The Case History of Information Technology Management at the Social Security Administration

Created in 1935 to provide retirement insurance for American workers, the Social Security Administration (SSA) grew through four decades to serve an increasing number of beneficiaries in a variety of social programs. SSA'S data-collection and management responsibilities from the beginning dwarfed those of any private sector insurance company or of other government agencies. This agency was from 1935 through the 1960s a pioneer in the adoption, utilization, and management of information technologies. Yet by the end of the 1970s, SSA'S data-processing systems could no longer meet the requirements of SSA policies and programs. How did a leader in one era of technological change become threatened with obsolescence and failure in the next phase? How adequate is SSA'S current response to the overwhelming problems that became obvious in the late 1970s

Chapters 5 and 6 describe SSA history between 1935 and 1981. Chapter 7 describes how the SMP was developed and initiated. It discusses in detail the factors that led to serious problems with the Paradyne procurement of 1982 and their effects on SMP management. Chapter 8 lays out the structure of monitoring and oversight mechanisms for SSA in both the executive and legislative branches of government, reviews major oversight actions related to SMP, and identifies some oversight problems likely to affect the monitoring of all complex agencies using very large advanced technology systems.

Years of Service and Satisfaction, 1935-71

Contents

Figure

Years of Service and Satisfaction, 1935-71[1]

BIRTH OF THE SOCIAL SECURITY ADMINISTRATION, 1935-39

When the Social Security Act was passed in 1935, a three-member board was created and given a modest lead time to set up the program. Old age insurance account numbers were to be issued by January of 1937, and the first benefit payments were to begin in 1942. A first year's budget of $1 million was proposed by the board and accepted by Congress.

The autonomy that SSA senior management had in their first 3 years of organization and operations was considerably more than most Federal agencies enjoyed. Although social security was considered a New Deal program, the first Chairman of SSA was a Republican. The strong support of the President, the fact that SSA did not have to report through a Cabinet officer, and the absence of any interagency rivalries over the mission or program boundaries gave the first two chairmen very broad discretion in setting up the agency (see figure 7).
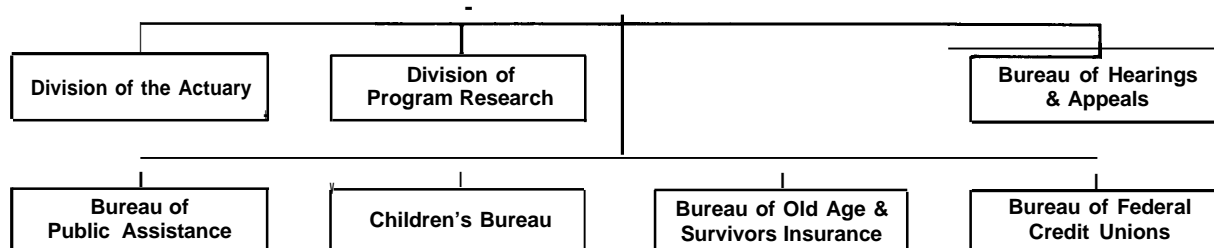
Staffing the agency was one of the first and most important tasks of the board and senior staff, and the way it was done was to have a profound and long-term effect. The act required employees to be chosen through Civil Service "except for experts and lawyers. ' Top management made liberal use of the 'expert designation to choose highly qualified persons not then available through the Civil Service, and in that Depression era they had no trouble recruiting well-educated and highly qualified workers. At the clerical levels management was also able to pick the cream of the crop, including clerks who had worked in record-keeping operations at the FBI and Census Bureau.

As a result SSA started with an unusually well-qualified work force, imbued with a missionary spirit of dedication to social insurance concepts and a "client service" outlook.[2] These concepts were reinforced in the training programs set up for all new employees, especially training in courteous dealing with the public.

___

[1]Information i„this chapter, where not otherwise cited, is drawn from a contractor report, prepared for OTA by the Educational Funds for Individual Rights, Inc., New York City, August 1985. The contractors conducted many interviews with former and current SSA executives, congressional staff members, Federal executive branch officials, union officials, technology vendors, and scholars of SSA. They also drew extensively on published materials. Many references and citations not included in this chapter are provided in the contractor report and can be supplied if needed.

___

[2]Located in Baltimore, which had a large black population, the SSA had from the beginning a policy of hiring substantial numbers of black clerical employees, a markedly different policy from that of the Federal Government at the time. Maryland then had legal racial segregation.

Figure 7.—The Organization of the Social Security Administration in the Early Years

Division of the Actuary	Division of Program Research		Bureau of Hearings & Appeals
Bureau of Public Assistance	Children's Bureau	Bureau of Old Age & Survivors Insurance	Bureau of Federal Credit Unions

SOURCE Social Security Administration 1986

By 1939, SSA had a competent and highly motivated work force, led by shrewd and dedicated headquarters executives; a large staff of technical experts in actuarial, accounting, and social-welfare operations; and afield corps committed to the practical delivery of helpful service to "entitled" clients.

Tools of the Trade

SSA soon developed into the largest insurance organization in the world, in terms of numbers of persons covered, the number of persons receiving benefits, the amount of benefits paid, and the character of hazards insured.[3] The technology then available to SSA was largely manual, mechanical, or electromechanical. Data was stored in hard copy—ledger sheets, punched cards, carbon-paper forms, and file drawers. Data processing depended on manual operations and some early electric accounting machines, such as the Hollerith system first developed for the Census Bureau in 1890. Data communications depended on trucks, the mails, and sparing use of the telephone.

SSA had to develop specifications for new types of recordkeeping and information-handling technology, and to call on leading manufacturers to design new machinery or adapt existing machines to new tasks. Three examples of such specification and innovative responses were the development of the collating machine by IBM for SSA use; adaptation of the "Soundex" system for phonetic arrangement and retrieval of names to large-file management; and application of early microfilm processes to SSA recordkeeping and data processing.[4] By 1940 SSA technical staff and expert consultants were stretching the state of the art in information technology. They could do so by foreseeing future technological needs and motivating manufacturers to meet those functional requirements. In 1935 to 1939 there

[3] Arthur J. Altmeyer, *The Formative Years of Social Security* (Madison, WI: University of Wisconsin, 1968), p. 6.
[4] Ibid., p 71. Jack S. Futterma, *The Future SSA pmCess: An Apprm"sal for the AFGE of Its Impacts Upon Social Security Administration Employees and Employment,* May 1979 (unpublished), pp. 4-5.

were no significant procurement constraints on SSA in seeking out manufacturers to design new products or adapt existing machines for the agency's special needs.

Management in the Early Years

The Social Security Board found no models in the private sector in setting up its procedures, since the insurance industry did not have the enormous database, the need for frequent updating, and the history-based entitlement process that characterized the old age insurance program. While Census, FBI, and the military had large recordkeeping and accounting operations, none of them had developed procedures that could be applied to SSA'S needs. SSA brought in outside consultants and also began hiring and educating experts of its own, building up an in-house expertise that was, down to the early 1960s, at the leading edge of recordkeeping and data-processing science.

The 1935-39 period saw several traditions established that would persist at least until the late 1960s. The top managers were personally interested in and spent a great deal of time on information management. Prompt enrollment of new beneficiaries and getting payments out on time were given top priority. SSA adopted a deliberately incremental approach to technological innovation; at the same time, however, a cadre of experts was always at work looking for new machines and new techniques, and such activity was valued by the top leadership. There was tension between operations people, who generally wanted to continue to use the machinery they had, and the systems people who wanted to push new approaches, but this tension was usually mediated in the Commissioner's office.

SSA was in these years an example of strong administrative efficiency and program effectiveness, and the agency gave that highly favorable picture wide publicity. Its cost of maintaining a worker's account was then 20 cents a year, and the administration of the

trust fund and programs was done for slightly over 2 percent of each dollar collected.[3]

There was one public controversy over administrative matters, when reporters Drew Pearson and Robert Allen reported that there were millions of unidentified 'John Doe' records.[0] SSA figures showed that these were less than 1 percent of total wage reports and the agency had an active program to investigate and post them. In those days, attacks on SSA'S recordkeeping usually reflected political conflicts rather than administrative inefficiency. In this era, SSA had a reputation in Washington for administrative agility and imaginativeness, and enjoyed significant autonomy. It had a reputation with the public for excellent service to clients. Within the agency, information management was seen as a central, high-priority concern.

Concerns about potential misuse of personal information by the Federal Government surfaced as soon as social security was proposed. The President had responded with public assurances that all personal information would be confidential and used only for program administration.~ This guarantee was not written into the 1935 law, but the first regulation issued by the SSA Board dealt with confidentiality. It did not forbid all disclosures of employee or beneficiary information but left disclosure up to the discretion of the agency. ' Disclosures were however approved very sparingly. Legislative amendments in 1939 gave statutory weight to the board's own confidentiality rule.

The board instituted physical security procedures from the outset. Published literature records no instances of outside penetration or inside misconduct in the 1935-39 period.

It became the agency's policy not only to allow old-age insurance account holders to examine their records but to actively solicit such inspections. Rights of inspection for account holders were publicized and a sizable volume of inspections took place each year. The agency saw this as a useful way to increase file accuracy, identify problems in their procedures, and to enhance public confidence in the system.

The 1939 amendments also provided a full set of due process rights for retirees, widows, and dependents; findings of fact and rulings of the board could be challenged by the claimants, "reasonable notice and opportunity for a hearing' had to be provided by the board, and the board's decisions could then be appealed to Federal district courts. These were not onerous requirements in an era of low claim levels and "entitlement" relations with clients, as well as high judicial deference to administrative expertise.

For comparison, administrative expenses for the major SSA programs in 1984 as percent of benefits paid, were 1,1 percent for old-. Age and Survivors Insurance, 3.3 percent for Disability Insurance, and 9.4 percent for Supplemental Security Income.

[0]Altmeyer, op. cit., 1968, pp. 123-12 4.

[1]Ibid., pp. 58,70.

'Alan Westin and Michael A. Baker, Data *banks in a Free Society (New* York: Quadrangle Books,1972), pp. :16-:18.

HEALTHY GROWTH, 1940-71

Between 1940 and 1972, SSA enjoyed a combination of favorable external and internal factors. These 32 years were marked by sweeping social change, and included three wars, cultural and ideological changes, the first Republican Administration (1952-60) in SSA'S history, and organization of a union at SSA, also for the first time. This was one of the first unions for Federal workers. Collective bargaining was legalized in the Federal service after 1962.

The economy expanded and with it came steady expansion of social security. Political elites, financial experts, and the public were generally confident that the social security system was fiscally sound. Challenges to this belief in the late 1940s and early 1950s were distinctly minor dissents.

Social security moved from a program created by the Democratic party opposed at its creation by the mainstream of the Republican

party, to a very broadly supported bipartisan program. It acquired a large constituency of beneficiary recipients; over 25 million retired workers, dependents and survivors, and their families, were receiving social security payments by 1971.

Programs and Resources (1940-71)

After 1950, major changes were made in the scope and nature of SSA programs:

- The Social Security Amendments of 1950 extended compulsory coverage and added optional coverage; benefits were increased by an average 77 percent, the wage base was authorized to rise, and the tax rate was allowed to rise to 1.5 percent.
- Expansions of the old age system became a regular practice, occurring seven times between 1951 and 1965, including four increases in benefits.
- A new Disability Insurance cash benefits program was enacted in 1956 and the age limitation on disability benefits was removed in 1960.
- Medicare was added in 1965.
- In 1969 Congress gave SSA administration of claims related to Black Lung disease.
- In 1972 there was a 20-percent increase in benefits, the wage base was increased, and an automatic cost of living (COLA) system was added. The Supplemental Security Income (SSI) program was also enacted but did not start until 1974.

These program changes called for substantial increases in SSA workloads: in opening files for newly covered workers, calculating revised benefits, and administering payments, and in the case of Medicare, dealing with third-party providers. But at least until 1968 there was general expansion of the Federal work force and a continuing supply of good employees. As a result SSA leaders saw no real problems for the agency's administrative responsiveness in continuing growth of the social security program.

SSA remained quite successful in obtaining from Congress and the executive branch the appropriations and personnel authorizations that it needed to keep up with the expanding workload, and was therefore able to handle these changes effectively.

Beginning in 1953, however, there were some early indications of what could happen when Congress made program changes that increased the workload, with a highly compressed deadline and without additional personnel and material resources to carry out these mandates. As a result of amendments to the Social Security law in 1950, many new claimants waited until July 1, 1952, to file their claims, in order to take advantage of more liberal benefits computations. The workload for new claims increased by 39 percent. In addition, because of further amendments in 1952, changes had to be made in the benefits amounts for 4.6 million people already on the roles, and these changes had to be made between July 18 and the issuance of September checks. In spite of this workload, the Eisenhower Administration taking office in January 1953 sharply curtailed the budget for the last half of the fiscal year that had begun in July 1952, making it impossible to add staff to catch up with the backlog. In 1953 this resulted in a temporary decline in the quality of administration and reduction in service to the public.'

No such crunch took place after the Eisenhower Administration concluded that SSA was a well-run operation not requiring further budget cuts, until 1968. In that year the Revenue and Expenditure Control Act resulted in SSA'S full-time work force declining by more than 2,000 persons in 2 years, while the workload went up by 10 percent. President Nixon then ordered total Federal employment to be reduced by 5 percent, and all Federal agencies to reduce the average grade level of their employees.

During this crunch, computers allowed SSA to cope with rising workloads; in 1971 systems improvement "saved" the equivalent of 2,022 employees and $19.9 million for SSA. However the resource limitations of 1969 to 1972 were to leave the agency in what turned out to be

---

a seriously weakened position for the expanded operating demands and the reduced ADP (automatic data processing) support that were to unfold in the middle to late 1970s.

Management (1940-71)

A series of broad organizational changes had taken place in these years. The three-member board had been abolished in 1946 and its functions transferred to a single commissioner under the Federal Security Administration. In 1953 SSA was incorporated into the Department of Health, Education, and Welfare (HEW). Public assistance and Children's Aid programs were removed from SSA in 1963, leaving it with the Old Age and Survivors Insurance Program and the Disability Insurance Program. Two years later SSA was reorganized, when it was given responsibility for the new Medicare Program.

Between 1946 and 1972 there was steady growth in executive branch oversight of SSA operations and plans. The relocation of SSA first to the Federal Security Administration and then to HEW began to limit SSA'S previous degree of autonomy. The saving condition —secretary-level satisfaction with the agency's administration-was only as good a shield as SSA performance was strong. When that faltered, after 1973, secretarial protection could evaporate swiftly.

After the 1965 reorganization, SSA still had a mixture of program and functional units. Four bureaus operated the four major programs: Retirement and Survivors Insurance, Disability Insurance, Health Insurance, and Federal Credit Unions. A single centralized recordkeeping organization handled databases and data processing for all programs, and had both systems analysis and operations components. '" Specifications for new systems came from the program bureaus, and systems coordination and advanced planning were in the Office of Administration. Ten Regional Commis-

sions were created, not as line managers, but to serve as "the Commissioner's eyes and ears. 1

Labor-Management Relations (1940-71)

Most of the successful elements of agency administration remained largely intact from 1940 to 1971. SSA remained a lifetime career service for most of its employees; at headquarters, SSA had a lower turnover rate than in any other Federal civilian agency and much lower than in private industry. Staff quality remained high, and mission dedication strong. Field operations maintained smooth and pleasant client relations. Disability determinations were done by State agencies, and disappointed claimants did not therefore generally see SSA employees as their adversaries. Through these years, customers were always right, and the customers and the taxpayers were considered to be the same people.

By the late 1960s, however, there were some signs that the "pioneer period" of dedicated employees was shifting into a new, more complex phase of employeeemployer relations. The permanent work force almost tripled from 1959 to 1972. For a time at least many old-line SSA employees feared that the new recruits would not share the agency's deep-seated public service ethic. The influx of new employees made it harder to give intensive, personalized training. New social values, including suspicion of large organizations, were widespread in society. Employees were becoming more assertive about their rights and more demanding in terms of working conditions. In the long run, however, SSA has tended to have a high degree of employee loyalty and commitment compared to other public and private sector organizations.

A 1962 Kennedy Executive Order authorized collective bargaining in the Federal service. Previously the American Federation of Government Employees (AFGE) had *represented* fewer than 5 percent of SSA employees. After 1962 AFGE had 2,500 members out

[10]Jack S. Futterman, *The Social Securit.v Administration "s Recent Reorganizations and Related Administrative Problems,* report to the National Commission on Social Security, July 28, 1980 (unpublished), pp. 9-13.

"Ibid, p. 13.

of 11,000 headquarters employees, and by 1971 40,000 of SSA'S 52,000 employees were covered by union contracts, although probably only a quarter of them were union members. The union began raising issues of adverse working conditions, sex and race discrimination, and technology impacts.

SSA'S top management saw itself as pro-union, based on SSA'S strong alliance on social security policies with the labor movement. However stresses in labor relations surfaced by 1965 that were harbingers of later fissures.

A comprehensive article in the *Baltimore Suzz*[12] in 1966 identified these problems:

c bad working conditions, especially over-crowding;
● changes in work force dedication, and loss of missionary spirit about social security;
c disaffection among clerks, who constituted half of the 11,000 headquarters staff, and particularly among women and the 21 percent of clerks that were black (a fact that SSA, which had been a leader in hiring blacks for office work in the 1930s, had difficulty in realizing); and
● concern over automation—many clerical and production employees felt they were "economic units" who served the machines.

Technology and Procurement Policy (1940-71)

From 1940 to 1954 there were only modest enhancements of electrical accounting machinery and microfilm capabilities for SSA to consider. Then came the EDP (electronic data processing) revolution, beginning in the early 1950s with first-generation computers, moving into second-generation computing in the late 1950s, and reaching third-generation machines in the 1960s. With the revolution in central data storage and processing capacities went major related changes in data collection and input-output mechanisms, and in the soft-

ware that was needed to program and operate the new EDP systems. Data communication capabilities also expanded, as teletype systems came on the market, and then on-line input and retrieval of data through telecommunications. Finally, microfilm printing became available, with major possibilities for a massive manual-records-based account-number operation.

By the end of the 1960s and early 1970s management of all large organizations were presented with a group of key decisions:

- for which files was it cost-effective and organizationally important to automate;
- whether to go from batch processing to interactive, on-line systems for high-volume operations;
- whether to concentrate mainframe computers in one data center or create regional data centers; and
- whether to create a communication network or stay with mixtures of telephone, teletype, and physical transportation.

SSA had a number of technological choices and decisions to make:

- to stay with the dominant IBM system, or adopt competing systems, which could mean extensive reprogramming;
- to retain SSA early tape media or move to new higher density and higher speed storage, which required new tape drives and some changes in job control language, but was not an enormous task;
- when to move from early software programming such as COBOL, to higher order languages, which had advantages but would be expensive to reprogram; and
- how to keep state-of-the-art systems and programming staff.

What needs stressing is how much such decisions were a matter of art rather than science. In the 1950s and 1960s many Federal agencies mastered that art and were at the fore front of successful information technology applications: the military, the FBI, the Census Bureau, the Internal Revenue Service, and SSA, which was still among the leaders in EDP applications.

' ~A&m Spiegel, '*The Giant in Woodlawn," l)arts I-I\', l;al-timom %n, Apr. 25-28, 1966.

In this period there were major changes in procedures for procurement of Federal computers. The securing of budget authorization for large EDP acquisitions had come under HEW, the Office of Management and Budget, and congressional scrutiny by the early 1960s, as the costs of equipment became substantial. But these reviews generally extended only to determining the need for and timing of expenditures. SSA was able to define its needs and then enter into special relationships with leading vendors in the accounting machine, computer, and microfilm industries. The vendors were not only anxious to get the high-volume business, but also to have the prestige and publicit y that came from having their equipment selected by SSA.

A special relationship had developed between IBM and SSA in the first years, 1935 to 1939, and became even more important from 1940 to 1965. IBM was the leading vendor of punch card systems, and worked to provide special applications for SSA. From 1950 to 1965 IBM was the dominant vendor of first-, second-, and third-generation computers. Federal agencies were often "90 percent IBM. For SSA, IBM provided first-class briefings and plans and justifications with which to approach Congress on expenditures.

As more and more IBM computers were installed at SSA, assuring the compatibility of new computer acquisitions with existing operating systems became a key procurement need, leading to the adoption of still more IBM computers. IBM's interest was not in conflict with SSA'S independent technical judgment. The custom software programs written in SSA to handle their specialized operations were still adequate. The concept of large data-processing facilities centralized in one location was the prevailing wisdom as the best way to maximize the utilization of expensive hardware. SSA'S approach was paralleled by what leading insurance companies and banks were doing. As of 1965, then, SSA centralized, batch-processed data operation both met SSA'S needs well and also suited IBM marketing strategy.

In 1965, Congress enacted Public Law 89-306, usually called the Brooks Act. Because of concern about the overwhelming dominance of IBM in Federal computer purchases, the act required full competitiveness in hardware acquisitions and attempted to limit sole-source purchasing. The General Services Administration (GSA) was designated to supervise and monitor EDP acquisitions. Under certain conditions, GSA could give an agency Delegated Procurement Authority for large procurements. SSA was then almost completely an IBM shop, although there was one RCA-301 in the Central Office and one in each of the six program service centers; thus SSA would soon have to justify continued acquisition of IBM computers to skeptical scrutiny.

SSA was still a user of leading edge information technologies throughout most of this period. Successful innovation was possible because management placed high priority on accurate recordkeeping, advance planning for new technology was well institutionalized, there was an effective technical staff, and there was a generally sound balance between pursuit of new technology and attention to operational performance. The agency was sensitive to the human-factor impacts of new systems, and generally had employee, and union, support.

Some examples of SSA adoption of new information systems during this period were first-generation EDP equipment in 1955 for posting, benefit computation, reinstating incorrectly reported earnings items, and statistical work; the development of the microfilm printer (linking computer and microfilm technology) in 1959; and automatic card punching equipment, in 1963.

The need for systems integration was recognized by the late 1950s. SSA was able, based on its good service performance and popularity in Congress, to have its case for continued acquisition or upgrading of its IBM computer stock accepted by GSA and the Brooks Committee. It did move into purchases of several UNIVAC computers for administration, and to General Telephone & Telegraph for a very

large communication acquisition, which moderated its total reliance on IBM.

SSA profited from making its systems operations highly visible to the public. This tradition of good work, well advertised, served SSA well with three major constituencies: the public, as taxpayers and program participants; Congress and the White House; and its own work force.

As of 1972, SSA did not yet have what would today be called a computer system. It was still a paper operation assisted by EAM (electronic accounting machines) and EDP machines. File folders and microfilm records of account applications were the primary source of determinations and responding to inquiries. SSA, in its Golden Age, was still a well-organized, well-staffed, and well-led machine-assisted people system.

Emerging Problems (1965-72)

During the "Great Society" years of the 1960s, the Johnson Administration relied heavily on SSA to implement social welfare programs. Strong emphasis was put on establishing "an SSA presence" close to the client, to make it easier for the aged and disabled to talk with SSA representatives face-to-face. The number of SSA field offices increased by about 50 percent during these years.

When the workload rose heavily and steadily, in the late 1960s, advance planning often became a casualty of the need to keep operations from falling behind. The timetables for starting new efforts could never be kept.

The reliance on "homegrown" programmers and systems experts also began to have costs in this period. Because of constant operational demands there had been no substantial reprogramming of software. In the early and middle 1970s, in private firms and some Federal agencies, substantial resources were devoted to revising software as new techniques of software engineering emerged. SSA *did not* do this. By 1972 SSA was well behind the leaders in both the private and public sectors in that increasingly critical aspect of total EDP management.

This growing weakness was not yet apparent outside the agency. Through the heroic use of accumulated people, and organizational and systems resources, SSA'S service delivery still met program demands and client expectations. However, SSA was falling steadily behind in anticipation of systems overload, people-machine balances, technical procurement work, and top management actions.