrastructure and be able to demonstrate how it plans to improve client

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[25] SSA, op. cit., footnote 23, p. 16.

[26] SSA, op. cit. footnote 3, p. 5-5.

[27] General Accounting Office, op. cit., footnote 6, p. 5. Elsewhere in the report, GAO states that "SSA has not fully identified the costs and benefits of implementing its modernization effort. This effort includes 159 initiatives and we believe could cost from $5 billion to $10 billion through fiscal year 2005."

[28] SSA, op. cit., footnote 16, p. 20. Additional costs will come from a variety of sources. In the medium term, there are costs associated with the development of the new software that will use IWS/LAN. SSA has plans to update the software in all of its major business areas, and has instituted a major effort to provide automation for disability claims, the Modernized Disability System (MDS). Attempts have been made. at least in some contractor documents, to look at these costs. Also in the medium term, there are hardware costs, such as upgrades to the mainframe computers or network capacity. In the longer term, SSA has plans to distribute its database and move to a greater extent to imaging technologies.

service. SSA should be able to pursue an aggressive program of trials and experimentation before embarking on the time-consuming development of production software. The results of these experiments would create greater confidence that the IWS/LAN technology will improve agency operations.

In addition, the agency should create a more comprehensive planning package that ties together the disparate elements of the IWS/LAN project and clearly shows the agency's concept of how the new infrastructure will be used. One problem, for example, is that the software projects that are key to the success of IWS/LAN are not included in the $1.1 25-billion Automation Investment Fund that will be used to buy the hardware. A comprehensive package, describing both software and hardware configurations, timelines, budgets, and performance goals for each SSA program, would also help allay fears that the agency is underestimating the cost of IWS/LAN and would provide a yardstick to measure the progress of the project. In addition, the package could outline the experiments that SSA is conducting to explore future uses of IWS/LAN, such as the paperless pilot test in Chicago.[29]

ANALYSIS OF SSA JUSTIFICATIONS FOR IWS/LAN

SSA believes that its information systems spending over the past decade has allowed it to process growing workloads with significantly fewer staff. It can also point to significant improvements in some processes—for example, Social Security numbers are now issued overnight, whereas a few years ago the same procedure took 6 weeks. Still, quantifying the benefits of information technology spending has proven to be difficult. One book on the use of computers by business states that ● 'there is no relationship between expenses for computers and business profitability."[30] Some economists have argued that there is no clear evidence that new technologies have raised productivity or profitability, despite the rapid advances in information technology over the past decades. Top managers in both the public and private sectors no longer take the potential benefits of technology investments on faith, and are increasingly demanding more solid justifications for their organizations' growing expenditures on information technology.

IWS/LAN and Reengineering

There is a growing consensus that information systems purchases will only have an adequate payoff if careful attention is paid to their application.[31] In the past, it was implicitly assumed that information technology would automatically reduce staffing requirements, cut costs, and reduce the time required to complete tasks. In some cases, this may have been an accurate assumption: SSA's dramatic improvement in the time required to issue Social Security numbers may be an example of such a process. In other cases, however, adding computers to the process does not appear to have made much difference.

Researchers have looked at successful information systems projects to determine the factors that contribute to solid payoffs. One emerging theory is that an organization that is taking best advantage of information technology will operate in different ways from one built around moving paper. If organizations have not seen adequate payoffs from past information technology projects, it is because the technologies have been incorrectly applied. Stated another way, information technology is the newest tool available to management; ways of doing business that were developed be-

[29] SSA, op. cit., footnote 3, pp. 3-49, 4-87, 4-88.

[30] Paul A, Strassman, *The Business Value of Computers* (New Canaan, CT: The Information Economics Press, 1990). P. xvii.

[31] Thomas H, Davenport *Process Innovation: Reengineering Work Through Information Technology (Boston,* MA: Harvard *Business* School Press, 1993), Michael Hammer, "Reengineering Work: Don't Automate, Obliterate," *Harvard Business Review*, July-August 1990, pp. 104-1 I 2.

fore the advent of information technology should be rethought to take advantage of these new tools. If information technology is simply applied to existing ways of doing business, the potential for payoffs is much smaller.

The restructuring of ways of doing business is referred to as *reengineering* or *process innovation.* It has become a common topic in the management and information systems literature, and management consulting firms now advertise their reengineering services. A key tenet of the reengineering theories is that organizations have to be willing to radically restructure their business practices; incremental change is not enough. Proponents of reengineering believe that organizations should be able to achieve dramatic performance improvements by using information technology, not just incremental improvements. They cite examples of companies that are able to complete a process in a fraction of the time previously required. In many cases, these examples involve insurance or credit companies that perform tasks that are similar to those of SSA—the processing and evaluation of claims.[32] In justifying IWS/LAN through its cost-benefit analysis, SSA has emphasized that it will be able to maintain current service levels as the workload grows or staffing declines. Until recently, there had been no effort to achieve more significant improvements in the service delivered to clients.

In late 1993, in response to GAO criticisms of its justifications for IWS/LAN, SSA established a reengineering task force to look at the agency's most pressing problem, the disability determination backlog. The disability process bears many of the indicators of a process that needs to be rethought. Currently, there are many stages in the process, complex federal-state interaction, and the participation of several players. Only a small fraction of the time between filing a disability claim and award or denial is spent actually working on the file. Most of the 100 days or more required to process an application involves time spent sending the file from one place to another, waiting for the next stage in the processing, and waiting for replies from medical examiners.

Other SSA programs may not require the same type of rethinking. Compared with the disability determination process, the SSI or retirement insurance processes are less complex, and a sustained effort to complete the automation of these functions may yield significant benefits. Today, the most time-consuming aspects of retirement claims involve special cases that cannot be handled by the software that is currently deployed. In its 1990 report, the National Academy of Sciences emphasized the significant benefits that could be achieved by completing this software.[33] The first versions of the SSI software are now being deployed, and the agency should soon be in a position to evaluate its performance.

IWS/LAN and Service Delivery

While much of the rhetoric of reengineering is new and the tradeoffs involved in its application to an essential public sector program uncertain, one of its basic principles is well known: information systems spending should be driven by a clear idea of the process that is to be supported and its performance objectives. In its 1991 report, the National Academy of Sciences panel that looked at SSA automation wrote that "technology itself must not drive systems evolution"[34] and that "technology must be chosen based on its ability to help fulfill the agency's goals." More recently, GAO has stated that "the lack of a long-term business strategy has forced SSA to focus its technol-

[32]Mutual Benefit Life reduced the time required to process insurance applications from 5 to 25 days to 2 to 5 days, with 100 fewer field office positions. Cited in Hammer, ibid.

[33]National Research Council, Op. cit., footnote 13, p. 35.

[34]National Research Council, *Elements of Systems Modernization for the Social Security Administration* (Washington, DC: National Academy Press, 1991), p. 22.

ogy upgrades on simply automating current, inefficient processes, rather than optimizing the benefits that automation can provide to reengineer and streamline operations. "

Chapter 3 notes that important aspects of SSA's future strategy for providing service to clients are still uncertain. Developing a more comprehensive strategy that links service objectives to information systems purchases is more difficult than simply choosing new technologies, It requires cooperation among many components of SSA, most notably between Systems and Operations.[35] SSA's systems planning has led other planning efforts-the service delivery plan has not been completed, and the reengineering task force was established only belatedly in response to GAO criticisms. This makes it difficult for the agency to show a clear linkage between its goals, the problems it needs to solve, and IWS/LAN.

Because important components of SSA planning are not complete, and because SSA is not in a position to demonstrate significant performance improvements due to the new technology, deploying IWS/LAN at this time would seem to violate the principle that an organization should have a clear idea of its business objectives before major information systems purchases are made. SSA has responded primarily by arguing that IWS/LAN is infrastructure, able to accommodate whatever changes are recommended by the planning processes currently underway.

The IWS/LAN architecture does appear to keep open many options for the future. It is built around commodity, proven hardware that is used in many different ways in private industry and government. Furthermore, the basic architecture is flexible and should permit upgrades in processing capability, memory, and display technology without changing the overall architecture. It is very likely that computer systems of the type currently specified for IWS/LAN will be an important component in delivering services to SSA clients in the future, whatever the results of the disability reengineering and service delivery planning efforts. In addition, early deployments will provide additional experience that the agency can use to plan for future deployments and applications of IWS/LAN.

However, the ongoing planning efforts do significantly impact the number of machines required and the locations in which they should be deployed. In a draft version of its service delivery plan, SSA mentioned several options for developing new kinds of offices, increasing the size of some offices, and integrating operations more closely with the state disability determination services.[36] Similar changes may result from the disability reengineering effort, including the possibility of a significant change in the state-federal relationship. These changes would clearly affect the number of computers required—the state of SSA planning raises serious concerns about the justification for buying 95,000 computers.

Furthermore, future changes in the organization could impact the locations in which the new computers are to be deployed. Even if the number of employees remains the same, they could be doing different kinds of jobs in different kinds of offices. As a result, the ongoing planning efforts affect strategies for the phasing of IWS/LAN deployments. In developing a deployment plan, the agency should carefully analyze the impact of the ongoing planning efforts and keep open as many options as possible. It is important to minimize costs that might be incurred by wiring offices

[35] Willis H. Ware Chairman, Committee on Review of SSA Systems, National Research Council, letter to Gwendolyn S. King, Commissioner, Social Security Administration, June 30, 1992, p. 15.

[36] Social Security Administration, "improving Service Delivery at the Social Security Administration: A Conceptual Proposal," Oct. 21, 1993.

that could be closed or restructured and to minimize the cost of moving computers from one site to another.

SSA is currently rethinking its strategy for deploying IWS/LAN. In the first version of its deployment plan, early deployments were to be focused on the field offices and teleservice centers. These offices had been studied as part of the cost-benefit analysis, and were believed to be relatively stable. As a result, the agency could be reasonably confident about deploying the equipment to these locations. Components of SSA associated with the disability process, on the other hand, were less stable and were generally slated to receive computers in the late 1990s. An exception to this strategy was SSA's plan to provide some states with personal computers as part of the baseline automation effort. In recent months, however, the agency has indicated that, in response to GAO criticisms, it would reorient its deployment toward field offices, teleservice centers, and state disability offices with the greatest disability backlogs and, presumably, the greatest potential for the new equipment to make an impact.

The concerns about the limited performance improvements shown to date and the current state of the planning effort have led some to suggest that deployments be delayed or drawn out until the agency is in a position to use the computers effectively during their entire systems life. By mid-1 994, the agency should have completed its service delivery plan and progressed in rethinking its disability process. However, SSA argues that its dumb terminals are quickly approaching the end of their useful lives. In the agency's view, delays in deploying IWS/LAN run the risk of hurting service delivery or incurring high repair costs, and the next-generation equipment needs to be procured and deployed as soon as possible. In addition, delays in the procurement process may result in further delays in the actual deployments. An alternative strategy would be to replace dumb terminals as needed, if in fact they are no longer serviceable, until SSA is in a position to demonstrate service improvements resulting from IWS/LAN.

Electronic Delivery of the Social Security Administration's Services

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The Social Security Administration has improved its strategic and information systems planning over the last decade.[1] But most of this planning predated the recent government-wide emphasis on reinventing or reengineering the delivery of agency services in large part through the use of information technology. SSA has long recognized the importance of computers and telecommunications in carrying out its mission and has recently intensified its reengineering and electronic delivery initiatives. Electronic delivery is one component of SSA's strategic and tactical plans, and will be addressed to some degree in the agency's service delivery plan still being developed.

The Office of Technology Assessment's (OTA's) recently released report, *Making Government Work: Electronic Delivery of Federal Services,*[2] provides a framework that can be used to review SSA's electronic delivery activities and to identify opportunities for improvement that could be included in SSA's service delivery planning. The Administration's "National performance Review"[3] (NPR), "Reengineering Through Information Tech-



[1] See chs. 3 and 4.

[2] U.S. Congress, Office of Technology Assessment, *Making Government Work: Electronic Delivery of Federal Services*, OTA-TCT-578 (Washington, DC: U.S. Government Printing Office, September 1993).

[3] Vice President Al Gore, *Creating a Government That Works Better & Costs Less: Report of the National Performance Review* (Washington, DC: U.S. Government Printing Office, Sept. 7, 1993).

nology,"[4] and "National Information Infrastructure"[5] (NII) initiatives also include numerous principles and recommendations that are relevant to SSA's service delivery planning. The full potential of the intelligent workstation/local area network (IWS/LAN) infrastructure discussed in chapter 4 can best be understood in the context of a wide range of methods for electronic delivery of SSA's services.

EVALUATING SSA's ELECTRONIC SERVICE DELIVERY PLANS

In *Making Government Work,* OTA identified seven strategic elements of successful electronic delivery. Collectively, these strategies would, if implemented, represent a considerable shift in emphasis toward a creative, innovative, citizen- or client-centered approach to service delivery.[6] Each of these strategies is discussed below with respect to SSA.

Grassroots Involvement of SSA's Customers

SSA recognizes the importance of involving recipients in plans to improve service delivery. Until recently, however, recipients' direct involvement in agency planning was largely limited to periodic user surveys conducted by the Department of Health and Human Services' (HHS) Office of Inspector General and by the General Accounting Office. The surveys focused primarily on customer satisfaction with telephone calls, office visits, and mailed or printed materials. SSA is conducting, for the first time, a series of focus groups with service recipients.[7] This is commendable and should produce useful information.

Overall, however, SSA is only at the earliest stages of developing an effective plan for recipient involvement. SSA could benefit from an annual commitment of resources to grants and contracts with recipient and advocate groups—as an integral part of the overall SSA effort to reengineer and improve service delivery. In *Making Government Work,* OTA suggests. as a guideline, that each agency spend a minimum of 0.25 percent of its annual information technology budget for grassroots involvement.[8] This would amount to perhaps $1.25 million per year for SSA (assuming an average annual information technology budget of $500 million[9]). One million dollars seems almost insignificant compared with the overall SSA automation and operational budgets. But it would stretch a long way if it were allocated among various local and national groups that directly represent SSA service recipients or provided to not-for-profit groups that are dedicated to finding ways to improve SSA service delivery—including through the use of electronic technology.[10]

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[4] National Performance *Review* Accompanying Report, *Reengineering Through Information Technology* (Washington, DC: U.S. Government Printing Office, September 1 993).

[5] Information Infrastructure Task Force, *The National Information Infrastructure: Agenda for Action* (Washington, DC: U.S. Department of Commerce, National Telecommunications and Information Administration, Sept. 15, 1993).

[6] OTA, op. cit., footnote 2, pp. 3, 17-18, 128, 131.

[7] Social Security Administration, "improving Service Delivery at the Social Security Administration: A Conceptual Proposal," first draft, Oct. 21, 1993, second draft, Dec. 30, 1993.

[8] OTA, op. cit., footnote 2, pp. 10, 17-19, 105- I 21, 128.

[9] Includes about $250 million in SSA's baseline budget for information technology hardware, software, and services; $150 million for personnel; and about $100 million on average (conservatively) in SSA's automation investment expenditures.

[10] See, e.g., Nancy G. Shor, National organization of Social Security Claimants' Representatives, "SSA Service Delivery: A Presentation of Current Problems and Opportunities for improvement," contractor paper prepared for the Office of Technology Assessment, Jan. 13, 1994; Richard P. Adler and Mary S. Furlong, SeniorNet, "Electronic Delivery of Social Security Services," contractor paper prepared for the Office of Technology Assessment, February 1994; and William A. Beasley, National Public Telecomputing Network, "The OTA/NPTN Teleforum Project: Use of Telecommunications Resources by the Social Security Administration," contractor paper prepared for the office of Technology Assessment, Feb. IO, 1994.

To obtain input from recipients, OTA commissioned a series of focus groups with SSA beneficiaries. The more than 40 who participated emphasized the importance of friendly and patient SSA staff assistance, whether by phone or in person. They cited frustrations with long delays in getting through on busy SSA phone lines, language difficulties for those who speak English as a second language, and transportation problems in physically getting to local SSA offices. Participants suggested that SSA make more extensive use of senior citizen centers for face-to-face service delivery, and improve its 800 telephone service (including more user-friendly phone menus, perhaps distributed in pamphlet form to senior centers).[11]

An annual financial commitment to support grassroots involvement also would help SSA to implement the NPR's recommendations to: 1) create customer-driven federal programs; 2) develop customer-service performance standards (explicitly including SSA); and 3) streamline the collection of information concerning customer satisfaction.[12]

Community Infrastructure Development

OTA concluded, in *Making Government Work,* that the involvement of the local community infrastructure can greatly facilitate electronic service delivery. The infrastructure, as defined by OTA, includes people and organizations experienced in meeting the needs of local citizens and/or in training and assisting citizens in using information technology. Schools, libraries, community centers, town halls, and hospitals offer some of the most highly leveraged opportunities because these locations are typically heavily used and well respected, and provide a multiplier effect for technology investments.

SSA recognizes the importance of community organizations in facilitating the delivery of SSA services. SSA has a continuing outreach program to better meet the needs of recipients with special needs—for example, those who do not speak English or are physically limited or isolated. But to date, SSA has only minimally explored the potential of directly involving community centers, senior centers, libraries, and the like in delivering SSA services-especially through technology-enhanced means. The experience of SeniorNet, for example, suggests that some senior citizens who might not have the knowledge, motivation, or equipment to receive services via personal computer at home might well be able to receive services at a senior center or other location where assistance and equipment are available.[13]

Again, applying OTA's minimum guideline suggested in *Making Government Work (0.25* percent per year of the agency's information technology budget'[4]), SSA would invest about $1.25 million annually to develop the community infrastructure to improve delivery of SSA's services. This modest annual commitment to community infrastructure development also would help SSA address the NPR's emphasis on community empowerment[15] and the NII's priority on community or civic networking.[16]

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[11] Partners in Enterprise, Inc., "Improving Social Security Services: Focus Group Discussions in the Washington, DC, Area," contractor report prepared for the Office of Technology Assessment, Nov. 10, 1993.

[12] Vice President Gore, op. cit., footnote 3, pp. 46-61. President Clinton issued an Executive order on Sept. 11, 1993, requiring all agencies to identify and survey customers: set and benchmark customer service standards; report on the results of customer service surveys by Mar. 8, 1994, and prepare a customer service plan by Sept. 8, 1994.

[13] Adler and Furlong, op. cit., footnote 10.

[14] OTA, op. cit., footnote 2, pp. 10, 17-19, 118-120.

[15] Vice President Gore, op. cit., footnote 3, p. 37.

[16] Informatio" [infrastructure Task Force, op. cit., footnote 5, pp. 15-16.

Encouraging Innovation at SSA

Federal agencies need to actively encourage employees, clients, and other participants to try new ways of delivering services-including electronically. SSA's strategic and tactical plans support a wide range of projects to develop and test innovative technology applications. Until recently, however, these efforts have been focused on improving existing work processes and delivery modes, or pieces thereof, rather than on rethinking and reengineering the processes themselves.[17]

Current SSA innovation projects, collectively, may already exceed the level of 0.5 percent of the agency information technology budget suggested in *Making Government Work.*[18] SSA is pilot-testing (in some cases actually operating) many, but not all, of the technologies identified by OTA as having significant potential for electronic delivery.[19] However, SSA might be well advised to invest at least $2.5 million annually in a new reengineering innovation fund that would support projects and tests of electronic delivery that would perhaps radically depart from current operations. The key is to protect these funds for truly innovative technology applications that might not necessarily flow from current plans and commitments. SSA has been investing in innovation, but not enough in sufficiently aggressive innovation.[20]

An SSA innovation fund could and probably should be disconnected from operational or pre-operational electronic delivery programs in order to avoid competition for funds and excessive red tape. Once a specific electronic delivery application reaches the pre-operational stage, then more explicit and rigorous guidelines usually would be needed and funding for pre-operational and operational innovations would presumably come from operational budgets.

An SSA innovation fund would comply with the spirit of the NPR's recommendations that suggest multilevel funding of innovation at the agency, departmental, and government-wide levels.[21] The NPR's implementing legislation proposes a government-wide innovation fund with self-sustaining financing and rigorous project selection procedures.[22] This approach could be overly constrained and discourage some of' the most promising proposals. A government-wide innovation fund should not preempt agency-specific innovations funded out of individual agency budgets.

To minimize duplication of effort, SSA should participate in any government-wide clearinghouses on innovations in electronic service delivery that may be set up. In *Making Government Work*, OTA suggests that Congress or the Office of

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17 For a discussion of SSA's pilot projects, see Social Security Administration, "Implementation of the Social Security Administration's Strategic Plan-A Status Report," June 1993; and Social Security Administration, *The Social Security Administration's Information Systems Plan* (Baltimore, MD: September 1993).

18 OTA, op. cit., footnote 2, pp. 17- 19! 129.

19 For a list of technologies, see OTA, op. cit., footnote 2, pp. 7-8.

20 SSA's lack of aggressiveness appears to reflect in part an overly cautious view of the ability of current and future recipients to receive services electronically, and overly centralized management and control of exploratory technology projects. SSA field employees probably represent a significant untapped reservoir of innovative ideas on using information technology to improve service delivery.

21 Vice President Gore, op. cit., footnote 3, p. 111.

22 See the Government Reform and Savings Act of 1993, sec. 1539, proposed by the Administration to implement, among other things, a government-wide innovation fund proposed in the NPR report, op. cit., footnote 3, pp. 162, 166, and *Reengineering Through Information Technology,* op. cit., footnote 4. The fund would be financed through savings from agency information technology applications, and would operate like a venture capital fund. Agencies would submit proposals for evaluation on rate of return, payback, budget justification, and the like. Agencies would receive loans to fund innovative projects, but with the expectation that these monies would be paid back into the fund with interest.

Management and Budget (OMB) direct the establishment of such a clearinghouse and that agency participation be mandatory.[23] This implies that reporting on electronic delivery innovations should be included in all project plans and budgets. SSA would benefit greatly from quick and easy access to the results of electronic delivery projects in other agencies (including state and local governments), just as those agencies would benefit from the SSA's electronic experience.

Creating Directories to SSA Services

If citizens are going to use and benefit from electronic service delivery, they need to first know what services are available and where. OTA's research in *Making Government Work* reaffirms the need for directories or "electronic road maps" to help citizens identify and locate relevant services.[24] SSA is beginning to recognize this need and is working on improved access to its service information via toll-free 800 numbers, automated phone response systems, and electronic kiosks. However, SSA has not seriously explored the use of computer networks and electronic bulletin boards for providing either directories to services or the services themselves; nor has SSA investigated the use of government-wide gateways and networks to deliver agency services and information.

In *Making Government Work,* OTA suggests that agencies be required to develop and implement their own electronic directories to services and information, and to participate in the emerging government-wide directories and gateways .25 SSA could participate in these government-wide activities in order to take full advantage of opportunities to improve service delivery.

The NPR and NII likewise have emphasized the importance of agency-specific and government-wide directories to agency services (including information about services *and* information as a service) .26 Information about SSA's services, and the services themselves where appropriate, logically would be included in any "Government-wide Information Locator System" (GILS), or the equivalent, that is established.[27]

Creating Alternative Futures for SSA

Agencies need to develop creative visions of their future service delivery by generating new ideas for the use of information technology and matching electronic opportunities with agency missions. SSA's strategic and information system plans do identify a range of technologies relevant to their services, and develop an intricate web of tactical plans and projects intended to gradually improve service delivery.[28] The plans seem, however, to lack creativity with regard to future service delivery scenarios. This is partly because the major planning effort predates both the reengineering and service delivery projects recently initiated by SSA, and the NPR's general emphasis on reinventing federal agencies (and redesigning SSA's service delivery in particular). The SSA's plans are quite uneven with regard to technological innovation; end-user applications—such as computer networking, electronic bulletin boards, and kiosks—are not treated in much depth.

The SSA's planning effort could be strengthened by: 1) encouraging from the inside, or hiring

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[23] OTA, op. cit., footnote 2, pp. 130-131.

[24] Ibid., pp. 17, 19, 54, 131, 153-156.

[25] Ibid.

[26] Vice President Gore, op. cit., footnote 3, p. 166; National Information Infrastructure Task Force, op. cit., footnote 5, pp. 11-12.

[27] The Government Reform and Savings Act of 1993 includes a provision establishing GILS. Also, the Paperwork Reduction Reauthorization Act of 1993, Mar. 31, 1993, includes a provision clarifying and strengthening the Federal Information Locator System.

[28] See chs. 3 and 4. Also see Social Security Administration, *Information Systems P/an,* op. cit., footnote 17; Social Security Administration, *The Social Security Strategic Plan: A Framework for the Future* (Baltimore, MD: September 1991); Social Security Administration, *Implementation of the SSA Strategic Plan,* op. cit., footnote 17.

from the outside, persons to become in-house futurists and entrepreneurs; 2) organizing workshops, retreats, and seminars for agency staff and outside innovators to think openly about reengineering SSA's functions; and 3) providing incentives and rewards for those who produce insightful, useful applications of electronic service delivery. SSA is beginning to move in these directions.

The current reengineering and service delivery initiatives are more aggressive, risky, and innovative than prior SSA efforts.[29] SSA will, however, need to develop or acquire more expertise in integrated systems planning and technology assessment if these initiatives are to be fully successful. The agency may need to reorganize to create anew strategic planning process that is better staffed and funded.

To develop a robust range of alternative futures for SSA service delivery, the SSA planning process needs to:

1. analyze all elements of SSA's services (including information, transactions, and money);
2. determine which elements are suitable for electronic delivery (taking into account current and prospective customer readiness);
3. match these elements against the list of delivery technologies in *Making Government Work* (including in-home/in-office, electronic kiosk, one-stop service center, mobile delivery, electronic benefits transfer, and electronic transactions and commerce);
4. develop and analyze alternative institutional arrangements, including strategic partnering (see below);
5. identify and analyze the facilitators and barriers to implementation of each alternative future or scenario (e.g., training, equipment, public laws);
6. assess the consequences of each scenario-at least qualitatively—for service delivery standards, customer satisfaction, employee morale and productivity, and cost-effectiveness; and
7. develop descriptions, models, and pictures to convey the essence of each scenario to management, employees, recipients, and policy makers.

SSA's strategic and information systems plans appear to satisfy traditional expectations for annual and 5-year agency Information Resources Management (IRM) plans. Expectations are changing, however. In *Making Government Work,* OTA suggests that the Office of Management and Budget redirect agency IRM planning along the lines outlined above for SSA.[30]

Strategic Partnering

Making Government Work concluded that a component of electronic delivery with high leverage is the forging of strategic partnerships among federal, state, and local governments; user groups; and, where appropriate, the private sector (including not-for-profit, philanthropic, and voluntary as well as commercial organizations) .3]

SSA is only in the earliest stages of conceptualizing and exploring strategic partnering. Partnering should offer several benefits. It should provide a way for SSA and other federal and state agencies to share the costs and risks of innovation in electronic delivery. Partnering should increase the chances of success by encouraging better understanding of the needs of users and providers, and stimulating creative thinking about new or improved service delivery strategies. Partnerships could help SSA and sister agencies break through or work around the bureaucratic and political inertia that often confronts new ideas for service delivery.

Effective partnering will require a true commitment from SSA and other agencies to aggressively seek partnering opportunities and to make them

29 See Social Security Administration, op. cit., footnote 7.

30 See OTA, op. cit., footnote 2, pp. 15-17, 21'22, 53, 123-139.

31 Ibid., pp. 2, 3, 10, 17, 21, 45, 99, 102, 112, 115-121, 128.

work. A systematic exploration of SSA's partnering possibilities should include:

1. other agencies within HHS delivering similar or related services (e.g., the Health Care Financing Administration, Administration on Aging, and National Institute on Aging);
2. agencies from other departments delivering similar or related services (e.g., in the Departments of Veterans Affairs, Housing and Urban Development, and Education);
3. government-wide directory or gateway delivery services (e.g., one-stop shopping for federal services via electronic kiosks, consolidated federal field offices, federal "service extension" offices, electronic bulletin boards, and electronic benefits transfer);
4. state or local social and health service agencies that deliver similar or related services, or that may already be involved to some extent in delivering SSA's services;
5. consumer, community, senior citizen, educational, library, and related organizations that could assist in delivering SSA's services or in facilitating electronic delivery;
6. foundations and other philanthropic organizations that could provide seed money or matching grants for innovations in electronic delivery of SSA's services; and
7. private commercial companies that make or sell the electronic equipment, systems, and services needed for electronic delivery of SSA's services.

SSA initiatives in these areas would help implement the NPR's recommendations to: strengthen partnerships in intergovernmental service delivery (federal/federal and federal/state); promote effective, integrated, multiprogram service delivery within HHS; and develop integrated access to government information and services.[32]

Pre-Operational Testing

In *Making Government Work,* OTA concluded that pre-operational testing of electronic delivery systems prior to full deployment is essential.[33] SSA has long recognized the importance of such testing, and has included a range of pilot tests and demonstrations in its information systems plans.

In *Making Government Work,* OTA suggests that both performance evaluation and policy analysis be required components of pre-operational testing, and that these components be funded at a minimum level of 5 percent each out of the relevant pre-operational testing budget. SSA has expended considerable sums on general technology evaluation studies, many conducted by private contractors. But SSA appears to have invested comparatively little in performance evaluation and policy analysis directly associated with pre-operational testing of electronic delivery alternatives. Partly as a consequence, SSA has limited ability to project the impacts (including benefits and costs) of its automation initiatives.

Greater attention to performance evaluation of pre-operational tests on the part of SSA would be consistent with the NPR's emphasis on agency performance standards and measurement, and with recently enacted legislation that requires federal agencies to establish clear goals against which performance can be measured.[34] The results of intensified performance evaluation activities would help SSA to better understand, evaluate, select, and justify alternative automation and service delivery strategies.

IMPROVING SSA SERVICE DELIVERY

SSA has prepared an impressive set of strategic and information systems planning documents, and an imposing array of pilot and implementation projects for the use of information technology

32 Vice President Gore, op. cit., footnote 3, pp. 141, 166, 167.

33 OTA, op. cit., footnote 2, pp. 17, 18, 128, 129-130.

34 See the Government Performance and Results Act of 1993, Public Law 103-62.

to improve service delivery. Yet taken as a whole, SSA's service delivery planning to date has proceeded within relatively narrow planning horizons (not yet reflecting a reengineering perspective); with relatively conservative schedules (stretching incrementally over many years); and with poorly developed measures of, and little understanding of the impacts on, actual service performance. At a mid-level, service delivery planning seems to have covered many of the right bases (e.g., improve the disability and appeals processes, improve access to SSA services, establish electronic claims folders). But the planning to date does not develop a good sense of the key leverage points or actions for improving SSA's service delivery; nor does it consider the implications of more fundamental changes in the way SSA is organized and staffed for improving service delivery and the deployment of information technology.

SSA's recent draft service delivery concept papers include some new thinking.[35] But these are, as SSA understands, only a start. Much more rigorous and complete analysis, presentation, and discussion are needed. The next iterations of the service delivery paper should more clearly describe, develop, and evaluate the range of scenarios considered. Service delivery planning also should draw much tighter linkages between reengineering, service delivery, and technology testing and deployment.

SSA would need to increase resources and staffing to complete a service delivery plan—including a major electronic delivery component—with acceptable quality and within a reasonable timeframe. Much of the groundwork has already been completed in prior planning efforts, but needs to be redirected. With the results of *Making Government Work* and related federal, state, and academic studies, SSA should be able to expeditiously redirect and take at least a first cut at an overall plan. The plan could, at a minimum, address the issues highlighted in *Making Government Work* and topics discussed above, as well as relevant NPR and NH recommendations. The plan could give detailed attention to the highly leveraged action areas outlined below.

Full Use of Electronic Benefits Transfer

SSA could accelerate the testing and use of electronic benefits transfer (EBT) by its recipients. About one-half of recipients still receive benefits via paper checks. Checks are much more costly and prone to fraud and theft compared with direct electronic deposit of benefits. For this reason, SSA is working to increase the voluntary use of direct deposit. SSA also is collaborating with other federal agencies to test the use of EBT cards to deliver benefits.

In *Making Government Work,* OTA concluded that EBT cards offer significant potential for delivering a range of social services—including SSA benefit payments. The Administration's National Performance Review reached similar conclusions.[36] EBT may be particularly well suited for SSA recipients who qualify for Supplemental Security Income and other means-tested social services (e.g., food stamps; Aid to Families with Dependent Children (AFDC); and the Special Supplemental Food Program for Women, Infants, and Children (WIC)). EBT also may be appropriate for SSA Title II recipients who do not have bank accounts (and for whom direct deposit cannot be otherwise arranged).

SSA is participating in government-wide initiatives to plan and test a multiprogram EBT card to electronically deliver federal services. EBT is most likely to be cost-effective if it can be used for multiple services and programs. Scaled-up feasibility tests and evaluations are needed prior to full-scale deployment, as detailed in *Making Government Work.* SSA needs to be aggressive to ensure that its services are included in federally sponsored feasibility testing.

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35 Social Security Administration, op. cit., footnote 7.

36 Vice President Gore, op. cit., footnote 3, pp. 113-114.

Full SSA participation in EBT would help to implement the NPR recommendations for a nationwide, integrated EBT system and for the integrated delivery of social and health-related services by HHS and other federal agencies .37 An integrated EBT system that includes SSA, among other, services also would help realize the NII vision because EBT must utilize the private sector's commercial infrastructure to be cost-effective.

Leveling the SSA Workload

SSA should move aggressively to level its service delivery workload as much as possible. SSA is well aware that the waiting times for telephone responses and office visits are unsatisfactory during peak activity periods. The NPR and SSA's strategic and information system plans assign high priority to improving these services. Telephone calls and office visits peak shortly after Social Security checks are mailed (or electronically deposited) at the beginning of each month, frequently due to questions stimulated by the payment amounts. Few organizations can staff up to handle peak loads such as this. Even if traffic is shifted among the various SSA teleservice centers, telephone response times during peak periods are significantly longer.

Both SSA and the NPR recognize that one part of the solution is to spread SSA payments throughout the month.[38] Payments could be sent on the 1st or 15th of each month, for example, or on the 1st, 10th, and 20th of each month. SSA recipients have resisted such changes, partly because of habit and partly because many recipients depend on their SSA payments to pay bills due on a standard monthly billing cycle. Direct deposit and EBT cards greatly increase the flexibility of the SSA payment schedule. The importance to workload leveling is so great that renewed and more vigorous SSA consideration appears warranted, even in the face of mixed reactions by consumers. Pilot-testing could provide an indication of how many SSA recipients might voluntarily y accept an alternative payment schedule. SSA could emulate the major credit card companies who spread their billing cycles throughout the month, yet are flexible enough to allow customers to change their due dates to meet personal needs and preferences.

Another part of the solution to uneven workloads is to provide alternative means for SSA recipients to obtain routine information. Electronic delivery, for example, could meet the needs of recipients who are, or can become, comfortable with the electronic media. Many types of routine inquiries about SSA services and procedures can, in principle, be provided by electronic kiosks, electronic bulletin boards, and computer networks. If, over time, an increasing percentage of routine inquiries can be handled without human intervention, then the telephone and office visit options will be more readily accessible—with shorter wait times—to recipients whose problems require personal attention.

Electronic delivery also should be extended to the provision of earnings and benefits information. Public law requires that SSA begin providing this information annually to eligible persons over the age of 60 starting in 1995, and to all eligible persons over the age of 25 in the year 2000. SSA could explore using electronic dissemination as a delivery mode. SSA is, of course, very sensitive to the privacy and security concerns involved in electronically issuing earnings and benefit information. OTA believes, however, that electronic options can be designed to assure an equivalent or greater level of privacy and security protection than is available for SSA information today.

Making Government Work, NPR, and NII all conclude that SSA and other federal (and related

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[37] Ibid. pp. 113-114, 141, 166; and NPR Accompanying Report, op. cit., footnote 4.

[38] The NPR recommends assigning new SSA beneficiaries a staggered payment schedule (selected from among three or four different dates).

state/local) agencies need to use a common information technology infrastructure to deliver these kinds of electronic services.[39] Otherwise, electronic delivery is likely to further complicate the already confusing, cumbersome manner in which governments organize and deliver many services. Many of the potential economic benefits of electronic delivery will not be realized if agencies like SSA fail to capitalize on opportunities to develop economies of scale and scope through partnerships among federal, state, and local agencies and the private sector.

Engaging the Electronic Delivery Community

SSA's strategic and information system plans refer to the use of kiosks, computer networks, electronic bulletin boards, and the like for electronic delivery. But the levels of actual resource commitment and activity are low, and involvement with the electronic delivery community in and outside of the federal government is still limited. SSA recently has intensified its interest in electronic delivery in the context of developing an overall service delivery plan, but its thinking is still in the formative stages.

Making Government Work and the Administration's National Performance Review and National Information Infrastructure planning documents outline numerous federal and other electronic delivery activities and initiatives. SSA could be a more active participant in this arena.

Enhancing Privacy Protection in Electronic Delivery

Making Government Work concluded that electronic delivery of services that involve personal or financial information will increase the risks to personal privacy.[40] The Social Security number already has become a de facto national identifier. NPR and SSA proposals to increase the use of electronic technology for the collection, verification, exchange, and dissemination of personal information maintained in SSA computerized record systems raise legitimate privacy concerns, of which SSA is well aware.

Widespread EBT would mean that SSA eligibility and payments information moves over a variety of electronic networks involving banks, retailers, clearinghouses, and the like, in addition to the government agencies involved. Use of kiosks and electronic filing to determine eligibility for SSA benefits could cut red tape and costs, but would create new opportunities for third-party abuse of personal information. Computer networking, electronic kiosks. or interactive television, if used to request SSA services or personal information maintained by SSA, create the potential to monitor citizens and increase the opportunities for "information brokers" to obtain personal information through legal and illegal means.

In *Making Government Work,* OTA concluded that the privacy risks are substantial enough to warrant serious consideration of: 1) updating the Privacy Act to reflect new technological risks and opportunities; 2) extending the Privacy Act to cover nonfederal systems that participate in electronic delivery of federal services; and 3) establishing an independent Privacy Protection Commission or Board to serve informational, ombudsman, advocacy, investigative, and oversight functions concerning the privacy aspects of electronic delivery.[41]

SSA has a long history of concern over privacy issues. SSA could become more involved in the current privacy protection debate, and take a lead role in finding ways to use electronic delivery that protect personal privacy. Both the NPR and NII recognize that protecting personal privacy is a vital component of electronic delivery and the national information infrastructure. The NPR, for

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[39] See OTA, Op. cit., footnote 2, esp. chs. 2, 3, 4, and 6. Also see the NPR Accompanying Report, op. cit., footnote 4.

[40] OTA, op. cit., footnote 2, pp. 4, 23, 54, 75, 143-1a.

[41] ibid.

example, recommends that a Privacy Protection Commission be established as part of its privacy protection package.[42]

Engaging the SSA Labor Community

Making Government Work reaffirmed the finding of prior OTA studies that, even with the best laid plans and adequate funding, federal employees will make or break the success of electronic delivery. Knowledgeable and committed employees are essential. The history of government and corporate automation is replete with failures caused in part by employees who are poorly trained, uninvolved, and sometimes even alienated or hostile.

OTA commissioned, in support of *Making Government Work,* **a case** study on integrating information technology and service delivery at SSA. This review concluded that impacts on the agency's labor force must be addressed from the outset; labor must be included as a full partner at all stages of SSA automation. Neglect or deferral of labor implications and concerns+ specially about job changes or losses-easily can result in much greater costs and problems over the longer term.[43]

As SSA moves further into reengineering and service delivery planning, it will be even more important to involve the SSA labor force and leadership as full partners-as recommended by the NPR for all federal agencies.[44] *Making Government Work* and the NPR also emphasize the importance of employee and management training in successful electronic delivery.[45] SSA has **long** recognized the need for training, but a revamped training program will need to include an emphasis on: 1) assessing customer or client needs; 2) integrating customer perspectives and needs into electronic service delivery planning from the outset; 3) developing electronic delivery scenarios; 4) revising agency automation and information technology programs to support electronic service delivery; 5) designing electronic service as part of integrated (intra- and interagency) delivery strategies; and 6) managing electronic delivery projects under conditions of rapidly changing technologies and needs.[46]

Revamping SSA Test Plans and Schedules

SSA is moving ahead with IWS/LAN before the reengineering and service delivery plans are completed. Thus, it is not in a position to fully understand, estimate, or analyze the impacts of IWS/LAN on SSA operations and service delivery.

Alternative or supplemental testing approaches may increase SSA's understanding of the implications and impacts of IWS/LAN—alone and in combination with other information technologies. SSA could, for example, design a new set of pilot tests that would mix and match various technologies and SSA activities. The objective could be to more fully examine the potential of IWS/LAN and other technologies for implementing current and reengineered SSA functions by focusing on a small number of representative SSA offices. Such pilot tests might better identify the implications for SSA service delivery and determine the extent to which test results can be extrapolated to the larger SSA organization and operations. Several possible pilot tests are described below.

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42 Vice President Gore, op. cit., footnote 3, p. 166; NPR Accompanying Report, op. cit., footnote 4.

43 John Harris, Alan F. Westin, and Anne L. Finger, "[innovations" for Federal Service: A Study of Innovative Technologies for Federal Government Services to Older Americans and Consumers," contractor report prepared for the Office of Technology Assessment, February 1993; and U.S. Congress, Office of Technology Assessment, *The Social Security Administration and Information Technology,* OTA-CIT-311 (Washington, DC U.S. Government Printing office, October 1986).

44 Vice President Gore, op. cit., footnote 3, pp. 163-164.

45 Ibid.

46 OTA, op. cit., footnote *2, p.* 133.

Integrated Electronic Records

SSA eventually wants to use an "electronic folder" for each SSA recipient that would replace the current mix of several separate electronic files and a variety of paper documents. To move this forward, SSA could select a small, representative sample of SSA offices and test alternative approaches that could accelerate the development of integrated electronic records. These records then could be downloaded to the selected SSA district and field offices (and state disability determination offices) over the IWS/LAN to test the actual impacts on productivity, costs, and service delivery. Some or all of the test offices also could serve as demonstration sites for hands-on evaluation of technology applications and reengineering alternatives (e.g., decentralized recordkeeping).

SSA also could assign a higher priority to creating what amounts to "master SSA beneficiary records." The NPR recommended that the Department of Veterans Affairs (VA) develop "master veteran records" to consolidate information from various databases into one integrated electronic record system.[47] SSA faces a similar challenge.

Multiprogram Electronic Benefits Delivery

SSA could participate more aggressively in pilot-testing EBT cards that could be used by a variety of federal and state agencies responsible for delivering social and health services. Opportunities for economies of scope and scale are considerable. For example, almost half of SSI recipients also receive food stamps, and almost all SSI recipients are on Medicaid. About a quarter and a third, respectively, of food stamp and Medicaid recipients also receive OASI (Old Age and Survivors Insurance) benefits. About 60 percent of persons receiving VA benefits also have OASI income.[48] These groupings collectively include many SSA recipients without bank accounts for whom EBT cards may be a better alternative than direct deposit. SSA could test the integration of IWS/LAN and centralized computer systems with EBT. (See *Making Government Work* for a discussion of the range of EBT issues that must be resolved as part of pilot testing and prior to full-scale deployment.[49])

Electronic Interagency Eligibility Determination

Initial and continuing eligibility determination is a critical problem area for SSA and other social and health service agencies. For SSA, the Disability Insurance (DI) and Supplemental Security Income (SSI) Programs are medically and/or means-tested, which necessitates periodic reviews to assure that recipients continue to be eligible. The estimated SSI error rate is about 3.5 percent, amounting to roughly three-quarters of a billion dollars per year.[50] Errors include overpayments to eligible recipients or payments to ineligible recipients. The estimated error rate for food stamp and AFDC benefits is about 6 percent—roughly $2 billion to $3 billion per year.[51]

Part of the solution may be to periodically check or consolidate a recipient's income and benefit information so that SSA (and other agencies) can determine eligibility more reliably. SSA is taking some steps in this direction, but could participate more aggressively in interagency pilot projects with the Internal Revenue Service, Health Care Financing Administration, Department of Veterans Affairs, and Food and Nutrition Service to test computer-matching and front-end verification techniques for a representative sample of recipients and/or offices. SSA also could test alter-

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47 Vice President Gore, op. cit., **footnote** 3, p. 152.

48 U.S. Congress, House Committee on Ways and Means, *Overview of Entitlement Programs—1992 Green Book,* Committee Print 102-44, May 15, 1992, p. 1611.

49 OTA, op. cit., footnote 2, ch. 4. Also see S. 1646, the Food Stamp Fraud Reduction Act of 1993, Nov. 8, 1993.

50 U.S. Congress, House Committee on Ways and Means, op. cit., footnote 48.

51 Ibid.

native uses for the IWS/LAN in conducting and accessing the results of matching and verification activities. This would provide an opportunity to use electronic data interchange (EDI) and integrated electronic kiosk-EBT systems more aggressively, as discussed in *Making Government Work* and advocated by the NPR.[52] Privacy, security, and access issues should be simultaneously addressed. (See *Making Government Work* and related OTA studies for discussion of privacy protection.[53])

Automated Disability Determination

SSA's Disability Insurance Program is the most difficult one to administer primarily because eligibility depends on initial and continuing determinations that a recipient meets medical standards of disability. Lengthy delays result from the complexity and judgmental nature of medical evaluations, combined with extensive paperwork, the involvement of medical and health professionals, an increasing caseload, and the high probability that adverse decisions will be appealed. SSA fully understands that the current disability process is unacceptable, and has assigned high priority to developing and implementing a modernized disability system (MDS).[54] The SSA's recently established reengineering task force has given first priority to reengineering the disability process, incorporating the MDS plans to the extent appropriate. The NPR, likewise, recommended that SSA improve disability claims processing so that decisions can be made quickly and accurately.[55]

The IWS/LAN is being introduced into state and SSA disability offices before a fully automated disability determination office has been developed or tested. The IWS/LAN use, such as it is, is well below its full potential capabilities. An alternative or supplemental pilot-testing approach would be to select one or several offices and implement new technology fully. The selected offices would, for example, make maximum use of: 1) electronic data interchange for collection and exchange of medical documents; 2) electronic recordkeeping for materials in each recipient's file (including use of electronic imaging of contextual items); 3) computer networking for communication with medical examiners, administrative and adjudicatory personnel, and recipients representatives and advocates; and 4) videoconferencing for medical and administrative consultations and proceedings. At a minimum, the pilot testing could demonstrate and evaluate how a typical disability determination office would work, making full use of applicable technologies, and how the IWS/LAN can best be deployed. Test results also should help SSA to estimate the overall impacts of SSA automation on productivity, costs, and service delivery more accurately,

Electronic Bulletin Boards and Computer Networks

SSA appears to have overlooked or underestimated the potential of electronic bulletin boards and computer networks for delivering routine information about SSA services. These technologies might also be used to provide personal updates on a recipient's relevant SSA records and/or pending actions—if privacy and security issues can be resolved. *Making Government Work,* the NPR, and the NII all highlight the opportunities to use computer networks for delivering services.[56]

SSA could accelerate pilot testing by using already existing government, not-for-profit, and

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[52] OTA, op. cit., footnote 2, pp. 5, 6, 41-42, 49-53; National Performance Review Accompanying Report, op. cit., footnote 4.

[53] U.S. Congress, Office of Technology Assessment, *Protecting Privacy in Computerized Medical Information,* OTA-TCT-576 (Washington, DC: U.S. Government Printing Office, September 1993).

[54] See Social Security Administration, "Modernized Disability System," n.d.

[55] Vice President Gore, op. cit., footnote 3, p. 141.

[56] OTA op. cit. footnote 3 esp. chs. 1-4; National Performance Review Accompanying Report, op. cit., footnote 4; National Information Infrastructure Task Force, op. cit., footnote 5. Also see Beasley, op. cit., footnote 10.

commercial bulletin boards and networks. Potential applications could be tested in a variety of settings—the recipient home, a local medical facility, a recipient representative's office, a local school or community college, and a community recreational facility or senior center. SSA could then evaluate the implications for IWS/LAN deployment.

User-Oriented Electronic Enhancements

SSA is well advised to conduct focus groups with recipients and their representatives to identify ways to improve existing electronic delivery (primarily the toll-free 800 and local office telephone services). Their input also is needed to assure that future electronic delivery methods are user-friendly. OTA-sponsored contract research has identified a range of concerns and suggestions for: 1) improving SSA telephone response menus and procedures; 2) clarifying and streamlining SSA notices and bulletins; and 3) facilitating the access of recipient representatives to case information (including case status, schedule, records, and calculations, where applicable) .57

User-oriented improvements might also improve the morale of SSA employees and their attitudes toward recipients. To the extent that electronic delivery can help reduce the workload, employees would be able to give more attention to recipients who need human—not electronic—assistance. The implications for IWS/LAN may be indirect, but nonetheless significant-such as enabling recipient representatives to connect electronically to a local or regional SSA office, or to an SSA bulletin board, to check on case records and status reports. Recipients and their representatives should be directly involved in the design and implementation of SSA pilot tests, and in the development of SSA service delivery scenarios based on these tests.

"One-Stop Shopping" Service Delivery

Both *Making Government Work* and the NPR emphasize the potential of information technology to support integrated delivery of government services at real or "virtual" one-stop offices.[58] The NPR has, in addition, recommended both a government-wide and HHS-specific review and consolidation of agency field offices. SSA needs to assure that: 1) appropriate SSA services are offered by the integrated or one-stop service delivery centers that may emerge; and 2) the existing SSA field offices are utilized to the extent appropriate. SSA has one of the largest field office structures (along with the Extension Service and other components of the Department of Agriculture, itself recommended for major reorganization; the Departments of Housing and Urban Development, Labor, and Commerce; and the U.S. Postal Service. among others). Some SSA services no doubt could be offered via electronic kiosks and computer terminals located at federal integrated service centers, and some other federal agency services could be offered at SSA field offices. Also, some federal one-stop service delivery programs could be colocated with their state-local counterparts. The numerous possibilities and scenarios, and the implications for IWS/LAN deployment, have only begun to be considered by SSA, HHS, and the Administration. The SSA service delivery concept papers provide a useful, but very preliminary, start.[59]

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57 See Partners in Enterprise, op. cit., footnote 11; Shor, op. cit., footnote 10.

58 OTA, op. Cit., footnote 2, esp. ch. 2; National Performance Review Accompanying Report, op. cit., footnote 4.

59 Social Security Administration, op. cit., footnote 7.

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