

SAVINGS AND LOAN INDUSTRY

INPUT

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OFFICES

UNITED STATES

2180 Sand Hill Road
Menlo Park, CA 94025
(415) 854-3422

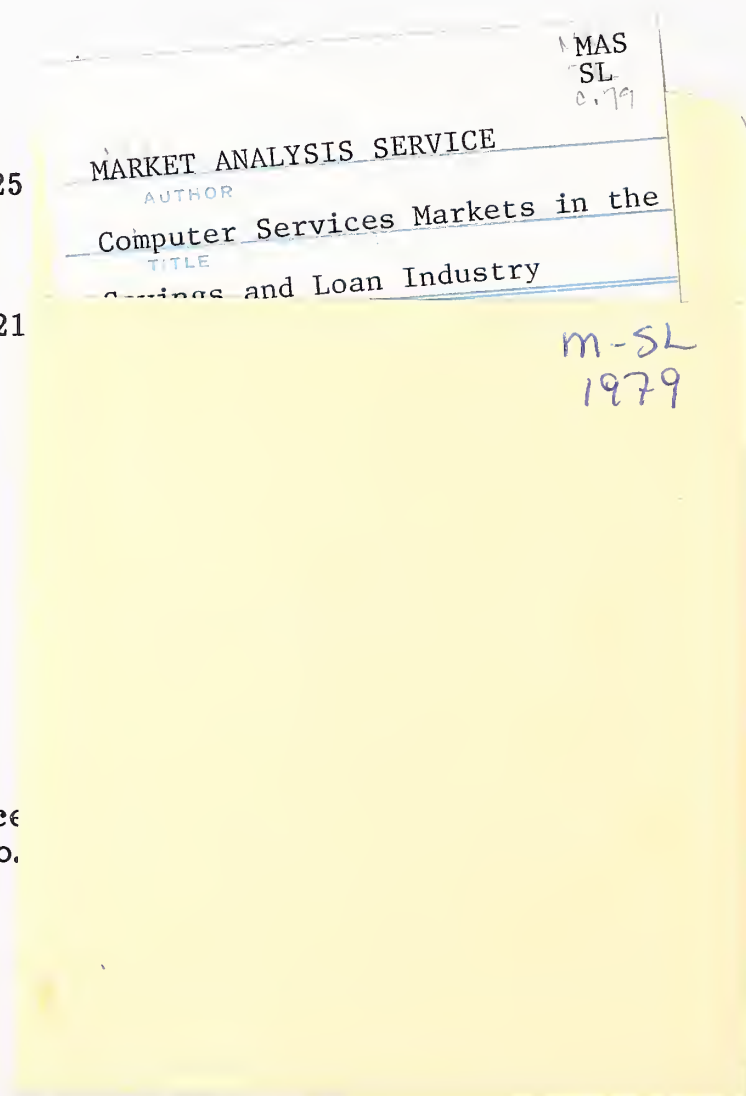
15 Bond Street
Great Neck, NY 11021
(516) 482-4170

EUROPE

67A High Street
Sutton
Surrey SM1 1DT
England

JAPAN

Overseas Data Service
Shugetsu Building, No.
3-Chome Minato-Ku
Tokyo, 107
Japan
(03) 400-7090



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**COMPUTER SERVICES MARKETS IN
THE SAVINGS AND LOAN INDUSTRY**

INDUSTRY REPORT #8

JULY 1977

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THE SAVINGS AND LOAN INDUSTRY

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COMPUTER SERVICES MARKETS IN
THE SAVINGS AND LOAN INDUSTRY

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I. INTRODUCTION

I. INTRODUCTION

- This report is produced by INPUT as part of The Market Analysis Service (MAS).
- Research carried out for this report was done first through a series of meetings with industry experts. Industry data was then gathered from Savings and Loan regulatory agencies and national trade associations. Lastly, a series of on-site and telephone interviews was conducted with both users and vendors.
- An extensive review of vendor-provided literature and follow-up interviews added to the comprehensiveness of the analysis conducted.
- Before the research began, INPUT clients were asked to suggest particular questions and specific areas of interest to be incorporated into the study.
- Inquiries and comments on the information presented in the report are requested from clients.

A. SCOPE OF THE STUDY

- This report deals specifically with markets and business opportunities for computer service vendors with Savings and Loan Associations (S&Ls).
- This report does not cover markets and business opportunities with Mutual Savings Banks and Credit Unions.
- Mutual Savings Banks were not considered because they operate more like commercial banks than S&Ls; they are regional in scope (Northeast United States) and they comprise a small sector of the thrift marketplace.
- Credit Unions were not considered in this study because they operate in a different marketplace (consumer lending) and have vastly different characteristics than do S&Ls.
- The following definition of S&L size in terms of assets is used throughout this study:

<u>DEFINITION</u>	<u>ASSET SIZE</u>
Very Large (VL)	Over \$1 billion
Large (L)	Between \$100 million and \$1 billion
Medium (M)	Between \$25 million and \$100 million
Small (S)	Under \$25 million

B. INTERVIEW PROGRAM

- The user analysis program consisted of 20 interviews, 12 on-site and 8 by telephone. Interviews were conducted in April and May 1977.
- In addition, 14 computer services vendors were contacted, half on-site and half by telephone, about their services in relation to S&Ls.
- The interview program is summarized in Exhibits I-1 and I-2.

C. ECONOMIC ASSUMPTIONS

- All figures given in the report are in current dollars.
- The forecast period is 1977-1981. During all forecasts given in the report assume a 14% average S&L industry growth rate, including a 5% average annual inflation rate over the forecast period.

EXHIBIT I-1

SAVINGS AND LOAN INTERVIEW PROGRAM

S&L SIZE	NUMBER OF S&Ls (1976)	ASSETS (1976)	NUMBER OF INTERVIEWS	INTERVIEW ASSETS (BILLIONS)
VERY LARGE	38	111.0	6	19.70
LARGE	664	112.1	5	2.10
MEDIUM	1680	88.8	6	.81
SMALL	2582	26.5	3	.06
TOTAL	4964	338.4	20	22.7

EXHIBIT I-2

SAVINGS AND LOAN
COMPUTER SERVICES VENDOR
INTERVIEW PROGRAM

VENDOR TYPE	NUMBER OF INTERVIEWS
FEDERAL HOME LOAN BANKS	1
COMPUTER SERVICE VENDORS	7
S&L JOINT VENTURES	2
S&L SERVICE COMPANIES	2
DATA BASE VENDORS	2
TOTAL	14

**II. EXECUTIVE
SUMMARY**

II. EXECUTIVE SUMMARY

A. FINDINGS

1. Market Structure

● There are 4,964 S&Ls (1976 census) in the United States who conduct business at some 15,405 locations. Within this total population there are four sub-markets:

- 2,582 small S&Ls with assets under \$25 million.
- 1,680 medium S&Ls with assets of from \$25 to \$100 million.
- 664 large S&Ls with assets of from \$100 million to \$1 billion.
- 38 very large S&Ls with assets over \$1 billion.

While only accounting for 14% of the institutions in number, the latter two categories account for almost 60% of the industry's asset base, and 68% of the total funds spent for EDP.

● Although S&Ls are spread across the country, six states account for over 50% of the total asset base; these are California (17%), Illinois (7%), Florida (7%), Ohio (7%), New York (6%), and Texas (5%). California has 9 out of the 10 largest S&Ls.

- Between 1960 and 1975, the industry's asset base grew from \$72 billion to \$338 billion, a 14% average annual growth rate. This industry growth is expected to continue at about the same rate for the next few years.

- There is a great deal of strong lobbying at both the state and federal levels for regulations that would permit S&Ls to expand their range of financial services. Presently, S&Ls are limited almost exclusively to consumer savings and lending on residential real estate. If the lobbyists have their way, S&Ls may ultimately become "Family Finance Centers" offering a full range of consumer financial services, while today's commercial banks would evolve into "Business Financial Centers."

Opposing forces within the S&L industry (and there are many) are quite content to "borrow at 6% and lend at 9%." Thus the long-term future directions of the S&L industry are far from clear at this writing.

2. Data Processing Use by S&Ls

- The S&L industry is highly automated. Both in-house EDP and outside services are widely used and accepted. The transaction-oriented nature of the S&Ls' main applications (savings and loans accounting) coupled with their relative simplicity have made this industry a natural EDP user. In 1976, 83% of all institutions used some form of automation.

- Within the typical S&L organization there are five functional areas (or application groups) that use EDP:

- . Savings
- . Lending
- . Administration
- . Financial/Cash Management
- . Specialty Consumer Services

The first two, "Savings" and "Lending," are far and away the most important areas accounting for 82% of all EDP expenditures. The fastest growing area is "Specialty Consumer Services" which is essentially comprised of a myriad of other consumer interface applications.

- Within 3-5 years, EFTS will likely become fundamental to the S&L industry. These systems will change the way S&Ls do business and the way they process information.
- Exhibit II-1 summarizes both in-house and services EDP expenditures for 1976 (actual) and 1981 (forecast) for the four sub-markets. In 1976, S&Ls spent \$355 million for EDP, about 1½% of revenues. This figure is expected to grow to \$676 million in 1981, an AAGR of 14%.
- By 1981, 99.6% of the total S&L asset value will be managed by automated systems, up from 95% today. Thus, the industry is already highly penetrated.
- Computer Services account for about one-third of the total expenditure for all EDP. In terms of existing customers, services prospects lie primarily within the three smaller sub-markets. Since just about all the very large, large and medium S&Ls are already automated, new customers will come from the "small" category.
- In-house installations tend to be concentrated in the larger firms as would be expected. IBM, NCR, Burroughs and Univac appear to be the leading mainframe suppliers.

EXHIBIT II-1

EDP EXPENDITURE DISTRIBUTION
BY S&L SIZE

S&L SIZE	EXPENDITURES (\$M)					
	IN-HOUSE		SERVICES		TOTAL	
	1976	1981	1976	1981	1976	1981
VERY LARGE	45	95	4	6	49	101
LARGE	134	247	57	111	191	358
MEDIUM	50	91	42	78	92	169
SMALL	12	27	11	21	23	48
TOTAL	\$241M	\$460M	\$114M	\$216M	\$355M	\$676M

- The savings (and to a lesser extent, lending) function is basically an interactive remote computing application. Industry statistics show about 36,000 terminals, mostly teller terminals, in use today. This figure will nearly double to 68,000 units by 1981.

3. Computer Services Opportunities

- Spending for computer services, \$114 million in 1976, will keep pace with overall EDP expenditures and will grow 14% each year to reach \$216 million by 1981. Services are entrenched because most of the smaller S&Ls cannot justify development of an in-house EDP system with a remote computing network. If and when new applications such as checking accounts and consumer credit become a reality, smaller S&Ls will become even more dependent on services.

- In terms of delivery mode, only the market for interactive remote computing is viable, accounting for 82% of all S&L services expenditures. Expenditures for facilities management, software, batch processing, etc. are all minor.

- Data Base services are a small opportunity, \$7 million in 1981, that should be considered by RCS vendors offering access to financial and economic data bases.

- Large and medium S&Ls represent 90% of the services market today and will continue to be the best market areas in the future.

4. Competitive Environment

- Over 200 vendors sell processing services to S&Ls. As shown in Exhibit II-2, there are five types of vendors. In no category does any one vendor have a dominant market position.
- The Federal Home Loan Bank has been ordered by the courts (under appeal) to divest their S&L computer services operations. When this happens, the FHLB's accounts will represent a new market for other services vendors.
- Commercial banks are, by and large, expected to move away from processing for S&Ls. Their customers also represent a potential new market for other services vendors.
- NCR Corp. and ADP Network Services, Inc. are the only two commercial services vendors that process more than two million accounts annually.
- Much of the processing services for S&Ls is provided by S&L associations and S&L joint-venture companies. These are essentially "captive" organizations. However, as processing requirements increase, it may not be economic for many of these organizations to make the investment needed to provide new services such as EFTS. Thus these organizations may prove to be good candidates for takeover, licensing or joint venture by commercial services vendors.

EXHIBIT II-2

CLASSES OF RCS VENDORS SERVING S&Ls

VENDOR CLASSIFICATION	NUMBER	DOLLAR MARKET SHARE
● S&Ls	44	14%
● S&L JOINT VENTURES	67	18
● COMMERCIAL BANKS	40	12
● FEDERAL HOME LOAN BANKS	4	18
● COMMERCIAL RCS VENDORS	45	38
TOTAL	201	100%

B. RECOMMENDATIONS

1. Marketing Strategies

- Concentrate marketing in the ten states that account for 60% of the market and on the large and medium size S&Ls within those states.
- Be poised to move into the S&L customer base of the FHLB and commercial banks if and when they stop providing services.
- The NCR customer base may well be particularly susceptible to displacement. Watch for signs of unhappiness among their customers.
- Establish a specialty group within marketing for financial institutions which presumably would handle banks, finance companies, credit unions, etc. as well as S&Ls. Become known as a financial services specialist.
- Offer allied but subsidiary services, such as remote access, to financial and economic data bases as "sweeteners." Financial planning and modeling, cash management and portfolio management are other good applications.
- Transaction price services.

2. Technical/Product Strategies

- Have an active new product program underway to develop solutions for new applications, specifically the new consumer interface applications anticipated for the future.

- Establish Automated Clearing Houses (ACH) for groups of S&Ls.
- Stay abreast with new terminal developments and be ready to offer the best price/performance units as soon as they are available.
- Develop and offer Electronic Funds Transfer Network Services. Keep up with the latest developments in the credit field and allied products such as ATM (Automatic Teller Machines).

3. New Entrants

- Because the S&L market is today near saturation (at least in terms of the dollars managed by EDP systems), there is little room for the new market entrant who would go into the business from scratch.
- New entrants should pursue a merger, joint-venture, or acquisition strategy focusing attention on the several S&L joint-venture services companies. Some of these organizations will become, in time, amenable to takeover because they lack the capital needed to keep pace with new product demands.

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III. SAVINGS AND
LOAN INDUSTRY
STRUCTURE

III. SAVINGS AND LOAN INDUSTRY STRUCTURE

A. INDUSTRY OVERVIEW

1. HISTORY

- A savings and loan (S&L) association is commonly defined as a locally-owned and privately-managed thrift and home financing institution. S&Ls are direct descendants of British building societies.
- The first building association in the U.S. was organized in 1831 in Pennsylvania. In 1875, New York became the first State to regulate S&Ls.
- A census in 1893 revealed 5600 associations, with 1.35 million members and assets of \$475 million. Assets reached \$1 billion in 1923, \$2 billion in 1927, and \$9 billion in 1930.
- In the depression, S&L assets declined to under \$6 billion. The decline was not reversed until 1938.
- The post World War II years ushered in a golden age for S&Ls. At the close of 1975, there were about 5000 S&Ls in the U. S. with assets of \$338 billion.
- A chronology of significant events in the development of the S&L industry is presented in Exhibit III-1.

EXHIBIT III-1

SIGNIFICANT EVENTS IN THE DEVELOPMENT
OF THE SAVINGS AND LOAN INDUSTRY

DATE	EVENT
1892	<ul style="list-style-type: none"> ● The United States Savings and Loan League was organized by representatives from 13 state leagues. The U. S. League has become a strong national trade association.
1932	<ul style="list-style-type: none"> ● The Federal Home Loan Bank system was established. The Reconstruction Finance Corporation together with the Home Owners Loan Corporation refinanced nearly a billion dollars in home mortgages from 1933 through 1936.
1933	<ul style="list-style-type: none"> ● Federal savings and loan associations were authorized by the Home Owners Loan Act of 1933. Between 1933 and 1937, \$275 million in federal funds were invested in S&L accounts of 1400 new federal and state associations.
1934	<ul style="list-style-type: none"> ● The Federal Savings and Loan Insurance Corporation was established. Account coverage was raised from \$5000 to \$10,000 in 1950 to \$20,000 in 1963, and to \$40,000 in 1974.
1938	<ul style="list-style-type: none"> ● The Federal National Mortgage Association was established as a government corporation, rechartered as a federal agency in 1954, and established as a private government-sponsored corporation in 1968. It has become the largest purchaser of residential mortgages.
1948	<ul style="list-style-type: none"> ● The expansion of the savings and loan business was an outstanding feature of the post-war decade. With liquid assets of over \$2 billion, it entered a new phase of growth and development.
1955	<ul style="list-style-type: none"> ● The Federal Home Loan Bank became an independent agency. The FHLB and Federal Savings and Loan Insurance Corporation have since become member-owned.
1959	<ul style="list-style-type: none"> ● The first S&L holding company was formed in California in 1955. The formation of S&L stock companies accelerated until the Holding Company Act of 1959 limited complete ownership to one S&L.

EXHIBIT III-1 (CONT'D.)

DATE	EVENT
1966	<ul style="list-style-type: none"> ● The Interest Rate Adjustment Act of 1966 granted the Federal Home Loan Bank Board explicit power to fix the maximum rates on the term structure of savings accounts. This has resulted in the current rate differential between savings at commercial banks and at S&Ls.
1970	<ul style="list-style-type: none"> ● The Federal Home Loan Mortgage Corporation was created by the Emergency Home Finance Act of 1970 to establish an active secondary mortgage market.
1974	<ul style="list-style-type: none"> ● Federal Regulations permitted Negotiable Order of Withdrawal (NOW) accounts, a third-party payment mechanism, in two states - Massachusetts and New Hampshire.
1975	<ul style="list-style-type: none"> ● Stock charters for federal S&Ls were authorized. Regulations also permit mutually owned state S&Ls to convert to federal stock associations.
1977	<ul style="list-style-type: none"> ● Congress is currently considering sweeping reforms of the structure of the nation's financial institutions. The main provisions for S&Ls are: <ul style="list-style-type: none"> - extension of federal ceilings on savings interest rates for 5 1/2 years. - permission for S&Ls to offer checking accounts - permission for S&Ls to invest a significant part of their assets in more short-term instruments such as consumer loans, corporate bonds and commercial paper.

2. A FINANCIAL INTERMEDIARY ROLE

- Savings and loan associations are private organizations established under both federal and state laws. They carry the word "Federal" in their names if federally chartered. S&L associations are financial intermediaries. They act as 'go-betweens', making loans and other investments using both deposited and borrowed funds. S&Ls accept the risk on interest-earning investments and use the income to pay interest to savers and dividends to investors, pay operating expenses, and build reserves.
- Most S&L associations have a mutual type of corporate structure, that is, they are owned by their depositors. All federal associations were mutual companies until 1976, when federal S&L associations could become stock companies.
- There is a trend of state organizations becoming stock companies. This appears directly related to merger/acquisition activity. At the end of 1975, 709 S&L associations (14%) were stock companies. They held 21% of aggregate S&L assets. California remained the leader in stock companies with \$38 billion (52%) of all stock company assets. S&L associations are the second largest type of financial intermediary, with 1975 year-end assets of \$338 billion. They are outranked only by commercial banks, whose 1975 assets totaled \$958 billion (Exhibit III-2).
- Total assets of S&Ls were 35% of those of commercial banks in 1975, as compared with 28% in 1960. Between 1960 and 1975, S&L assets increased by a factor of 4.7, commercial bank assets by 3.7, and total financial

EXHIBIT III-2

TOTAL ASSETS OF FINANCIAL INTERMEDIARIES

FINANCIAL INTERMEDIARY	1960 (\$B)	1965 (\$B)	1960-1965 % GROWTH	1970 (\$B)	1965-1970 % GROWTH	1975 (\$B)	1970-1975 % GROWTH
COMMERCIAL BANKS	\$257.6	\$377.3	46.5%	\$ 576.2	52.7%	\$ 958.4	66.3
SAVINGS & LOAN ASSOCIATIONS	71.5	129.6	81.3	176.2	36.0	338.4	92.1
LIFE INSURANCE COMPANIES	119.6	158.9	32.9	207.3	30.5	289.1	39.5
MUTUAL SAVINGS BANKS	40.6	58.2	43.3	79.0	35.7	121.0	53.2
FINANCE COMPANIES	26.9	44.8	66.5	62.5	39.5	92.5	48.0
INVESTMENT COMPANIES	17.0	35.2	107.0	47.6	35.2	42.2	11.3
CREDIT UNIONS	5.7	10.6	86.0	17.8	67.9	38.3	115.2
PRIVATE PENSION FUNDS	38.2	73.6	92.7	110.8	50.5	156.5	41.2
STATE AND LOCAL PENSION FUNDS	19.6	33.2	69.4	58.1	75.0	106.4	83.1
TOTAL	\$596.7	\$921.4	54.4%	1,335.5	44.9%	\$2,142.8	60.4%

intermediary assets by 3.6. Weaker growth periods, such as 1965-70, for S&Ls occurred primarily as a result of restrictive monetary policies, imposed by the Federal Reserve and strong competition from commercial banks for the savings dollar.

3. INDUSTRY ADMINISTRATIVE ORGANIZATION

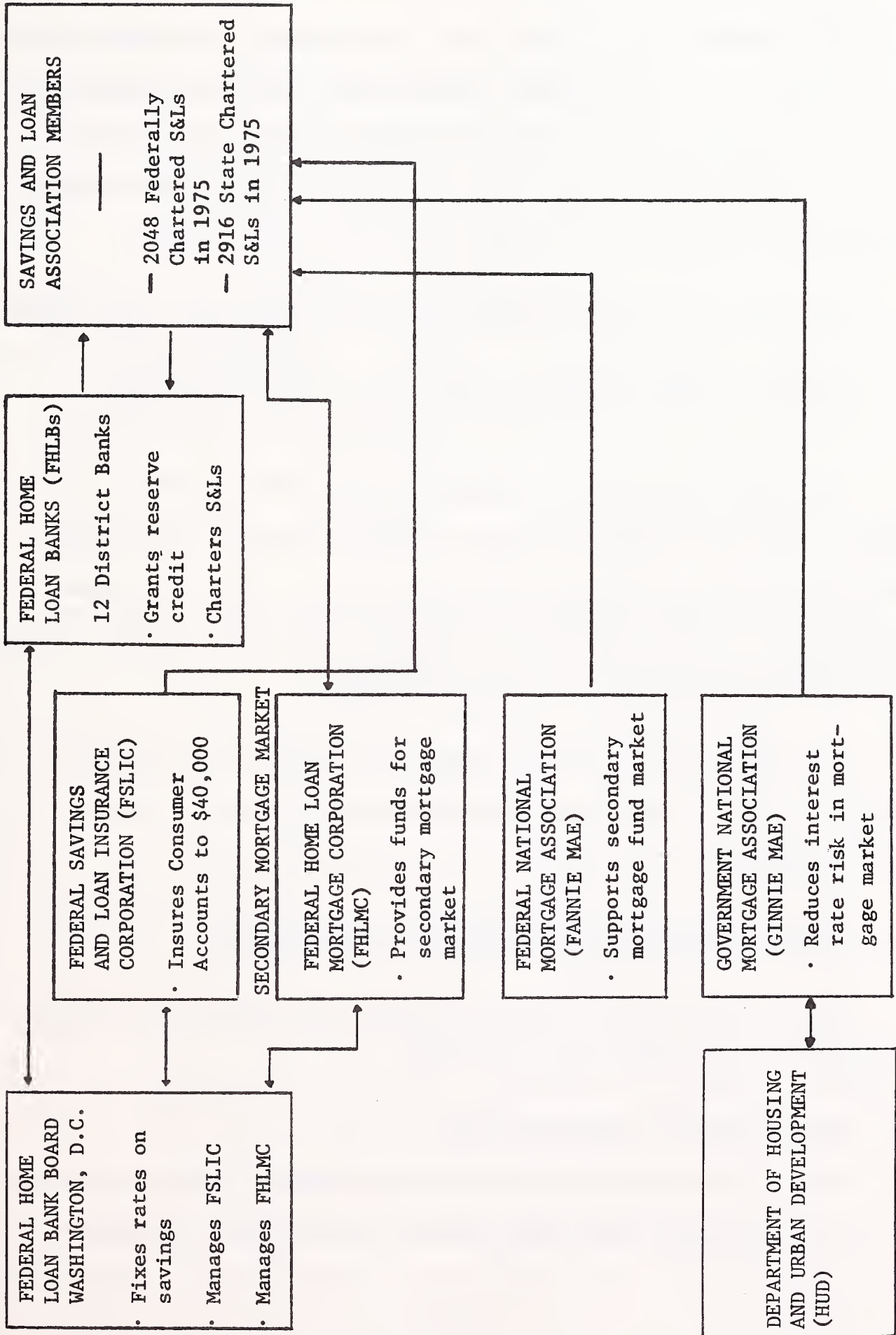
- The savings and loan industry is tightly constrained; it is established and regulated by both state and federal statutes. Over the last decade, the framework within which S&Ls conduct their business has gone through extensive alteration. More influence is being exerted by federal legislation and the Federal Home Loan Bank Board.

- The current administrative organization of the S&L industry is illustrated in Exhibit III-3. The major regulating agency is the Federal Home Loan Bank Board which operates with S&L associations much as the Federal Reserve Board does with commercial banks. The Board establishes the policies that are executed by the 12 district Federal Home Loan Banks (FHLBs). Associations which were members of FHLBs held 98% of total S&L assets in 1975.

- Consumer savings are insured (to \$40,000) by the Federal Savings and Loan Insurance Corporation (FSLIC). Insured associations held 98% of total S&L assets.

- Because of fluctuating money market conditions, the secondary mortgage market is very important to the S&L industry. S&L asset portfolios contain

SAVINGS AND LOAN INDUSTRY ADMINISTRATIVE ORGANIZATION



primarily long-term fixed interest rate home mortgages. The Federal Home Loan Mortgage Corporation (FHLMC) provides funds to the secondary mortgage market by the purchase and sale of S&L loan portfolios. At the close of 1975 the FHLMC held \$3.1 billion in conventional and \$1.8 billion in FHA-VA loans in its portfolio.

- The Federal National Mortgage Association (Fannie Mae) also supports the secondary mortgage market but through the private money market. At the end of 1975, it held \$31.8 billion in mortgages in its loan portfolio.

- The Government National Mortgage Association (Ginnie Mae), a HUD agency, moderates interest rate risk. Ginnie Mae absorbs some of the mortgage discount premiums on fixed-interest rate, long-term mortgage instruments in a rising interest rate market. At the end of 1975, it held \$7.2 billion in mortgages in its loan portfolio.

- The growth of the secondary market has replaced such practices during the 1950s as West Coast S&Ls advertising for savings funds in the East and Mid-West.

B. PRESENT STRUCTURE OF THE SAVINGS AND LOAN INDUSTRY

In outlining the S&L industry structure, some perspective is gained by contrasting S&Ls with commercial banks.

1. COMPARISON WITH COMMERCIAL BANKS

- S&L associations differ from commercial banks in the following ways:
 - Commercial banks accept demand deposits, operate checking

accounts, and use the deposits in a highly leveraged manner to make loans and investments. To date, S&Ls cannot.

- Commercial banks can extend consumer credit through bank credit cards. S&Ls cannot.

- Commercial banks are allowed highly flexible asset and liability portfolios. S&Ls primarily borrow short (savings deposits) and lend long (home mortgages).

- S&Ls are allowed to offer a higher term structure of interest rates than are commercial banks.

- S&L associations have a mutual type of corporate structure. Virtually all commercial banks are stock companies.

● The number of S&Ls was 35% of that of commercial banks in 1975, as compared with 47% in 1960 (Exhibit III-4). The number of S&Ls in 1975 was 21% less than in 1960. The number of commercial banks was 6% more. By contrast, the number of S&L branches increased by a factor of 6.5 in this 15-year period. The number of commercial bank branches increased by a factor of 2.8. Despite the impact of S&L consolidations and mergers, the comparatively rapid growth of S&L branching operations has improved the total outlet position of S&Ls relative to commercial banks.

● The total of S&L outlets was 35% of that of commercial bank outlets in 1975, as compared with 33% in 1960. The total of S&L outlets increased by a factor of 1.9 in this 15-year period. The total of commercial bank outlets increased by a factor of 1.8. This improvement in the total outlet position of S&Ls relative to commercial banks is important because consumers have a strong preference for conducting their financial

EXHIBIT III-4

RELATIVE GROWTH OF SAVINGS AND LOAN ASSOCIATIONS
AND COMMERCIAL BANKS

	NUMBER OF INSTITUTIONS	NUMBER OF BRANCHES	TOTAL OUTLETS	GROWTH FACTOR	SAVINGS DEPOSITS (\$ BILLION)	GROWTH FACTOR	SHARE OF CONSUMER SAVINGS
<u>SAVINGS & LOANS</u>							
1960	6,320	1,611	7,931		62.2		38%
1975	4,964	10,441	15,405	1.9	286.4	4.3	38%
<u>COMMERCIAL BANKS</u>							
1960	13,484	10,619	24,103		61.6		39%
1975	14,360	29,929	44,289	1.8	315.6	5.1	42%

transactions on a local basis.

- Although the percentage of S&L outlets relative to commercial bank outlets increased between 1960 and 1975, the percentage of S&L deposits relative to commercial bank deposits markedly decreased. Total savings deposits of S&Ls were 84% of those of commercial banks in 1975, as compared with 101% in 1960. This weakening in the total deposit position of S&Ls relative to commercial banks is also seen in relative shares of total consumer savings. The S&L share of consumer savings was 38% in both 1960 and 1975. However, the commercial bank share increased from 39% in 1960 to 42% in 1975 (Exhibit III-4).
- These comparisons of S&L and commercial bank growth rates suggest that the convenience of additional services which banks offer (such as third-party payment mechanisms) is more important to consumers than the convenience of additional locations. The "one-stop" location for financial transactions is so convenient that many consumers are persuaded to maintain savings accounts where they bank and are willing to forego the fractional interest rate advantage offered by S&Ls.
- Exhibit III-5 shows that the assets of S&Ls are much less concentrated than the assets of commercial banks. In 1975 the asset share of the top 10 commercial banks was greater than the asset share of the top 100 S&Ls. In 1975, there were 4262 S&Ls. 86% had assets of less than \$100 million, representing 34% of total S&L assets (Exhibit III-6).
- The following factors have influenced the corporate structure and

EXHIBIT III-5

RELATIVE CONCENTRATION OF ASSETS OF
SAVINGS AND LOAN AND
COMMERCIAL BANKS IN 1975

	ASSET SHARE OF TOP 10 INSTITUTIONS	ASSET SHARE OF TOP 100 INSTITUTIONS
SAVINGS AND LOANS	9%	30%
COMMERCIAL BANKS	35%	69%

EXHIBIT III-6

DISTRIBUTION OF SAVINGS AND LOAN ASSOCIATIONS
IN 1975 BY ASSET SIZE

ASSET SIZE (MILLIONS)	NUMBER OF ASSOCIATIONS	% OF TOTAL	CUMULATIVE %	ASSETS (\$MILLION)	% OF TOTAL	CUMULATIVE %
UNDER \$1	426	8.6%	8.6%	\$ 234	.1%	.1%
\$ 1 and under \$ 5	489	9.9	18.5	1,430	.4	.5
\$ 5 and under \$ 10	503	10.1	28.6	4,021	1.2	1.7
\$ 10 and under \$ 25	1,164	23.4	52.0	20,836	6.1	7.8
\$ 25 and under \$ 50	1,019	20.5	72.5	38,416	11.3	19.1
\$ 50 and under \$100	661	13.3	85.8	50,361	14.9	34.0
\$100 and under \$150	262	5.3	91.1	34,050	10.1	44.1
\$150 and under \$200	139	2.8	92.9	25,532	7.5	51.6
\$200 and under \$300	116	2.3	96.2	28,304	8.4	60.0
\$300 and over	185	3.7	100.0%	135,211	40.0	100.0%
TOTAL	4,964	100.0%		\$338,395	100.0%	

asset concentration of the S&L industry:

- (1) S&Ls operate locally, providing financial services in the primary home mortgage market and the consumer savings area.
 - (2) Large commercial banks operate both nationally and internationally with both consumer and corporate funds.
 - (3) Large commercial banks have a well established correspondent relationship with smaller commercial banks. S&Ls do not have such arrangements.
 - (4) Until 1976 all federal S&Ls were mutual associations. Many states still only allow the formation of mutual S&Ls, which inhibits consolidation and merger.
- S&L mergers and acquisitions will accelerate over the next decade because of intensified competition from banks and credit unions.
 - The new applications derived from electronics technology (such as EFTS, automatic teller systems, etc.) will tend to support merger as a way of sharing costs.
2. SAVINGS AND LOAN INDUSTRY STRUCTURE
- The assets of savings and loans grew rapidly between 1960 and 1975 from \$71.5 billion to \$338.4 billion, an AAGR of 10.9%. With stable growth in the national economy, an AAGR of at least 10% should continue through the 1970s.
 - S&L assets are not held throughout the country uniformly. Major factors causing variation are population growth, state laws and regulations,

and the early strength gained by some associations through the efforts of professional money managers.

● In 1975, 10 states had accounted for 61% of S&L total assets. California led with 17% of all assets (Exhibit III-7). The largest S&Ls are located in California with all but one S&L having assets of \$2 billion or more in 1976 located there (Exhibit III-8). Factors which have made California such fertile ground for S&L growth are:

- the population explosion of the 1950s
- demand for housing
- ability to form S&L stock companies
- liberal state branching regulations
- legal ability to form S&L holding companies.

● State chartered associations in 1975 constituted 59% of the total number of S&Ls. As shown in Exhibit III-9, their number declined 34% between 1960 and 1975. This was due to a combination of consolidation and merger along with some conversion to federal charter. However, their assets grew fourfold between 1960 and 1975.

● Although federal S&Ls constituted only 41% of the total number of sales in 1975, they held 58% of total S&L assets. Their assets grew fivefold between 1960 and 1975.

● The most prevalent form of S&L charter is the mutual organization. In 1975 they numbered 4255 as opposed to 709 S&L stock companies.

EXHIBIT III-7

LEADING STATES IN SAVINGS AND LOAN
ACTIVITY IN 1975

STATES	TOTAL ASSETS (\$BILLION)	%	NUMBER OF ASSOCIATIONS	%	AVERAGE ASSETS/ASSN. (\$MILLION)
CALIFORNIA	\$ 58	17%	169	3%	\$ 343
ILLINOIS	24	7	124	2	194
FLORIDA	25	7	441	9	57
OHIO	24	7	423	9	57
NEW YORK	19	6	139	3	137
TEXAS	16	5	306	6	52
PENNSYLVANIA	15	4	450	9	33
NEW JERSEY	14	4	242	5	58
INDIANA	6	2	170	3	35
NORTH CAROLINA	6	2	180	4	33
10 LEADING STATES	207	61	2644	53	78
OTHER 40 STATES	131	39	2320	47	56
TOTAL	\$ 338	100%	4964	100%	\$ 68

EXHIBIT III-8

LEADING SAVINGS AND LOAN ASSOCIATIONS IN 1976
BY TOTAL ASSETS

ASSOCIATION	RANK	1976 ASSETS (\$BILLIONS)	% INCREASE OVER 1975 ASSETS
HOME SAVINGS * LOS ANGELES, CALIF.	1	\$ 7.69	22.4 %
GREAT WESTERN SAVINGS * BEVERLY HILLS, CALIF.	2	6.33	18.2
AMERICAN SAVINGS * BEVERLY HILLS, CALIF.	3	6.20	22.2
CALIFORNIA FEDERAL LOS ANGELES, CALIF.	4	3.94	13.4
GLENDALE FEDERAL GLENDALE, CALIF.	5	2.69	21.8
IMPERIAL SAVINGS * SAN DIEGO, CALIF.	6	2.35	15.2
HOME FEDERAL SAN DIEGO, CALIF.	7	2.30	23.5
GIBRALTAR SAVINGS * BEVERLY HILLS, CALIF.	8	2.23	23.2
FIRST FEDERAL DETROIT, MICHIGAN	9	2.18	24.5
CITIZENS SAVINGS * SAN FRANCISCO, CALIF.	10	2.00	12.7
TOTAL		\$37.9	

* STOCK COMPANY

EXHIBIT III-9

DISTRIBUTION OF ASSOCIATIONS AND ASSETS
BETWEEN FEDERAL AND STATE
SAVINGS AND LOANS

NUMBER OF ASSOCIATIONS				ASSETS (\$ BILLION)		
YEAR	FEDERAL	STATE	TOTAL	FEDERAL	STATE	TOTAL
1960	1873	4447	6320	\$ 38.5	\$ 33.0	\$ 71.5
1965	2011	4174	6185	66.7	62.9	129.6
1970	2067	3602	5669	96.3	79.9	176.2
1975	2048	2916	4964	\$195.4	\$143.0	\$338.4

- Although stock companies constituted 14% of total S&L associations, they held 21% of aggregate S&L assets. As Exhibit III-10 illustrates, California remained the leader with 52% of all stock company assets.
- Six of the 10 largest S&Ls are stock companies. Until 1975 only a few states allowed this structure to exist for S&Ls. Since 1976, however, several S&L associations were allowed to apply to the Federal Home Loan Bank Board for conversion to stock companies. This regulatory change has induced many state and federal S&L associations to convert to stock companies. A rise in consolidations and mergers has accompanied this conversion.
- The composition of savings accounts at S&Ls has changed since 1966. Federal regulations in that year allowed S&Ls and commercial banks to begin offering a variety of certificate accounts for savings with a guaranteed term between 90 days and 6 years. By the end of 1975, savings certificates represented 57% of total savings held by S&Ls (Exhibit III-11). This has tended to decrease the activity rate on total savings accounts. The activity rate is currently estimated at 2 1/2 transactions/month on pass book accounts.
- The number of savings accounts rose from 29.5 million in 1960 to 68.1 million in 1975, for an AAGR of 5.7% (Exhibit III-12). Through 1976, the number grew to 75.5 million. The size of the average savings account increased from \$2,110 in 1960 to \$3,912 in 1975, an AAGR of 4.2%. Through 1976, the average size grew to \$4,120.

EXHIBIT III-10

DISTRIBUTION OF SAVINGS AND LOAN
STOCK COMPANIES IN 1975

STATE	NUMBER OF ASSOCIATIONS	TOTAL ASSETS (\$BILLION)	% OF TOTAL
CALIFORNIA	79	\$ 36.9	52 %
TEXAS	198	10.0	14
OHIO	95	8.1	11
ILLINOIS	71	2.6	4
OTHER 46 STATES	266	13.4	19
TOTAL	709	\$ 71.0	100 %

EXHIBIT III-11

SAVINGS AT SAVINGS AND LOAN ASSOCIATIONS IN 1975
BY TYPE OF ACCOUNT

YEAR	PASS BOOK (%)	CERTIFICATE (%)
1967	77.8 %	22.2 %
1968	77.0	23.0
1969	68.7	31.3
1970	59.4	40.6
1971	54.6	45.4
1972	50.6	49.3
1973	46.7	53.3
1974	44.1	55.9
1975	42.7 %	57.3 %

EXHIBIT III-12

NUMBER AND SIZE OF SAVINGS ACCOUNTS
AT SAVINGS AND LOANS

	NUMBER OF ACCOUNTS (MILLIONS)	AVERAGE SIZE OF ACCOUNT (\$)
1960	29.5	\$ 2,110
1965	40.7	2,711
1970	48.2	3,038
1974	63.6	3,819
1975	68.1 *	3,912 *
1976	73.1 *	\$ 4,120 *

*ESTIMATED

- At the close of 1975, mortgage loans on the books of all S&Ls totaled \$278.7 billion (Exhibit III-13). This was 83% of total S&L assets. The mortgage loan portfolio increased at an AAGR of 10.8% between 1960 and 1975.
- Association loans to consumers for other than home mortgages have expanded rapidly during recent years. They rose from \$1.9 billion in 1970 to \$6.9 billion in 1975, an AAGR of 29.4%. This was more than twice the AAGR of 13.1% for mortgage loans in this same 5-year period. The major factor in this growth was the permission granted S&Ls by the Housing Act of 1968 to loan up to 10% of their assets to consumers for mobile homes.
- Non-mortgage consumer loans accounted for only 2 % of total S&L assets in 1975. This share will increase rapidly if and when Congress liberalizes the lending powers of S&Ls.
- The number of mortgage loans at all S&Ls stood at 13.5 million at the end of 1975. The number of other consumer loans was 1.6 million, for a total of 15.1 million loans outstanding. The total of loans outstanding at the end of 1976 is estimated at 15.8 million.

C. SAVINGS AND LOAN GROWTH AND PERFORMANCE

1. GROWTH

- Except for temporary dislocations in the money markets the S&L industry has experienced remarkable and sustained growth from 1960 to 1975. Data have been summarized in Exhibit III-14 to highlight significant operational

EXHIBIT III-13

GROWTH OF LOAN PORTFOLIO AT SAVINGS AND LOANS

YEAR- END	MORTGAGE LOANS OUTSTANDING (\$ BILLION)	OTHER CONSUMER LOANS OUTSTANDING (\$ BILLION)	NUMBER OF MORTGAGE LOANS (MILLIONS)	NUMBER OF OTHER CONSUMER LOANS (MILLIONS)	TOTAL NUMBER OF LOANS OUTSTANDING (MILLIONS)
1960	\$ 60.0	\$ NA	7.6	NA	7.6
1965	110.3	NA	10.0	NA	10.0
1970	150.3	1.9	11.0	.7	11.7
1975	278.7 *	6.9	13.5 *	1.6	15.1
1976	\$ 306.6 *	\$ 8.2 *	13.9 *	1.9 *	15.8

* ESTIMATED

EXHIBIT III-14

SAVINGS AND LOAN OPERATIONAL CHARACTERISTICS

	1960	1965	1970	1975	GROWTH FACTOR
NUMBER OF ASSOCIATIONS	6320	6185	5669	4964	0.8
TOTAL ASSETS (\$ BILLION)	\$71.5	\$129.6	\$176.2	\$338.4	4.7
TOTAL DEPOSITS (\$ BILLION)	\$62.2	\$110.3	\$146.4	\$286.4	4.3
TOTAL LOANS (\$ BILLION)	\$60.2	\$110.7	\$152.2	\$285.6	4.8
NUMBER OF SAVINGS ACCOUNTS (MILLIONS)	29.5	40.7	42.2	73.1	2.5
NUMBER OF LOAN ACCOUNTS (MILLIONS)	7.6	10.0	11.7	15.1	2.0
NUMBER OF EMPLOYEES (THOUSANDS)	71.7	97.6	102.0	175.5	2.4
OPERATING INCOME (\$ BILLION)	\$ 3.7	\$ 7.1	\$11.0	\$ 29.4	7.9
NET INCOME AFTER TAXES (\$ BILLION)	\$.58	\$.82	\$.90	\$ 1.51	2.6
OPERATING MARGIN (%)	15.5%	11.6%	8.2%	6.2%	0.4

* SOURCE: 1976 SAVINGS & LOAN

characteristics.

2. PERFORMANCE

- A general idea of performance measurement for a typical S&L can be gained from a comparison of average S&L operating characteristics as shown in Exhibit III-15.
- The increase of average S&L personnel by a factor of only 3 came about through increased operating efficiency achieved by using on-line computer automation. The increased complexity of S&L operations coupled with the large increase in the number of S&L branches would otherwise have caused the number of personnel to grow at a much more rapid rate.
- The decline in operating margins makes S&Ls good candidates for cost effective service proposals.

3. INFLUENCING FORCES

- The savings and loan industry has been evolving from a provider of savings deposits and mortgage loan services to a provider of an increasing range of consumer financial services. This trend has accelerated under the pressures of competition with other financial institutions and with new service opportunities created by advances in electronic technology.
- The market position of S&Ls nationwide has been weakening. Two comparisons which reveal this trend are:
 - S&Ls held a 38% share of total consumer savings in both 1960 and 1975, while banks increased their share from 39% in 1960 to 42%

EXHIBIT III-15

AVERAGE SAVINGS AND LOAN ASSOCIATION

PERFORMANCE MEASUREMENTS

	1960	1965	1970	1975	GROWTH FACTOR 1960-1975
TOTAL ASSETS (\$ MILLION)	\$11.3	\$21.0	\$31.1	\$68.2	6.0
TOTAL DEPOSITS (\$ MILLION)	\$ 9.8	\$17.8	\$25.8	\$53.7	5.5
TOTAL LOANS (\$ MILLION)	\$ 9.5	\$17.9	\$26.8	\$57.5	6.0
NUMBER OF SAVINGS ACCOUNTS	4,670	6,580	8,500	13,720	2.9
NUMBER OF LOAN ACCOUNTS	1,200	1,620	2,060	3,040	2.5
NUMBER OF EMPLOYEES	11	16	18	35	3.2
OPERATING INCOME (\$ MILLION)	\$.6	\$ 1.1	\$ 1.9	\$ 5.9	9.8
NET INCOME AFTER TAXES (\$ THOUSAND)	\$ 92	\$132	\$159	\$304	3.3
OPERATING MARGIN (%)	15.5%	11.6	8.2	6.2%	0.4

in 1975.

- S&Ls share of total pass book savings deposits declined from a high of 42% in 1964 to 33% in 1973, while banks increased their share from 34% to 39%. Pass book savings tend to indicate new savings accumulations.

- Three factors account for the declining trend in total market share.

- The interest rate differential has declined to the current 1/4% level. This has resulted in significant consumer preference for accepting convenience at banks rather than the slight rate advantage at S&Ls.

- Commercial banks have nearly three times as many locations as S&L associations. There is a strong correlation between share of consumer deposits and share of financial office locations.

- Commercial banks offer full-service banking, including third-party payments or checking accounts; they offer the consumer the convenience of saving where he banks.

- Since the 1960s, the money markets for residential financing have exhibited the following characteristics and trends.

- Residential financing has become one of the largest users of capital and credit.

- The supply of residential credit has been marked by high volatility. This has decreased the value of S&L portfolios.

- S&L associations have become the major source of residential credit. In periods of uncertainty this has made S&Ls less competitive than commercial banks.

- The secondary market has become a significant source of funds for residential financing during cyclical periods in the economy. The secondary market greatly helped both the value and flexibility of S&L asset portfolios.
- The asset structure of residential mortgages has become more liquid and marketable. This has increased the ability of S&Ls to compete with commercial banks in money markets.
- The rate premium that residential mortgages enjoyed over other long-term securities such as AAA corporate bonds has disappeared. This has tended to increase competition between S&Ls and commercial banks.
- The stability of money markets has been seriously eroded. Instability has resulted from a combination of such factors as increased use of manipulative, federal, fiscal and monetary policy, unanticipated stresses such as the oil crisis, and the rapid exchange of mobile international funds from one currency to another. The consequence has been a rapid shift in interest rates and S&L savings flows. Uncertainty in money markets has increased competition between S&Ls and other financial intermediaries, commercial banks and credit unions in particular.
- Increased uncertainty in money markets in the 1960s fostered federal regulatory and legislative changes. Some of the regulations were the product of competition between the Federal Reserve and the Federal Home Loan Bank, each attempting to overcome perceived disadvantages for its members. Highlights are:

- In 1966 Congress passed legislation placing maximum interest ceilings on S&L savings accounts. The rate differential, now only 1/4% between S&L savings and commercial bank savings gives some protection to S&Ls in competing for consumer savings.
- In 1970 federal regulations authorized S&Ls to issue a wide assortment of term savings accounts. This has permitted S&Ls to lengthen the term structure of their liability portfolio. This tends to increase their financial flexibility and make them more competitive.
- In 1975 the Federal Home Loan Bank Board loosened many restrictions on how S&Ls can conduct their business. The result has been to enable the S&Ls to become more competitive with commercial banks. The regulation revisions were oriented toward making S&Ls "family finance centers."
- As a result of federal regulatory and legislative changes, S&L associations are less insulated from money market fluctuations and from competition from other financial institutions. Association managers have had to become increasingly more knowledgeable and responsive to economic and competitive trends.
- S&Ls pioneered the use of on-line computer systems for their day-to-day operations. The on-line systems have increased teller productivity, greatly reduced transaction errors, and increased customer service.
- S&Ls have continued to take the lead in technological innovation. They frequently use technology to offer consumers convenience services in

an attempt to offset the competitive edge enjoyed by commercial banks in the areas of funds transfer and consumer credit services.

- Electronic Funds Transfer (EFT) technology is rapidly developing in two areas:

- Automated Clearing Houses (ACHs) are currently set up by associations of commercial banks to handle such payment mechanisms as direct deposit of payroll, social security payments and preauthorized loan payments. To date S&Ls have not had access to ACHs equal to that of commercial banks. S&Ls are countering by a combination of legal action and development of their own EFT networks, such as the California Savings Association Central Corporation network.

- S&Ls are most vigorous in pursuing electronic systems to provide improved consumer services. S&Ls plan to use Automatic Teller Machine (ATM) and Point of Sale (POS) devices to increase their deposits and increase their customer base. There were over 40 such experiments authorized by FHLBs and state agencies. Some representative projects are outlined in Exhibit III-16.

- S&Ls in six states have been authorized to provide interest-bearing NOW accounts. State chartered S&Ls in three more states can provide non-interest bearing NOW accounts. The transactions currently flow through the normal check clearing system to an intercept bank designated by the S&L. This method will give way to either associations of S&Ls developing their own clearing systems, or S&Ls gaining equal access to the Federal Reserve System clearing system.

EXHIBIT III-16

REPRESENTATIVE SAVINGS AND LOAN ELECTRONIC FUNDS TRANSFER SYSTEM DEVELOPMENTS

DEVELOPER	SYSTEM NAME	NO. OF STATES	NO. OF ASSNS.	DESCRIPTION
FIRST FEDERAL S&L ASSN. OF LINCOLN, NEBRASKA	THE MONEY SERVICE FRANCHISE SYSTEM	20	24	ON-LINE POS/ATM SYSTEM IN SUPERMARKETS AND OTHER OUTLETS ALLOWS DEPOSITS, WITHDRAWALS, INQUIRIES, STATEMENT ACCOUNTS, AND THIRD-PARTY PAYMENTS (WHERE ALLOWED).
BUCKEYE FEDERAL S&L ASSN. (OHIO)	PASS*CARD FRANCHISE SYSTEM	20	61	ON-LINE POS SYSTEM IN SUPERMARKETS AND DEPARTMENT STORES ALLOWS CHECK CASHING (WHERE ALLOWED), DEPOSITS AND WITHDRAWALS FROM SAVINGS ACCOUNTS, LOAN PAYMENTS, AND BALANCE INQUIRIES.
TWIN CITY FEDERAL S&L (MINNESOTA)	PASS*CARD	1	1	ON-LINE POS/ATM SYSTEM. ATM AT AIRPORT ALLOWS DEPOSITS AND WITHDRAWALS, LOAN PAYMENTS, AND CHECK CASHING. A 13-TERMINAL POS SYSTEM AT SUPERMARKETS AND DEPARTMENT STORES ALLOWS SAVINGS DEPOSITS AND WITHDRAWALS AND CHECK CASHING.

EXHIBIT III-16 (CONTD.)

REPRESENTATIVE SAVINGS AND LOAN ELECTRONIC FUNDS TRANSFER SYSTEM DEVELOPMENTS

DEVELOPER	SYSTEM NAME	NO. OF STATES	NO. OF ASSNS.	DESCRIPTION
GLENDALE FEDERAL SAVINGS (CALIF.)	EXPERIMENTAL EFT SYSTEM	1	1	A 125-TERMINAL POS SYSTEM WITH A SUPER-MARKET CHAIN, THE SYSTEM WAS RECENTLY TERMINATED FOR NOT BEING COST EFFECTIVE IN ITS PRESENT CONFIGURATION. THE SYSTEM PLACED A TERMINAL AT EACH CHECKSTAND, OPERATED A CREDIT SYSTEM USING TRW IN WHICH GLENDALE FEDERAL GUARANTEED ALL CHECKS CASHED, AND ALLOWED DIRECT DEPOSITS AND WITHDRAWALS FROM PASS BOOK ACCOUNTS.
CALIFORNIA SAVINGS ASSN. CENTRAL CORP.	EFT NETWORK ACH SYSTEM	1	100	A CORPORATION SPONSORED BY OVER 100 CALIFORNIA S&L's, IT HAS UNDER DEVELOPMENT EFT SWITCHING WITH ACH CAPABILITY. A SYSTEM IS IN AN ACCEPTANCE TEST WITH DATE LINE SERVICE CORP., AND POMONA FIRST FEDERAL, MERCURY SAVINGS AND LOAN AND SAN DIEGO FEDERAL IS DUE IN 1977.

D. FUTURE TRENDS

- The trend toward the convergence of S&Ls and commercial banks as financial intermediaries is expected to continue over the next decade, as S&Ls acquire third-party payment mechanisms and greater consumer service powers.

- Congressional movement toward sweeping reform of the structure of the nation's financial institutions includes consideration of the following measures.
 - Extension of federal ceilings on savings interest rates for a term of 5-1/2 years.
 - Permission for all depository institutions, including S&Ls, to offer checking or other third-party transfer accounts. This would give them access to ACHs and the Federal Reserve check clearing system.
 - Permission for federal associations to invest a portion of their assets in short-term securities such as consumer loans, corporate bonds and commercial paper.
 - Permission for federal S&Ls to issue variable-interest rate home mortgages.

- There is little doubt that the computer and communications technology for national EFT networks will soon be available. The second report of the National Commission on Electronic Funds Transfers recognized this maturing technology in recommending:

- that Congress act to insure that EFT terminals would not be given the restrictive interpretation of financial branches.
 - that EFT networks be allowed to cross state lines to serve national market areas.
 - that depository institutions be allowed to share EFT networks at their discretion subject to antitrust laws.
 - that the Federal Reserve Board permit all depository institutions equal access to ACHs.
 - that the Federal Reserve Board not discriminate against private market development of alternative ACHs.
 - that the Federal Government should not become operationally involved in POS switching and clearing facilities in the foreseeable future.
- The impact of the Commission's recommendations if enacted by Congress would be:
 - The development of competing electronic funds transaction and clearing networks by the private sector.
 - The possible interconnection between EFT networks to create regional and national EFT networks.
 - The development of alternate ACHs by the private sector to serve one or more types of financial intermediaries.
 - The recent decision of Visa, Inc. (formerly National BankAmericard Inc.) to allow access to their network to those S&Ls which issue consumer credit is a portent of the coming trend.

- Interviews indicate that many S&L managers expect that federal S&Ls within the next 2 - 5 years will be given greater power in the area of consumer service, particularly the ability to have checking accounts. S&L managers plan a 250% increase in the procurement of MICR sorters and readers during 1976-77. By 1977, 7% of all associations expect to be processing third party payments.

IV. USE OF EDP

IV. USE OF EDP

A. THE SAVINGS AND LOAN INDUSTRY IS HIGHLY AUTOMATED

- In 1976, 83% of all S&Ls used some form of automation, either in-house or services. Nearly all institutions in the medium and larger categories used EDP, while 60% of the small S&Ls were users. The latter figure is growing rapidly and by 1981, 80% of small S&Ls will be users.
- In the base year S&Ls spent \$355 million for EDP, a figure that represents about 1.25% of revenues. By 1981, expenditures will be \$676 million annually and will amount to approximately 1.5% of revenues. The AAGR for EDP expenditures is 14% over the forecast period in parallel with the industry's projected revenue growth.
- The degree of automation when expressed in terms of S&L industry asset value is striking. In 1976, 95% of total S&L assets were managed using automated systems. By 1981, that portion will be 99.6%!
- The smaller the S&L, the more likely it is to use outside computer services as opposed to establishing an in-house EDP function. Exhibit IV-1 shows the relative utilization of in-house and outside EDP by S&L size.

EXHIBIT IV-1

RELATIVE UTILIZATION OF IN-HOUSE EDP
AND COMPUTER SERVICES BY S&Ls
1976-1981

S&L SIZE CATEGORY	IN-HOUSE (%)		COMPUTER SERVICES (%)		NO EDP	
	1976	1981	1976	1981	1976	1981
VERY LARGE	97	99	3	1	0	0
LARGE	41	42	59	57	Trace	0
MEDIUM	9	10	88	90	3	0
SMALL	3	5	62	75	35	20

B. EDP EXPENDITURES FOR S&L FUNCTIONS

- Functionally, EDP is used by S&Ls in five major activities:
 - Savings
 - Loans
 - Administration
 - Financial Management
 - Special Consumer Services

The distribution of EDP expenditures across these categories in 1976 and projected to 1981 is given in Exhibit IV-2.

- The primary "consumer interface" areas of the savings and loan functions taken together accounted for the lion's share (80%) of all EDP expenditures in 1976. This situation is not expected to change dramatically.
- The smallest expenditure area (in 1976) was for Special Consumer Services, but this is the most rapidly growing area and represents an interesting target of opportunity because most of the services that fall within this functional area will be new to S&Ls. Services that fall within this area include such things as automatic payroll and social security check deposits, consumer credit, EFTS, IRA and Keogh accounts, income tax preparation and others. A complete list is given in Chapter V.
- The Financial Management Function accounts for a fairly significant portion of the EDP dollar in the S&L industry, about 13% of total. In particular, RCS services for computer-aided financial planning are increasing in importance.

EXHIBIT IV-2

S&L EDP EXPENDITURES BY FUNCTION AND SIZE
1976-1981

S&L SIZE CATEGORY	EDP EXPENDITURES BY FUNCTION (\$ millions)																	
	SAVINGS			LOAN			ADMINISTRATION			FINANCIAL MGMT.			SPECIAL CONSUMER		TOTAL			
	1976	1981	AAGR (%)	1976	1981	AAGR (%)	1976	1981	AAGR (%)	1976	1981	AAGR (%)	1976	1981	AAGR (%)	1976	1981	AAGR (%)
VERY LARGE	22.3	39.4		14.0	31.0		3.2	5.5		7.7	14.4		2.0	10		49.2	100.3	
LARGE	97.4	168.6		57.6	109.1		6.4	12.5		23.3	44.0		6.0	24.0		190.7	358.2	
MEDIUM	46.7	80.7		27.9	52.6		3.3	4.7		11.4	19.0		3.0	12.0		92.3	169.0	
SMALL	12.6	23.8		6.3	12.2		0	2.0		3.2	6.1		1.0	4.0		23.1	48.1	
TOTAL	179.0	312.5	10	105.8	204.9	15	12.9	24.7	15	45.6	83.5	13	12.0	50.0	32	355.3	675.6	14

C. IN-HOUSE EDP

● In 1976, S&Ls spent over \$241 million for in-house EDP which is expected to grow to nearly \$460 million in 1981. Of the total in-house budget, on average, 38% is for personnel and the balance for hardware and communications. The in-house expenditure breakdown is shown in Exhibit IV-3.

● The average growth rate for EDP expenditures on terminals and for central processing is expected to remain nearly equal due to the following factors:

- The relative cost of teller terminals is declining.

The newer, modular terminals use shared devices permitting two teller stations per terminal unit. The forecast assumed that 60% of the new teller terminal growth would be for dual teller terminals.

- The on-line interactive nature of the savings and loan functions require central processing to handle 5-6 transactions/second while maintaining a 2-4 second transaction response time. Since over 80% of the EDP dollars are spent on the consumer interface function, relative central processing costs will not decrease as much as for other types of interactive computing applications.

- The lack of industry concentration has resulted in a relatively large number of central processors, each attached to a local (state-wide at most) terminal networks. The same

EXHIBIT IV-3

S&L EXPENDITURES FOR EDP IN-HOUSE

CATEGORY	1976 ACTUAL (\$M)	1981 FORECAST		AAGR (%) '76-'81
		(\$M)	% OF TOTAL	
CENTRAL PROCESSING (CPU, PERIPHERALS, ETC.)	43.0	83.0	18	14
REMOTE HARDWARE (TELLER TERMINALS, CONSUMER STATIONS, ETC.)	74.3	139.7	30	13
DATA COMMUNICATIONS	30.9	58.6	13	14
PERSONNEL	93.0	178.0	39	13
TOTAL	241.2	459.3	100	14

economics of CPU scale are not as readily applicable in the S&L industry until major structural changes take place.

- Survey results from 180 S&Ls with in-house EDP equipment showed that IBM has nearly half (46%) of the current S&L installed base in terms of numbers of installations. We did not compute the dollar market shares of leading mainframes for this study. Suffice it to say that all of the six large and very large S&Ls surveyed used IBM equipment. Exhibit IV-4 gives the survey results. The four main vendors and their market shares (again in numbers of installations) are:

. IBM - 46%	. Burroughs - 16%
. NCR - 25%	. Univac - 10%

- The average expenditure of in-house EDP users by size category is given together with a list of typical mainframes in Exhibit IV-5.

- In 1976, S&Ls operated 32,345 teller terminals, 3,446 CRTs for administration, 941 other administrative terminals and 132 automated on-line teller machines. This total of nearly 36,000 units is expected to double to nearly 68,000 by 1981.

- Because of the on-line transactional nature of the S&L business, data communications is a major expense item. S&L communications networks are regional in nature (never more than statewide), seldom spanning more than 800 miles. Network costs are high, however, because they currently use dedicated lines to tie terminals to the CPU. Appropriate use of packet switching such as offered by a few VAN (value-added network) vendors may ultimately serve to reduce line costs substantially.

EXHIBIT IV-4

DISTRIBUTION OF IN-HOUSE EDP CENTRAL PROCESSORS
AT SAVINGS AND LOAN ASSOCIATIONS

MANUFACTURER	MODEL	NUMBER OF S&Ls SURVEYED	%
IBM	370/158	6	
	370/145	5	
	370/135	19	
	370/125	6	
	360/65	1	
	360/40/50	10	
	360/30/20	10	
	5400s	15	
	1401/1440	3	
	Sys 3	8	
TOTAL		83	45.6
NCR	615	12	
	251	10	
	315	8	
	C 50/100	9	
	C 200/300	7	
TOTAL		46	25.2
BURROUGHS	B 2502/2771	6	
	B 3501/3741	3	
	B 500s	20	
TOTAL		29	16.0
UNIVAC	1106	1	
	9400	15	
	490	2	
TOTAL		18	9.8
OTHERS		4	3.4
GRAND TOTAL		180	100.0

EXHIBIT IV-5

AVERAGE S&L EDP EXPENDITURES
IN-HOUSE USERS

S&L SIZE CATEGORY	ANNUAL REVENUE (\$ THOUSANDS)	ANNUAL AVERAGE EDP EXPENDITURE (\$ THOUSANDS)	TYPICAL MAINFRAME USED
VERY LARGE	150,000	1,500	IBM 370/148
LARGE	20,500	270	IBM 370/135 NCR 251 B 3500
MEDIUM	5,600	72	B 520 IBM 360/30 NCR 201
SMALL	960	10	NONE

D. IN-HOUSE VS COMPUTER SERVICES CHOICE BY USERS

- The very large S&Ls have chosen almost without exception to go the in-house route. They chose to go in-house some time ago, in order to grow more rapidly through branching and through offering consumers extras such as daily interest. The very large S&Ls are likely to remain in-house, although one, Coast Federal, just recently went the other way.
- All other factors being equal, large S&Ls would just as soon stay with computer services organizations. The S&L financial officers interviewed felt that they would rather have the EDP headache go away. They are more concerned with activity in the financial marketplace than with "economies" to be gained from going in-house. Furthermore they are concerned with the software changes coming about with the trend toward consumerism. S&L managers recognize the high cost of software development. The interest in large S&Ls going in-house becomes greater as the S&L asset size approaches \$700 million, and when annual EDP expenditures approach \$0.5 million.
- The medium size S&L is really a relatively small financial organization (see Exhibit III-5). Medium size S&Ls are heavily dependent on outside computer services organizations for their daily processing. Except for the highly innovative organization, or where an S&L is located in a sparsely populated state, medium size S&Ls have chosen the computer services route.
- The manager of a small S&L will, when he can, choose the computer services route. He often can decrease his total EDP costs by giving up his

in-house manual or batch system and going on-line with a computer services vendor. Two of the S&Ls interviewed had gone to computer services within the last several years.

V. APPLICATIONS
ANALYSIS

V. APPLICATIONS ANALYSIS

● As noted in Chapter IV, there are five functional areas in a Savings and Loan company:

- Savings
- Loans
- Administration
- Financial Management
- Special Consumer Services

In this chapter, the myriad applications relating to each function are briefly described and the relative importance of EDP to each illustrated graphically.

● S&L size frequently determines whether or not EDP is used to support or accomplish a given application. However, there may be great differences in the extent to which EDP is utilized by S&Ls within a given size category to solve a given application. An attempt is made in this chapter to sort out the degree of EDP utilization for each application as a function of S&L size, mode of service delivery, and other factors if present.

A. THE SAVINGS FUNCTION

● Applications for the SAVINGS FUNCTION are illustrated in Exhibit V-1. This function includes all the day-to-day business operations that comprise the customer interface for savings handling. The three principal applications groups within this function are:

- Consumer Savings
- Region and Branch Activities
- Savings Administration

● The most important application within the consumer savings group is passbook savings and withdrawals. The application calls for interactive remote computing using slow-speed teller terminals. On average, 2.5 transactions per account per month are executed.

● All other applications within the consumer savings group can be performed by either batch or remote processing. They tend to be discrete events with extremely low transaction rates.

● The Region and Branch Activity group of applications includes branch P&L management and resource balancing. Data is gathered from daily transactions and analyzed to produce periodic management reports used to track performance branch-by-branch, region-by-region.

● The third application group within the savings function is Savings Administration which is primarily concerned with the opening, closing and changing of accounts. Industry statistics state that over the past 15

EXHIBIT V-1

PRINCIPAL APPLICATIONS: SAVINGS FUNCTION

APPLICATIONS GROUP	APPLICATIONS PERFORMED WITHIN GROUP
<p>CONSUMER SAVINGS</p>	<ul style="list-style-type: none"> ● PASSBOOK <ul style="list-style-type: none"> - POSTING OF SAVINGS & WITHDRAWALS - STATEMENT PREPARATION - INTEREST COMPUTATION - ACCOUNT TRANSFERS & CLOSEOUTS ● SAVINGS CERTIFICATE PROCESSING ● MARKET RATE CERTIFICATES ● NEGOTIABLE CERTIFICATES ● INVESTMENT ANNUITIES ● IRA & KEOGH ACCOUNTS
<p>REGIONAL AND BRANCH ACTIVITY</p>	<ul style="list-style-type: none"> ● P&L MANAGEMENT <ul style="list-style-type: none"> - SAVINGS & LOAN ANALYSIS - INCOME/COST PROCESSING ● RESOURCE BALANCING ● JOURNALING
<p>SAVINGS ADMINISTRATION</p>	<ul style="list-style-type: none"> ● ACCOUNT STATUS <ul style="list-style-type: none"> - NEW ACCOUNTS - ACCOUNT CHANGES - DORMANT ACCOUNT CONTROL ● DATA BASE MANAGEMENT

years, the number of savings accounts has increased 6% per year. For every new account opened, there are, on average, at least two changes to existing accounts per year.

- The use of data base systems to create a centralized customer information file has greatly increased the efficiency of Savings Administration. The data base permits the S&L to determine the status of all the accounts belonging to a single customer, permits access to account records by name only, and eliminates multiple address changes with the attendant cost of duplicate mailings.

- The chart given in Exhibit V-2 illustrates the relative importance of EDP to individual applications within the savings function.

B. THE LOAN FUNCTION

- The applications required to service the loan function are shown in Exhibit V-3. This function includes the consumer interface for lending and activities relating to secondary mortgage markets. Applications groups within this function are

- Lending
- Loan Administration
- Real Estate Management
- Secondary Mortgage Markets

80% of the EDP activity in this function relates to the lending application.

EXHIBIT V-2

EDP UTILIZATION: SAVINGS FUNCTION

APPLICATIONS GROUP	APPLICATIONS	S&L SIZE													
		VERY LARGE			LARGE			MEDIUM			SMALL				
		IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT		
CONSUMER SAVINGS	• PASSBOOK SAVINGS	xxx	x	xxx	xxx	x	xxx	xx	xx	xxx	x	xx	xxx	xxx	xxx
	• SAVINGS CERTIFICATES	xxx	x	xxx	xxx	x	xxx	xx	xx	xxx	x	xx	xxx	xxx	xxx
	• MARKET RATE CERTIFICATES	xxx	-	xxx	xx	-	xxx	-	-	-	-	-	-	-	-
	• NEGOTIABLE CERTIFICATES	xxx	-	xxx	xx	-	xxx	-	-	-	-	-	-	-	-
	• INVESTMENT ANNUITY	xxx	-	xxx	xx	-	xxx	-	-	-	-	-	-	-	-
	• IRA & KEOGH ACCOUNTS	xxx	x	xxx	xxx	x	xxx	xx	xx	xxx	x	xx	xxx	xx	xxx
REGIONAL & BRANCH ACTIVITY	• RESOURCE BALANCING	x	-	x	-	-	-	-	-	-	-	-	-	-	-
	• P&L MANAGEMENT	xxx	x	xxx	xxx	x	xxx	x	x	xxx	x	x	xxx	-	-
SAVINGS ADMINISTRATION	• ACCOUNT STATUS	xxx	x	xxx	xxx	x	xxx	xx	xx	xxx	x	xx	xxx	xxx	xxx

- NOT USED
 x LESS THAN 25%
 xx BETWEEN 25% AND 75%
 xxx OVER 75%

IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE PROCESSING

EXHIBIT V-3

PRINCIPAL APPLICATIONS: LOAN FUNCTION

APPLICATIONS GROUP	APPLICATIONS PERFORMED WITHIN GROUP
LENDING	<ul style="list-style-type: none"> ● CONSUMER LOANS <ul style="list-style-type: none"> - Mortgage Loan Processing - Installment Payments - Loan Payoff Computation - Automatic Payments ● IMPOUND ACCOUNTING HANDLING <ul style="list-style-type: none"> - Insurance ● APPRAISALS <ul style="list-style-type: none"> - Computer assisted appraisals using local real estate loan history data base. ● CONSTRUCTION LOANS <ul style="list-style-type: none"> - Progress Payments
LOAN ADMINISTRATION	<ul style="list-style-type: none"> ● LOAN COMMITMENT TRACKING ● LOAN DOCUMENTATION ● LOAN SERVICING
REAL ESTATE MANAGEMENT	<ul style="list-style-type: none"> ● RENTAL PROPERTY ACCOUNTING ● APPRAISALS
SECONDARY MORTGAGE MARKETS	<ul style="list-style-type: none"> ● COMPUTER ASSISTED MORTGAGE MARKET TRADING

- The secondary mortgage market application consists of participation, purchase, sale and servicing of packages of residential mortgages. The application has become important to S&Ls both for increasing revenues and for asset portfolio liquidity. Some 180 S&Ls use the system provided by AMMINET.
- Only 20 S&Ls used computer aided loan appraisal in 1976. This number is expected to increase to over 300 by 1981. The EDP operation involves use of a data base of residential property loan histories.
- The relative importance of EDP to each loan function application is illustrated in Exhibit V-4.

C. THE ADMINISTRATION FUNCTION

- Applications for the ADMINISTRATION FUNCTION are shown in Exhibit V-5. This function includes those items relating to the S&L's internal operations. The three principal applications grows within this function are

- Personnel
- Facilities
- Staff Service

this function accounts for only 4% of EDP expenditures.

- Payroll is frequently handled by commercial banks in exchange for S&L compensatory balances.
- Exhibit V-6 shows how important EDP is to each size category of S&Ls by application.

EXHIBIT V-4

EDP UTILIZATION: LOAN FUNCTION

APPLICATIONS GROUP	APPLICATIONS	S&L SIZE											
		VERY LARGE			LARGE			MEDIUM			SMALL		
		IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
LENDING	<ul style="list-style-type: none"> • CONSUMER LOANS • APPRAISALS • CONSTRUCTION LOANS 	xxx	x	xxx	xxx	x	xxx	-	-	-	-	-	-
		-	xx	xxx	-	x	xxx	-	-	-	-	-	-
		xxx	x	xxx	xxx	x	xxx	xx	xx	xxx	-	-	-
LOAN ADMINISTRATION	<ul style="list-style-type: none"> • LOAN COMMITMENT TRACKING • LOAN DOCUMENTATION • LOAN SERVICING 	xxx	x	xxx	xx	xx	xxx	x	xx	xxx	-	x	xxx
		xx	x	xxx	x	x	xx	x	x	xx	-	x	xx
		xxx	x	xxx	xx	xx	xxx	x	x	xxx	-	-	-
REAL ESTATE MANAGEMENT	<ul style="list-style-type: none"> • RENTAL PROPERTY ACCOUNTING • APPRAISALS 	xxx	-	xxx	xxx	x	xx	-	-	-	-	-	-
		-	xx	xxx	-	x	xxx	-	-	-	-	-	-
		-	x	xxx	-	x	xxx	-	-	-	-	-	-
SECONDARY MORTGAGE MARKET	<ul style="list-style-type: none"> • TRADING 	-	x	xxx	-	x	xxx	-	-	-	-	-	-

- NOT USED
 x LESS THAN 25%
 xx BETWEEN 25% AND 75%
 xxx OVER 75%
 IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE DATA PROCESSING

EXHIBIT V-5

PRINCIPAL APPLICATIONS: ADMINISTRATION FUNCTION

APPLICATIONS GROUP	APPLICATIONS PERFORMED WITHIN GROUP
PERSONNEL	<ul style="list-style-type: none"> ● PERSONNEL RECORDS <ul style="list-style-type: none"> - Affirmative Action - Equal Opportunity - Accounting ● PAYROLL <ul style="list-style-type: none"> - Payroll Systems - Government Reporting
FACILITIES	N/A - None Automated Yet
STAFF SERVICES	<ul style="list-style-type: none"> ● AUTOMATIC DEPOSITS <ul style="list-style-type: none"> - Payroll - Social Security ● PUBLIC FUNDS ACCOUNTING ● DEFERRED COMPENSATION ACCOUNTS

EXHIBIT V-6

EDP UTILIZATION: ADMINISTRATION FUNCTIONS

APPLICATIONS GROUP	APPLICATIONS	S&L SIZE														
		VERY LARGE			LARGE			MEDIUM			SMALL					
		IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT			
PERSONNEL	<ul style="list-style-type: none"> PERSONNEL RECORDS PAYROLL 	xx	xx	xx	x	xx	xx	-	-	xx	xx	-	-	-	-	
		x	xxx	-	-	xx	xx	-	-	xx	xx	-	-	-	-	-
FACILITIES		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
STAFF SERVICES	<ul style="list-style-type: none"> PUBLIC FUNDS ACCOUNT AUTOMATIC DEPOSITS DEFERRED COMPENSATION 	xxx	x	xxx	xxx	x	xxx	x	xxx	xxx	xx	x	xx	x	xx	
		xxx	x	xxx	xxx	x	xxx	x	xxx	xxx	xx	x	xx	x	xx	xx
		x	-	-	x	-	-	-	-	-	-	-	-	-	-	-

- NOT USED
 x LESS THAN 25%
 xx BETWEEN 25% AND 75%
 xxx OVER 75%

IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE PROCESSING

D. THE FINANCIAL MANAGEMENT FUNCTION

● Applications for the FINANCIAL MANAGEMENT FUNCTION are given in Exhibit V-7. This function is basically concerned with money management and corporate accounting and reporting. There are three principal applications groups within this function:

- Financial Planning
- Financial Reporting
- Asset & Liability Management

Responsibility for the data processing operations of the S&L whether in-house or outside usually falls within this functional area.

● Financial planning and forecasting using models and data bases supplied through commercial RCS vendors is growing in importance to the S&L industry. In 1976 over half of the large and very large S&Ls had in-house professional economists using such services for portfolio analysis, money market forecasting and related economic uses.

● Exhibit V-8 shows the importance of EDP to each class of S&L by applications.

E. THE SPECIAL CONSUMER SERVICES FUNCTION

● This "function" is a catch-all for all the services that S&Ls provide or may provide in addition to the basic savings and lending functions.

For the purposes of this study, we have chosen to group these applications under three headings

EXHIBIT V-7

PRINCIPAL APPLICATIONS: FINANCIAL MANAGEMENT FUNCTION

APPLICATIONS GROUP	APPLICATIONS PERFORMED WITHIN GROUP
<p>FINANCIAL PLANNING</p>	<ul style="list-style-type: none"> ● PLANNING AND BUDGETING <ul style="list-style-type: none"> - MODELING - FORECASTING - PLANNING ACCOUNTING & FINANCIAL INFORMATION
<p>FINANCIAL REPORTING</p>	<ul style="list-style-type: none"> ● PROFIT ANALYSES <ul style="list-style-type: none"> - SINGLE UNIT - BY BRANCH - BY REGION ● STATEMENT PREPARATION <ul style="list-style-type: none"> - GENERAL LEDGER - COST ACCOUNTING ● COST ANALYSIS
<p>ASSET & LIABILITY MANAGEMENT</p>	<ul style="list-style-type: none"> ● CASH MANAGEMENT ● LIQUIDITY MANAGEMENT ● INVESTMENT MANAGEMENT <ul style="list-style-type: none"> - PORTFOLIO ANALYSIS - ECONOMIC MODELING - USE OF ECONOMIC/FINANCIAL DATA BASES

EXHIBIT V-8

EDP UTILIZATION: FINANCIAL MANAGEMENT

APPLICATIONS GROUP	APPLICATIONS	S&L SIZE											
		VERY LARGE			LARGE			MEDIUM			SMALL		
		IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
FINANCIAL PLANNING	• PLANNING & BUDGETING	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
	• MODELING	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
	• FORECASTING	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
FINANCIAL REPORTING	• PROFIT ANALYSIS	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
	• FINANCIAL STATEMENT PREPARATION	xxx	x	xxx	xxx	x	xxx	x	xx	xxx	-	xx	xx
	• COST ANALYSIS	xxx	x	xxx	xxx	x	xxx	-	-	-	-	-	-
PORTFOLIO MANAGEMENT	• CASH MANAGEMENT	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
	• LIQUIDITY MANAGEMENT	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-
	• INVESTMENT MANAGEMENT	-	xxx	xxx	-	x	xxx	-	-	-	-	-	-

- NOT USED
 x LESS THAN 25%
 xx BETWEEN 25% AND 75%
 xxx OVER 75%

IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE PROCESSING

- Funds Transfer
- Third Party Payment
- Consumer Credit

Many of the applications mentioned in Exhibits V-9 and V-10 are awaiting regulatory approval and thus are not actually in use today. Some elements of interest in this category are noted in the following paragraphs.

- Electronic Funds Transfer is the most rapidly growing application. In 1976 there were only 46 EFTS under development or installed. By 1981, most S&Ls will be so equipped. A more extensive description of EFTS is given in Chapter VII.
- In 1976, 7 States permitted S&Ls to offer NOW (Negotiable Order of Withdrawal) accounts to consumers.
- In 1977, the board of VISA, Inc., granted S&Ls membership in their credit card network.
- The S&L industry is driving toward what is frequently referred to as the "Family Finance Center" concept. The kinds of services embodied in this concept are listed in Exhibit V-10.
- The importance of EDP to the applications falling within the Specialty Consumer Services Function is given in Exhibit V-11.

EXHIBIT V-9

PRINCIPAL APPLICATIONS: SPECIAL CONSUMER SERVICES FUNCTION

APPLICATIONS GROUP	APPLICATIONS PERFORMED WITHIN GROUP
FUNDS TRANSFER	<ul style="list-style-type: none"> ● POINT OF SALE (P-O-S) ● AUTOMATED TELLER TERMINALS (ATM) ● EFT NETWORK MANAGEMENT
THIRD PARTY PAYMENT	<ul style="list-style-type: none"> ● NOW ACCOUNTS ● CHECKING ACCOUNTS <ul style="list-style-type: none"> - Demand Deposit Accounting - Clearing House ● PAY BY PHONE ● AUTOMATED TELLER TERMINALS
CONSUMER CREDIT	<ul style="list-style-type: none"> ● CREDIT CARDS ● CONSUMER LENDING <ul style="list-style-type: none"> - Credit Authorization Networks

"FAMILY FINANCE CENTER"

TYPICAL CONSUMER SERVICES OFFERED

- SAVINGS ACCOUNTS
 - CERTIFICATE
 - PASS BOOK

- NEGOTIABLE CERTIFICATES
- MARKET RATE CERTIFICATES
- DIRECT DEPOSIT OF PAYROLL CHECKS
- DIRECT DEPOSIT OF SOCIAL SECURITY CHECKS
- CHECKING ACCOUNTS
- CONSUMER LENDING
- CONSUMER CREDIT
- PHONE TRANSFER OF FUNDS
- PHONE PAYMENT OF BILLS
- INVESTMENT ANNUITY ACCOUNTS
- IRA ACCOUNTS
- KEOGH PLAN ACCOUNTS
- MONTHLY ACCOUNT STATEMENTS
- TRUST DEED AND NOTE COLLECTION
- INCOME TAX PREPARATION
- TRAVELERS' CHECKS
- SAFETY DEPOSIT BOXES
- SAVE BY MAIL
- SAVING CLUB MEMBERSHIP

EXHIBIT V-11

EDP UTILIZATION: SPECIAL CONSUMER SERVICES FUNCTION

APPLICATIONS GROUP	APPLICATIONS	S&L SIZE															
		VERY LARGE				LARGE				MEDIUM				SMALL			
		IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT	
FUNDS TRANSFER SYSTEMS	<ul style="list-style-type: none"> • POINT OF SALE SYSTEMS • AUTOMATED TELLER SYSTEMS 	xxx	x	xxx	xx	xx	xxx	xx	xx	xxx	x	x	xxx	-	x	xxx	
		xxx	x	xxx	xx	xx	xxx	xx	xx	xxx	x	x	xxx	-	x	xxx	
THIRD PARTY PAYMENT MECHANISMS	<ul style="list-style-type: none"> • NOW ACCOUNTS • CHECKING ACCOUNTS • PAY BY PHONE 	x	x	x	x	x	x	x	x	x	x	x	x	-	x	-	
		-	x	-	-	x	-	-	-	-	-	-	-	-	-	-	-
CONSUMER CREDIT	<ul style="list-style-type: none"> • CREDIT CARDS • CONSUMER LENDING 	xx	xx	xxx	xx	xx	xxx	xx	xx	xxx	x	x	xxx	x	x	xxx	
		xx	-	xxx	x	-	xxx	x	-	xxx	-	-	-	-	-	-	

- NOT USED
 x LESS THAN 25%
 xx BETWEEN 25% AND 75%
 xxx OVER 75%
 IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE PROCESSING

VI. COMPUTER SERVICES
MARKETS

VI. COMPUTER SERVICES MARKETS

A. MARKET HIGHLIGHTS

- S&Ls spent 32% of their total EDP Budgets on computer services in 1976 and this proportion will hold through 1981, as computer services expenditures almost double from \$114 million in 1976 to \$216 million by 1981 (as shown in Exhibit VI-1)
- S&Ls depend on computer service organizations to provide a major portion of their interactive computing requirements. The industry has developed along this line because most S&Ls are small financial organizations as contrasted to commercial banks. Industry structural changes such as the ability to offer consumers checking accounts and consumer credit will tend to increase S&L dependence on computer service organizations.
- The most significant positive factor influencing computer services market growth will be the ability of computer service vendors to respond rapidly to the changes occurring in the marketplace resulting from regulatory and structural changes in the financial markets, and from the introduction of new electronics technology.

EXHIBIT VI-1

SAVINGS AND LOAN EXPENDITURES FOR
COMPUTER SERVICES

COMPUTER SERVICES CATEGORY	EXPENDITURES			%	AVERAGE ANNUAL GROWTH RATE %
	1976 (\$ MILLION)	%	1981 (\$ MILLION)		
REMOTE COMPUTING SERVICES					
INTERACTIVE	91.6	80.0	180.3	84.5	14 1/2
REMOTE BATCH	0		0		0
DATE BASE	1.8	2.0	6.5	2.0	37 9/8
SUB TOTAL	93.4	82.0	186.8	86.5	15 1/4
BATCH PROCESSING	10.6	9.3	13.0	6.0	4 5
FACILITIES MANAGEMENT	3.0	2.6	4.5	2.1	9 1/0
PROFESSIONAL SERVICES	3.0	2.6	6.0	2.7	15 1/6
SOFTWARE PRODUCTS					
SYSTEMS PACKAGES	4.0		4.0		0
APPLICATION PACKAGES	0		2.0		-
SUB TOTAL	4.0	3.5	6.0	2.7	9 1/0 9/0
TOTAL	114.0	100.0	216.3	100.0	14 1/5

- Over 90% of the S&L financial officers interviewed who used computer services were satisfied with both the cost and performance of their computer service vendors.

B. EXPENDITURES FOR COMPUTER SERVICES

- Remote computing services account for 82% of all S&L computer expenditures. In 1976, S&L RCS expenditures were over \$93 million. This market will grow to nearly \$187 million by 1981, or 87% of total S&L computer services expenditures.
- S&L expenditures for data base related remote computing services will grow from just under \$2 million in 1976 to nearly \$7 million by 1981, for an average annual growth rate of 37% over 5 years. The size of this market is still relatively small, 2% compared with other RCS services.
- The primary growth areas for current data base related RCS services are the secondary mortgage market, loan appraisal and financial planning services.
- S&L financial and data processing officers interviewed indicated that S&Ls do not use remote batch services to any measurable extent.
- The use of batch processing is on the decline as S&Ls implement centralized data base operations and make more file changes using interactive computing. Even the general ledger is now produced as a by-product of day-to-day interactive transactions. About 20% of small S&Ls still used batch processing for savings and loan operations in 1976. Small S&Ls

will continue to use batch processing services in 1981, primarily for administrative and financial management operations.

- S&Ls have made limited use of facilities management services. The availability of a wide variety of S&L computer services vendors acts as a barrier against greater S&L use of facilities management services. Few S&Ls have much incentive to go the facilities management route.

- Very large and large S&Ls that have in-house central processors use over 70% of the professional services. S&Ls use professional services to create operating systems and communications processing software for micro and mini computers in their branch and communication net nodes.

- Over 80% of 1977 expenditures were made by very large and large S&Ls that have in-house computers. The applications packages are generic. The packages are systems-oriented. Examples of systems packages purchased by S&Ls can be found in Exhibit VII-3.

- S&L data processing managers of in-house computer systems expressed interest in processing applications packages. Possibilities cited were NOW account processing, consumer installment loans and demand deposit accounting.

C. COMPUTER SERVICES EXPENDITURES BY S&L SIZE

- Large and medium sized S&Ls accounted for nearly 90% of total S&L expenditures for computer services in 1976, as shown in Exhibit VI-2. Their domination of the market opportunity will continue.

EXHIBIT VI-2

COMPUTER SERVICES EXPENDITURES

BY S&L SIZE

S&L SIZE CATEGORY	SERVICES EXPENDITURES				AAGR %
	1976		1981		
	AMOUNT (MILLION)	% COMPUTER SERVICES BUDGET	AMOUNT (MILLION)	% TOTAL COMPUTER SERVICES BUDGET	
VERY LARGE	\$ 3.6	3.5	\$ 6.4	3.0	12.8
LARGE	57.5	50.5	110.9	51.5	13.9
MEDIUM	42.0	37.0	77.7	35.5	12.9
SMALL	10.9	9.0	21.3	10.0	14.3
TOTAL	114.0	100.0	216.3	100.0	13.6

- In 1981, interactive services to large and medium sized S&Ls will be the only significant market as shown in Exhibit VI-3.

D. COMPUTER SERVICES EXPENDITURES BY S&L FUNCTIONS

- S&L computer services expenditures on the savings and loan functions together were nearly \$93 million or 81% of S&L computer services budgets, as shown in Exhibit VI-4. These expenditures will increase to nearly \$169 million in 1981 still utilizing 80% of S&L computer services expenditures.

- The loan function growth rate is larger than that of the savings function because of additional RCS services for automated loan document preparation, loan appraisal and secondary mortgage market operation.

- In the financial management area, general ledger preparation is being produced more as a by-product of daily interactive operation and less by batch operation, decreasing computer service expenditures. The decrease is being offset by the S&L increased use of RCS computer services for financial planning and economic analysis.

- Computer services in administrative functions are used in personnel accounting and government compliance reporting. Except for the very large S&Ls which process payroll in-house, commercial banks process S&L payroll for compensating demand deposit balances. This situation will change if S&Ls are granted authorization to offer consumer checking accounts.

- Exhibit VI-5 shows that RCS will dominate all other delivery service modes for all S&L functions in 1981.

EXHIBIT VI-3

DISTRIBUTION OF 1981 COMPUTER SERVICES EXPENDITURES

MODE OF SERVICE	USER SIZE				
	VERY LARGE	LARGE	MEDIUM	SMALL	TOTAL
REMOTE COMPUTING SERVICES					
INTERACTIVE	1.4	94.2	68.4	16.3	180.8
REMOTE BATCH	0	0	0	0	
DATA BASE	2.0	3.5	1.0	0	6.5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
SUB TOTAL	3.4	97.7	69.4	16.3	186.8
BATCH PROCESSING	0	4.0	4.0	5.0	13.0
FACILITIES MANAGEMENT	0	3.0	1.5	0	4.5
PROFESSIONAL SERVICES	1.0	3.2	1.8	0	6.0
SOFTWARE PRODUCTS					
SYSTEM PACKAGES	1.2	1.8	1.0	0	4.0
APPLICATION PACKAGES	.8	1.2	0	0	2.0
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
SUB TOTAL	2.0	3.0	1.0	0	6.0
TOTAL	6.4	110.9	77.7	21.3	216.8

(\$ MILLION)

EXHIBIT VI-4

DISTRIBUTION OF SAVINGS AND LOAN COMPUTER SERVICES
BY MAJOR S&L FUNCTION

	1976		1981		
	EXPENDITURES (\$ MILLION)	%	EXPENDITURES (\$ MILLION)	%	AAGR (%)
SAVINGS	57.0	50.1	99.0	45.9	12.3
LOAN	35.8	31.3	70.5	32.0	14.6
ADMINISTRATION	3.3	2.9	6.9	3.5	15.8
FINANCIAL MANAGEMENT	14.1	12.7	25.4	11.9	12.6
SPECIALTY CONSUMER SERVICES	3.6	3.0	14.4	6.7	32
TOTAL	113.8	100.0	216.2	100.0	14

EXHIBIT VI-5

SAVINGS AND LOAN INDUSTRY COMPUTER SERVICES EXPENDITURES
 BY MODE OF SERVICE AND MAJOR S&L FUNCTION
 1981

MODE OF SERVICE	S&L FUNCTION					TOTAL
	EXPENDITURES (\$ MILLION)					
	SAVINGS	LOAN	ADMINIS- TRATIVE	FINANCIAL PLANNING	SPECIALTY CONSUMER SERVICES	
REMOTE COMPUTING SERVICES	86.1	58.8	5.6	21.9	14.4	186.8
BATCH PROCESSING	5.0	4.0	1.0	3.0	0	13.0
FACILITIES MANAGEMENT	2.0	1.7	.3	.5	0	4.5
PROFESSIONAL SERVICES	3.0	3.0	0	0	0	6.0
SOFTWARE PRODUCTS	3.0	3.0	0	0	0	6.0
TOTAL	99.1	70.5	6.9	25.4	14.4	216.3

E. WHO ORDERS COMPUTER SERVICES

- The designation of the S&L Manager responsible for ordering computer services for the major consumer interface Savings and Loan functions depends on whether or not the S&L has an in-house EDP system. The responsibility for ordering computer services to support other S&L functions depends on S&L size. Exhibit VI-6 indicates ordering responsibility for S&L computer services.
- Very large and some large S&Ls have vice-presidents who are the directors or managers of data or information processing, and have in-house EDP systems. They order professional programming services and software products.
- The chief financial officer in very large and large S&Ls will order financial and economic planning RCS. Some very large S&Ls have business economists who order RCS services for economic and financial forecasting.
- The chief loan officer in very large and large S&Ls orders data base related RCS services for secondary mortgage market operations and for automated loan appraisal. The chief appraiser in some very large S&Ls may have the responsibility for ordering RCS for loan appraisal.
- The chief financial officer or treasurer of large S&Ls orders RCS and batch services which relate to the consumer interface, such as RCS for the savings and loan function. He also orders RCS for financial planning.

EXHIBIT VI-6

RESPONSIBILITY WITHIN S&L ASSOCIATIONS FOR ORDERING COMPUTER SERVICES

S&L SIZE	IN-HOUSE EDP	USE COMPUTER SERVICES COMPANY	COMPUTER SERVICES USED
VERY LARGE	CHIEF EXEC. OFFICER VP DATA PROCESSING CHIEF FINANCIAL OFFICER CHIEF LOAN OFFICER CHIEF ECONOMIST		FACILITIES MANAGEMENT SERVICES PROFESSIONAL PROGRAMMING SERVICES. SOFTWARE PACKAGES. RCS FINANCIAL PLANNING SERVICES DATA BASE RELATED RCS SERVICES RCS ECONOMIC & FINANCIAL FORECASTING SERVICES
LARGE	CHIEF EXEC. OFFICER DIR. DATA PROCESSING VP FINANCE CHIEF LOAN OFFICER BUSINESS ECONOMIST	CHIEF FINANCIAL OFFICER, TREASURER VP FINANCE CHIEF LOAN OFFICER	FACILITIES MANAGEMENT SERVICES COMPUTER SERVICES FOR S&L OPERATIONS PROFESSIONAL PROGRAMMING SERVICES. SOFTWARE PACKAGES. RCS FINANCIAL PLANNING SERVICES DATA BASE RELATED RCS SERVICES RCS ECONOMIC & FINANCIAL SERVICES
MEDIUM	VP DATA PROCESSING CHIEF FINANCIAL OFFICER	CHIEF FINANCIAL OFFICER; CHIEF CHIEF FINANCIAL OFFICER	PROFESSIONAL PROGRAMMING SERVICES. SOFTWARE PACKAGES COMPUTER SERVICES FOR S&L OPERATIONS RCS FINANCIAL PLANNING SERVICES
SMALL		PRESIDENT, ASSOC. MGR WITH COMMITTEE APPROVAL	COMPUTER SERVICES FOR S&L OPERATIONS

- Some large S&Ls have a chief loan officer who orders data base related RCS for loan appraisal and secondary mortgage market operation. In other large S&Ls the operating vice-president orders these services.
- The S&L president or chief operating officer would be responsible for signing a facilities management contract.
- In medium-size S&Ls the chief financial or chief operating officer has the responsibility for ordering all computer services.
- In small S&Ls the president or association manager has the responsibility, with the approval of the management committee.

VII. MARKETING
AND TECHNICAL
REQUIREMENTS

VII. MARKETING AND TECHNICAL REQUIREMENTS

A. SYSTEM REQUIREMENTS

● As noted earlier, on-line interactive processing is the principal method of automated processing for S&Ls. This section describes the functional specifications of the systems designed to meet the industry's need.

1. INTERACTIVE SYSTEMS

a. Terminals

- An RCS vendor to the S&L industry must be able to support a wide variety of terminals for teller operation, for administrative data entry and control, and for inquiry. The terminals must be supported on an interactive basis during the business day. Exhibit VII-1 lists the characteristics of some widely used terminals for S&L on-line operations.
- Teller terminals are made up of combinations of the following devices:
 - Keyboards for data entry;
 - Forms printers for pass books and paper documents;
 - CRT displays for inquiry and response;

EXHIBIT VII-1

TERMINALS USED IN S&L ON-LINE SYSTEMS

MANUFACTURER	MODEL	FIXED FUNC.	MOD. ULAR	TELL- ER	ADMIN.	OTHER	COMMUNICATION PROTOCOL	COMMUNICATION LINE SPEED (BAUD)
DATA SAAB	1050		X	X			BISYNC	2400
	TC700's	X		X			BISYNC/SDLC	1200
BURROUGHS	TD800's							
	TD800		X	X	X		ASYNC/BISYNC	1200/2400
	TC3800	X				DOCU. PREP.	BISYNC	4800
NCR	270's	X		X			ASYNC/BISYNC	1200/2400
	260's	X			X		ASYNC	1200
IBM	MTS		X	X	X		BISYNC/SDLC	1200/2400/ 4800
	2980-2	X			X		BISYNC	4800 1200 REMOTE
	2980-4	X		X			BISYNC	4800 1200 REMOTE
	1060	X		X			ASYNC	1200

EXHIBIT VII-1 (CONT'D.)

TERMINALS USED IN S&L ON-LINE SYSTEMS

MANUFACTURER	MODEL	FIXED FUNC.	MOD. ULAR	TELL-ER	ADMIN.	OTHER	COMMUNICATION PROTOCOL	COMMUNICATION LINE SPEED
IBM	3600s		X	X	X		SDLC	1200
	3735	X				DOCU. PREP.	BISYNC	4800
	3270s		X		X		BISYNC/B53	2400
BUNKER RAMO	RA1200	X		X			BISYNC	1200/1200/ 4800
TRW/FDSI	100s		X	X			ASYN 2600	1200
NIXDORF	1	X				DOCU. PREP.	BISYNC	4800
	820s		X	X			ASYN/BISYN TCY	1200/2400
OLIVETTI	TC200s			X			ASYN/BISYN	1200/2400
	TC300s			X			ASYN/BISYN	1200/2400
BELL & HOWELL						LOAN PMT. DOC. RDR.		
	IMDC	X					BISYNC	4800

- Readers for customer magnetically encoded plastic cards; and
 - PIN pads.
- The older terminals have selected functions built into each model. The newer terminals are modular in nature, permitting the S&L more flexibility in equipment selection and modification.
 - Administrative terminals are used to enter and update data in the central files and to access the data base in response to information requests. Most terminals use the standard CRT displays. The IBM 3270 is frequently used for teller operations.
 - Many S&Ls are providing small inquiry terminals in their branch offices for use by customers. The terminal consists of a function keyboard, a plastic card reader, a PIN pad, and a small CRT. The customer can make inquiries as to his account balances, interest accumulation, certificate interest dates, etc. The IBM 3606 is frequently used.

b. Transaction Rates

- S&L customer service policy requires that teller equipment be on-line during business hours. Interviews with S&L managers indicate almost total agreement that the average transaction response must be between 2-4 seconds for 80% of the transactions. Maximum response time should not exceed 7-8 seconds for no more than 10% of the transactions.
- Peak system load times occur during the first 10 days of each quarter called the 'reinvestment period'. Many pass book savers conduct

their business at this time, sometimes only to have their accumulated interest posted. The use of plastic cards with the attendant shift to savings statements is helping to level off the quarterly crunch.

- Typical systems must handle an average of 5-6 transactions/second while maintaining an average response time of 2-4 seconds. Another measure of performance cited by one user is 80-100 thousand transactions per 6-hour day operating on 1.5 million savings and loan accounts.

c. Communications

- Many S&L service organizations are utilizing a computer as a communications front end to their central processors. Minicomputers enable the service organizations to accept a greater variety of terminal types. Examples of minicomputers used as front ends by S&Ls are the GA 16/110 and PDP 11/34.

- S&Ls use leased communications lines almost exclusively. The high cost of these lines is one of the main reasons that regional S&L service centers have not expanded nationwide.

- Most communications lines used by S&Ls are 1200 baud. Some computer service organizations serving S&Ls have 2400 baud service in branches with high activity levels. A few of the largest S&Ls have high speed (4800-9600 baud) service.

- One line normally supports six to ten terminals on 1200 baud service. In large S&L branches, the terminals are often connected in a

cluster to a communication controller, which polls the terminals for transaction activity and packs the data for transmission on 2400 baud lines.

- Drop points on leased communication lines allow the terminals in small S&L branches in a single geographic area to be efficiently connected to a single leased line. This technique is especially useful to service organizations.
- The early on-line systems for S&L transaction processing used specialized branch communications controllers to concentrate, modulate and multiplex the data to the central processing center. These communication controllers supported only one type of fixed function teller terminal. The IBM 2711 and NCR 621 are typical of the specialized branch communications controllers.

In the current generation of on-line systems, these fixed teller terminals are being replaced by modularized, intelligent, teller and administrative terminals. The terminals are supported by programmable communications processors with typically 32-64K of MOS memory. The communication control program can be altered to meet changing system requirements. The IBM 3601 and PDP 11/34 are typical of the programmable processors now in use.

- There are a number of line communication protocols for teller and administrative terminals. They are indicated in Exhibit VII-1. Users and service organizations expressed mixed feelings about the IBM

SDLC protocol. Some felt SDLC degrades response time, particularly in filling CRT screens. Others were pleased with the ability to use dial-up voice grade telephone lines.

d. Reporting

- Data centers supporting S&L operations have special reporting requirements for each quarter, semi-annual and annual period. Dividend notices, dividend checks, extensive regulatory reports, general ledger, financial statement preparation, and federal tax reporting place heavy processing workloads on central processing systems which are already loaded to capacity for on-line transaction posting of dividends to consumer pass books.

- Large S&Ls and many of the larger service organizations use microfilm and microfiche equipment to record daily account transactions, quarterly dividend data and regional regulatory reports. The Memorex 1603 and Datagraphics 4360 are typical of the equipment used.

e. Security

- S&Ls are highly conscious of data security. S&L service organizations use careful security measures to control access to their premises and to store and protect account information. The use of dedicated leased communications lines greatly simplified the security of data access.

- New consumer services related to the use of magnetically encoded

plastic cards have added a new dimension to data security. Consumers are able to transact their savings business at other branches and remote locations. The current solution to consumer data security is by assigning the customer a secret Personal Identification Number (PIN) which only he keys in on a PIN pad. The PIN/account number is encoded for transmission using a BuStandards encryption algorithm.

- S&L managers interviewed feel particularly vulnerable to tampering in the dial-up data communications system. They feel such systems add another dimension to the security risk of consumer financial data.

f. Central Processor

- Exhibit VII-2 shows the distribution of central processor equipment determined from a survey of 134 S&L service organizations. Outside of the omnipresence of IBM, NCR and Burroughs are the industry's preferred mainframe vendors.

g. Data Base & Storage

- Both S&Ls and S&L service organizations are implementing centralized data bases for their on-line operations. Typical storage requirements for the savings account related information is 300-500 characters and for loan related information 600-800 characters. Total storage requirements for all functions of a typical S&L having 15,200 savings accounts is 100 million characters.
- S&Ls are data-base oriented and centralized data bases are key to efficient on-line operation of the savings and loan functions. Half of

EXHIBIT VII-2

CENTRAL PROCESSORS IN USE AT
S&L SERVICE ORGANIZATIONS

MANUFACTURER	MODEL	NUMBER	COMMUNICATIONS CONTROLLER	FRONT END MINI/MICRO PROCESSORS
BURROUGHS	B500	10	DC1200	
	B3700/4700s	25	B4353	
	B6700/1700s	3	B6350/B7350	
	TOTAL	28		
NCR	200s	8	NCR 663	
	300s	11	NCR 438	
	600s	2		PDP11s
	TOTAL	21		
IBM	360/20/40	11		
	360/50	9	IBM 2700's	16/110s
	360/65	3		PDP11s
	370/125/135	20		
	370/145/155	19		
	370/158/168	11		IBM 3700s
	TOTAL	73		
OTHERS	HONEYWELL 6600s	12		
	UNIVAC 490/1100s			
TOTAL		134		

the S&L service organizations interviewed have implemented data base management systems. These systems enable the customer or the teller to access data using a wide variety of key words and data fields.

- Larger S&Ls are becoming increasingly more interested in accessing and using external economic, financial and commercial data bases through RCS services. Examples of currently available data bases useful to S&Ls can be found in Chapter VIII.

h. Software

- Interviews with S&L service organization managers indicate that they both procure, develop and sell a wide variety of software packages. Some S&Ls are actively selling their on-line operational software to both S&L service organizations and commercial banks. They also buy software packages to aid in program development, data base management, communications software for mini and micro controlled communications processors, general ledger, payroll and personnel systems. Examples of typical software packages used or written by S&L service companies are shown in Exhibit VII-3.

2. ELECTRONIC FUNDS TRANSFER

- The growing importance of Electronic Funds Transfer systems justifies separate consideration of its technical requirements. The systems under development and operation are composed of POS/ATM terminals connected to electronic switching networks, some of which accomplish the

EXHIBIT VII-3

EXAMPLES OF SOFTWARE PACKAGES USED BY S&L SERVICE ORGANIZATIONS

DEVELOPER	PACKAGE NAME	PURCHASED/ LEASED		FUNCTION
		TO S&L's	FROM S&L's	
DATA DIMENSIONS CITIZENS SAVINGS CITIZENS SAVINGS	DDI/MCP UFAM UTAM	X	X X	OPERATING SYSTEM B500 DATA BASE MANAGEMENT COMMUNICATIONS
ADR DYLAKOR EQUITABLE ADR	LIBRARIAN DYL 250 CIF META COBOL	X X X	X	SOURCE STATEMENT LIBRARY REPORT GENERATOR CENTRAL INFO FILE SYSTEM COBOL STATEMENT GENERATOR
WESTINGHOUSE CULLINANE COM SOFTWARE	WESTINGHOUSE IDMS EDOS/ESF	X X X		SYSTEM UTILITIES IBM 370s DATABASE MGT FOR IBM 360s OPERATING SYSTEM/SPOOLER FOR IBM 360/65
PEAT, MARWICK & MITCHELL	PMM2170	X		REPORT GENERATOR IBM 360s
INFORMATICS BOOLE & BABBAGE TOUCHE-ROSS CINCOM	MARK IV SMS-CAS STRATA TOTAL 7	X X X X		REPORT PREPARATION PROGRAM DEVELOPMENT REPORT GENERATOR DATABASE MANAGEMENT
PANSOPHIC UCC WANG GLENDALE FEDERAL	EASY TRIEVE CIF PAYROLL/PERSONNEL ON-LINE S&L SYSTEM	X X X	X	REPORT GENERATOR CENTRAL INFO FILE PAYROLL/PERSONNEL RECORDS ON-LINE SAVINGS FOR COMMERCIAL BANKS

ACH functions, and are connected to S&L host computers.

a. Systems

● POS/ATM terminals accept entry primarily via plastic card and PIN pad. The following information is required for transmission.

- Personal Identification Number (PIN)
- Account
- Payment media--cash, check, credit card, etc.
- Type and amount of transaction
- Identification of the S&L responsible for the funds transfer.

The terminals must have the ability to display the transaction acknowledgment and have a printing device for a receipt.

● The EFT switch is part of a distributed communication network. The POS/ATM terminals are clustered around a communications processor which are in turn interconnected to other communications processors via either automated dialup or leased lines. These communication processors concentrate and route the messages to the front processor which is connected to the central processor (the switching center).

● The central processor acts as the automated clearinghouse (ACH) for the participating S&Ls. It is interconnected to the host computer at the S&L or at the S&L Service Company. The switch may also be interconnected to other retailer and financial institutions, their host computers, national credit card networks, and credit verification networks.

- The switch may have a data base or access to a data base of local account data files from the participating S&Ls. The processor accesses the appropriate account, records the transaction on an activity log, and transmits a transaction response back through the communications network to the appropriate terminal. At the end of the day the processor posts and updates all local files, and reconciles the net value exchanged between the switch and the participating retailers, S&Ls and other financial institutions.

b. Security

- Maintaining security within the EFT network is a major technical requirement. S&Ls pride themselves in knowing their customers. The advent of off-premises ATM and POS terminals permits the consumer access to his account data from multiple access points. The off-premises factor adds one dimension of complexity to security requirements. The other dimension occurs through the addition of S&L host computers, and credit processing networks.

3. EXAMPLE OF AN S&L DISTRIBUTED COMPUTING NETWORK

- Distributed networks can hardly be called commonplace in the S&L industry. But the VISION system in operation at Home Federal Savings and Loan of San Diego is worthy of special consideration. It is too early to tell if it is truly a precursor of the future, but there is no doubt that its success will be felt with the industry.

- The concept of the VISION system is to have a highly reliable on-line

system through use of redundant components. The components of the modular teller/administrative terminals consist of 110 key alphanumeric keyboard, 1920-character CRT screen, shared forms printer, shared magnetically encoded plastic card reader and PIN pads for entry of secret customer identification numbers.

- The modular terminals are connected independently by 4-wire cables in clusters of six (12 tellers) to a General Automation model GA 16/110 processor. The processor has sufficient storage capacity to provide electronic journaling. Two processors are located at each office to insure continued operation.

- The processors are interconnected via leased communications line to a network of 8 satellite GA 16/440 minicomputers. Each satellite minicomputer is interconnected through network switching to 8 branch processors insuring high communications availability.

- The satellite computers are connected by leased communications lines to the GA 16/440 front end processors to two IBM 360/65s, one on-line, the other a backup.

- The IBM 360/65s will be replaced by 2 minis of DEC 10-like capability. This will occur following the successful restructuring of the software to permit distribution of the transaction processing to the satellite minicomputers and the branch processors. Control and handling of the customer data base will then be accomplished on the in-house minicomputer.

- The system permits monitoring of transaction activity throughout the communications network, and switching to alternate leased communications lines in the network to balance activity or to bypass line failures.
- Analysis of early cost data indicates that Home Federal may be able to operate the system at half the cost of their previous EDP equipment and network, with greatly improved system performance and uptime.

B. PRICING

- The pricing of the on-line computer services on a 'per account' basis has become a de facto industry standard. This method enables S&L users to compute their EDP service costs with a high degree of precision. Any new services vendor must offer this type of pricing structure.
- Some typical 1976 prices of eight S&L services vendors are listed in Exhibit VII-4.

C. MARKETING REQUIREMENTS

- The S&L industry can, in many ways, be thought of as a subset of the banking industry. Marketers of computer services to S&Ls must be well-versed in the needs and activities of both types of financial institutions. Successful vendors will adopt an interdisciplinary approach in which several different kinds of expertise can be brought to bear on customer problems. These disciplines or knowledge areas include:
 - In-depth understanding of basic S&L day-to-day operations
 - Communications system design

EXHIBIT VII-4

MONTHLY ON-LINE PROCESSING PRICES OF

SELECTED S&L SERVICE ORGANIZATIONS

IN 1976

ORGANIZATION	SAVINGS ACCOUNTS	MORT-GAGE LOANS	CON-SUMER LOANS	GENERAL LEDGER	OTHER TYPES OF CHARGES
DATA LINE SERVICE CO.	10¢	23¢	23¢	1¢/ACCT	INCLUDES ALL REPORTS, CHECKS, ETC. \$1700/mo MINIMUM
GLENDALE FEDERAL SAVINGS	10¢	20¢	35¢	-	INCLUDES ALL REPORTS, CHECKS, ETC. SOME BATCH WORK
METROPOLITAN COMPUTER	8.5¢	21¢	21¢	1¢/ACCT	SOME REPORTS AND SERVICES ARE EXTRA. \$250/mo/TYPE OF SERVICE--MINIMUM
GESCO	8¢	21¢	21¢	1¢/ACCT	REPORTS EXTRA (\$2000/mo minimum)
NCR DATA CENTERS	9¢	30¢	30¢	-	INCLUDES 25¢-30¢/yr SPECIAL SAVINGS REPORTS. INCLUDES 60¢-130¢/yr SPECIAL REPORTS.
FINANCIAL SERVICES INC.	7.5¢	25¢	30¢	\$100/mo/ BRANCH (1.6¢)	INCLUDES AVERAGE SET OF SAVINGS AND LOANS REPORTS. ARE GOING TO MORE SIMPLIFIED PRICING
ADP THRIFT SERVICES	7.5¢	37¢	37¢	-	RATES INCLUDE ALL SERVICES BUT POSTAGE
FEDERAL HOME LOAN BANK	10¢ SA 13¢ CD	22¢	26¢	\$175/mo/ BRANCH (3¢)	INCLUDES ALL REPORTS INCLUDES COMMUNICATION LINE COSTS FOR S&L'S WITHIN FI&LB DISTRICT
AVERAGE	9.3¢	25¢	29¢	1.5¢	

- Carrier rate structures and use of SPCCs, VANS, satellite communications, etc.
 - Electronic Funds Transfer Systems
 - Data Base Management Systems
 - Data Security, PIN Operations, Encryption Algorithms
- The marketing staff must keep informed of all legislation and regulatory activity likely to impact S&Ls. The ability to accurately project which new services S&Ls will be offering, so that systems can be planned to handle the applications ahead of the competition will be a key factor in determining future market share.
 - Some secondary applications require that specialists be made available.
 - MBAs (typically) versed in financial planning, modeling and forecasting are needed to support the planning applications.
 - PhD (typically) economists are needed to deal with in-house economists at large and very large S&Ls in forecasting money market trends, interest rates, etc. Sometimes arrangements can be made with university people to obtain this kind of support without retaining full-time employees.
 - The secondary mortgage market requires people who are specialists at this application.
 - The influence of Electronic Funds Transfer Systems on S&L operations is mentioned in Chapter IV. Over the next 3-5 years EFT Systems will

force significant changes in both the personal way S&Ls do business and in S&L information processing systems.

- EFTS will become fundamental to the long-range viability of S&L computer services vendors. In order to get into the S&L services market, the successful vendor must offer EFT network services.
- Most existing S&L service organizations are small. They lack the capital and technical expertise to develop effective EFTS networks unless they form cooperative ventures. For example the California Savings Association Central Corporation (SACC) is spending over \$2 million to develop an EFT switch for California S&Ls. An additional 20 million will eventually be required for 3000 POS/ATM terminals.
- One of the most promising marketing approaches for the successful computer services vendor is to combine a vendor-developed national EFTS network with S&L market outlets through joint ventures with very large S&Ls or S&L leagues.

VIII. COMPETITIVE
ENVIRONMENT

VIII. COMPETITIVE ENVIRONMENT

A. VENDORS

- Over 200 processing services (remote computing and batch) vendors sell to S&Ls. These vendors fall into five distinct organizational categories as shown in Exhibit VIII-1. The distribution of activity by customer size and by vendor category is given in Exhibit VIII-2 in terms of numbers of customers and in Exhibit VIII-3 in terms of dollars.

- In each vendor category, no one vendor has a dominant market position. The major participants in each category are discussed in the following paragraphs.

1. FEDERAL HOME LOAN BANK

- The Federal Home Loan Bank is presently the largest single computer services vendor to the S&L industry. Their services are offered from four district offices -- Des Moines, Chicago, Cincinnati and Pittsburgh.

- A federal court ruling, now under appeal, requires that the FHLBs divest their S&L Computer Services Operations. The accounts presently serviced by the FHLB may well represent a new market for other vendors.

EXHIBIT VIII-1

CLASSES OF RCS VENDORS SERVING S&Ls

VENDOR CLASSIFICATION	NUMBER	DOLLAR MARKET SHARE
● S&Ls	44	14%
● S&L JOINT VENTURES	67	18
● COMMERCIAL BANKS	40	12
● FEDERAL HOME LOAN BANKS	4	18
● COMMERCIAL RCS VENDORS	45	38
TOTAL	201	100%

EXHIBIT VIII-2

NUMBERS OF S&L PROCESSING SERVICES CUSTOMERS BY
VENDOR CATEGORY & CUSTOMER SIZE IN 1976

S&L CUSTOMER SIZE	NUMBERS OF CUSTOMERS						TOTAL NO. OF CUSTOMERS
	S&Ls	COMMERCIAL BANKS	S&L JOINT VENTURES	FED HOME LOAN BANK	COMMERCIAL VENDORS		
VERY LARGE	0	0	0	0	1	1	
LARGE	63	59	66	48	157	393	
MEDIUM	188	141	280	329	536	1474	
SMALL	203	182	342	426	487	1640	
TOTAL	454	382	688	803	1181	3508	
MARKET SHARE (%)	13	11	20	23	33	100%	

EXHIBIT VIII-3

VALUE OF S&L REVENUES TO PROCESSING SERVICES
VENDORS BY CUSTOMER SIZE IN 1976

S&L CUSTOMER SIZE	PROCESSING REVENUES (\$ millions)						TOTAL MARKET (\$M)
	S&Ls	COMMERCIAL BANKS	S&L JOINT VENTURES	FED HOME LOAN BANK	COMMERCIAL VENDORS		
VERY LARGE	0	0	0	0	0.8	0.8	0.8
LARGE	8.1	7.4	8.4	6.3	20.4	50.6	50.6
MEDIUM	5.1	3.9	7.6	9.1	14.5	40.2	40.2
SMALL	1.3	1.1	2.2	2.7	3.3	10.6	10.6
TOTAL	\$14.5	\$12.4	\$18.2	\$18.0	\$39.0	\$102.2	\$102.2
MARKET SHARE (%)	14	12	18	18	38	100%	100%

2. COMMERCIAL BANKS

- State Street Bank & Trust Co. of Boston is the leading commercial bank offering computer services to S&Ls. They presently service nearly 1.8 million accounts and had 1976 revenues of approximately \$3.1 million.
- Midland National Bank of Milwaukee, Wisconsin is probably the second largest commercial bank services company. They service nearly 1.2 million accounts and had \$2 million in revenues in 1976.
- The remaining commercial banks all put together account for another \$7.3 million of revenues. Many are moving away from the business because of the need to concentrate EDP resources on in-house banking operations. The commercial bank share of the S&L market should decline substantially in the next few years.

3. S&L JOINT VENTURES

- Florida Information Management Services is the leading S&L joint-venture services company in the east. The company services 76 S&Ls with a total of 2 million accounts. 1976 revenues were approximately \$3.7 million.
- Data Line Service Company is the leading S&L joint-venture services company in the west. The company services 23 S&Ls with a total of nearly 1.2 million accounts. 1976 revenues were approximately \$3.1 million.
- All other joint ventures put together accounted for only \$11.4 million in 1976. The interview program did not reveal any particular user

biases for or against joint-venture companies. As a result they will likely continue maintaining their present market share.

4. S&L ASSOCIATIONS

- This category includes all situations in which an individual S&L does processing for other small, local S&Ls. No single vendor in this category processes much more than 500,000 accounts. Thus, there are no significant large vendors.

- Of all the very large S&Ls interviewed, only one expressed strong interest in becoming an S&L processing services vendor.

5. COMMERCIAL VENDORS

- Commercial vendors have a 38% market share overall and are the biggest vendor category for all sizes of customers.

- NCR Corp. is the largest commercial vendor serving S&Ls. They service nearly 10 million accounts at 500 S&Ls through 9 regional data centers. Their 1976 revenues from S&Ls are estimated at \$16.7 million, accounting for 43% of all commercial vendor business. The user interview program revealed that many NCR S&L customers are upset about what they perceive to be a reluctance on NCR's part to upgrade their data centers with new mainframes and provide new model teller terminals on-site. As a result, some NCR customers are potentially good prospects to switch vendors.

- ADP Network Services, Inc. is probably the second largest commercial vendor. They service about 170 S&Ls, and process nearly 2 million accounts. 1976 revenues are estimated at \$3.5 million.

- No other large (>\$25m annual sales) computer services vendor has a significant share of the S&L market. Exhibit VIII-4 contains a list of other vendors who processed from 575,000 up to 2,000,000 accounts in 1976.

B. DATA BASES AND FINANCIAL PLANNING SERVICES

- The offering of financial and economic data bases, sometimes coupled with financial planning services using sophisticated models, is becoming an important adjunct service for RCS vendors selling to S&Ls. These services are most often used for loan appraisal, secondary mortgage market trading, economic planning and financial forecasting. Some external data bases used by S&Ls are shown in Exhibit VIII-5.

- The Society for Real Estate Appraisers (SREA) Market Data Centers, Inc. has a joint-venture arrangement with Tymshare, Inc. which offers an historical data base of residential property information in Texas, Florida and California. Using multivariate statistical techniques, an appraised value for a given piece of property is predicted. In this case, each appraisal generates \$7 of RCS revenues. SREA is expanding the service to 38 states in 1977. The average asset size of S&L users is \$200 million.

- ADP Network Services, Inc., Interactive Data Corporation, Data Resources, Inc., and others offer economic and financial data bases used by business economists at some 'large' and 'very large' S&Ls. (See INPUT's MAS report issued January 1977 for a complete rundown on this subject).

EXHIBIT VIII-4

OTHER LEADING S&L PROCESSING SERVICES VENDORS

VENDOR NAME	VENDOR LOCATION	ACCOUNTS SERVICED (THOUSANDS)	NO. S&LS SERVICED	MAINFRAME
FINANCIAL SERVICES, INC.	Glen Rock, NJ	1,850,000	73	IBM
CHAMPION SERV. CORP.	Cleveland, OH	1,490,000	44	IBM
NORTHEAST DATACOM, INC.	Woodbridge, CT	1,433,000	56	BURR
FINANCIAL DATA SYSTEMS	St. Louis, MO	1,300,000	34	IBM
INTERGON COMP. CORP.	Winston-Salem, NC	1,250,000	99	IBM
MID CONTINENT COMP. SERV.	Denver, CO	1,200,000	42	BURR
TEL-A-DATA CORP.	Chicago, IL	1,130,000	37	IBM
CONN. ONLINE COMP. CTR.	Avon, CT	1,047,000	49	NCR
TOTAL SYSTEMS INC.	Houston, TX	1,000,000	--	IBM
ON-LINE SERVICE CORP.	Philadelphia, PA	981,000	42	BURR
ONLINE SERVICE	Seattle, WA	908,658	4	BURR
GESCO	Fresno, CA	810,000	42	BURR
MACS	Warren, MI	775,000	23	BURR
DSC COMPUTER CO.	Richmond, VA	750,000	57	BURR
VIRGINIA DATA CENTER	Norfolk, VA	677,000	4	BURR
NORTHWEST MANAGEMENT SVC.	Seattle, WA	625,000	--	BURR
FINANCIAL DATA SYSTEMS	Schenectady, NY	600,000	--	IBM
SUNSHINE STATE SYSTEMS	Tampa, FL	575,000	8	BURR

EXTERNAL DATA BASES USED BY S&L ASSOCIATIONS

NAME	FUNCTION	OFFERED BY	COSTS
SREA	DATA BASE CONTAINS APPRAISAL, TAX, SELLING PRICE, ETC. ON RESIDENTIAL REAL ESTATE SOLD IN EACH REGION OVER LAST 10 YEARS. INTERACTIVE RCS MODEL USES MULTIVARIANCE STATISTICAL TECHNIQUES TO FORECAST CURRENT MARKET VALUES.	SREA MARKET DATA CENTER INC./ TYMSHARE, INC.	\$50/mo FOR EACH REGION SUBSCRIPTION. \$7-10/APPRaisal REPORT IN RCS
AMMINET	QUOTATION DATA BASE OF SECONDARY MORTGAGE MARKET LOANS SOLD AND AVAILABLE FOR PURCHASE BY S&Ls, INVESTMENT BANKERS AND DEALERS.	AMMINET INC./ REMOTE COMPUTING COMPANY TELERATE INC.	DIALUP-RCC \$185 FOR 4 hrs/mo-\$240 FOR 10/ hrs/mo PLUS RCS COSTS ON-LINE TELERATE \$395/mo (INCLUDES TERM) +50/mo TO LIST MORTGAGES
NATIONAL ECONOMIC AND FINANCIAL DATA BASES	USED BY LARGE S&L BUSINESS ECONOMISTS TO FORECAST MARKET MONEY RATES, INTEREST RATE STRUCTURES, REGIONAL TRENDS AND INDUSTRY GROWTH.	DRI INC. CHASE ECONOMETRICS ADP NETWORK SVC\$. IDC INC.	\$8-20Kyr SUBSCRIPTION COSTS. AVERAGE OF \$1K/mo RCS COSTS.
FEDERAL HOME LOAN BANK	NATIONAL DATA BASE CONTAINS FINANCIAL OPERATING DATA ON ALL MEMBER S&Ls BY DISTRICT ON SEMIANNUAL BASIS.	IN PROCESS OF BEING MADE AVAILABLE EITHER THROUGH FHLB BOARD OR EACH FHLB DISTRICT.	

- The Federal Home Loan Bank Board maintains a large national data base of S&L financial operating data. They are now in the process of making this data base available to RCS vendors either through the FHLB Board or through each district.

- Remote Computing Corporation is the leading vendor of Remote Computing Services (RCS) services for financial planning. Their Savings and Loan Planning Package (SLP) is currently being used by some 80-100 S&Ls on a national basis. The system enables S&L financial officers to accomplish computer-aided cash management, liquidity management, profit analysis, budgeting and long-range planning. Rights to use the Decision Dynamics model can be either purchased or leased. The model is not available for installation on S&L in-house computers.

- Another S&L financial planning input/output model is offered by McSweeny & Associates through a joint venture with GEIS. There are 20 S&Ls using the GE RCS system. The model leases for \$275/month, and uses an average \$350/month per user in RCS costs. The average asset size of S&Ls who do the budgeting process is \$250 million, whereas the entire planning system is used by larger S&Ls with average assets of \$750 million.

- SBC offers a profit planning application package to S&L financial managers and controllers for computer-aided budgeting.

C. OTHER COMPUTER SERVICES

1. FACILITIES MANAGEMENT

- Electronic Data Systems is the leading vendor offering facilities management services. EDS manages the operations of about 30 S&Ls through

facilities management arrangements. EDS offers computing services to other S&Ls from the data centers they operate for their clients. EDS facilities management services are for S&Ls whose aggregate asset size is approximately \$3.75 billion. EDS services an aggregate of 450,000 savings and loan accounts.

- National Sharedata also provides facility management services for S&Ls. An aggregate of 220,000 savings and loan accounts are serviced.
- Boeing Computer Services, Inc. provides facilities management services to S&Ls in two locations. The aggregate number of accounts serviced is 130,000.

2. SOFTWARE PRODUCTS

- A number of vendors, including S&Ls themselves, sell software packages to S&L data processing managers. Examples of software packages acquired by S&Ls can be found in Chapter V.
- The software packages that S&Ls procure from computer services vendors are systems packages in general. The software packages that S&Ls procure from other S&Ls are industry applications oriented.

3. PROFESSIONAL SERVICES FOR MICRO/MINI COMPUTERS

- S&Ls utilize the services of contract programming groups for development of micro codes for communications processors, and for developing communications-oriented operating systems for mini computers used as communication processor front ends and for regional nodes in communication net-

works. SCI, Inc. and Peretronics were frequently mentioned by users as leading vendors of these services.

D. FUTURE CHANGES IN VENDOR CLASSES

- S&L financial managers interviewed felt that EFT systems would change the structure of S&L computer service vendors.
- Many smaller commercial service vendors lack the capital to keep pace with rapidly changing technology and will merge or be acquired by other computer services vendors.
- Many S&L joint-venture service companies will require additional capital resources and technical expertise to remain competitive. S&L chief executive officers will prefer to apply the capital to their prime line of business, residential lending. Some will expand by adding S&Ls to the joint venture. Others will merge, and some will be acquired by commercial computer services vendors.
- The most forward-looking S&L managers look to national EFT networks offered by large computer services vendors.

**APPENDIX A:
QUESTIONNAIRES**

Confidential

Input Questionnaire

User

Catalog No.

Study: Computer Services Markets for the S&L Industry

1. How large is your institution (assets)?

Less than \$50 million

\$50 - \$100 million

\$250-\$500 million

over \$1 billion _____

\$100-\$250 million

\$500 million-\$1 billion

2. Could we obtain a copy of your last annual report or public statement? Yes No

3. Do you have an in-house computer? Yes No

What is its make and size?

Now

Future

Make

Memory size

Operating System

Data base languages

4. Do you run the system on-line? Yes No

If on-line, what are the number and types of terminals you support?

No.

Make

Line Speeds

5. What applications do you support with your in-house EDP system?

Present Applications

% of Total Utilization

_____	_____
_____	_____
_____	_____
_____	_____

6. What new applications do you plan to implement over the next 3 years?

FUTURE APPLICATIONS	DEVELOP IN-HOUSE	OUTSIDE SERVICES
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

7. Do you or anyone else in the organization use outside computer services? No

	% or \$	% or \$
Remote Computing	_____	_____
Batch Processing	_____	_____
Facilities Management	_____	_____
Software Products		
- System Packages	_____	_____
- Application Packages	_____	_____
Software Services	_____	_____
Data Bases	_____	_____
Other (explain)	_____	_____

8. Who buys or authorizes the purchase of computer services in your organization?

9. Could you briefly describe outside services and applications?

Service or Company	Application	% of Total Utilization	Performance

10. Software packages/data bases/ services used

Name	Vendor	Function	Performance

11. Have you considered using outside computer services for any of the in-house processing?

 No If yes, which one(s) _____

12. Can you estimate your entire EDP budget either in gross dollars or as a % of deposits?

	1977	1978	1981	Comments
Total Budget (% or \$)				
Outside				
In-house				
People				
Hardware				
Other				

13. When you use an outside service who usually selects the vendor?

14. Please rank these characteristics in choosing an outside vendor
(1 = unimportant; 5 = very important)

	Rank	Notes
a) Geographic location of vendor	_____	_____
b) Vendor's hardware/software	_____	_____
c) Technical support/training	_____	_____
d) Availability of national network	_____	_____
e) System capacity/response	_____	_____
f) Price	_____	_____
g) Other (explain)	_____	_____

15. Have you changed or added any outside vendors recently?

 No _____

16. Under what conditions might you change vendors?

17. All other things being equal how much of a price reduction would it take to induce you to change vendors or go in-house?

18. What outside computer services or applications might you consider using if they were currently available?

19. What changes and improvements would you like to see vendors adopt in the next 3-5 years in order to make computer services more valuable to you?

20. Have you considered/would you consider facilities management?
21. What is your position on doing EDP work in-house vs. using outside services?
22. Are there any industry developments occurring or likely to be occurring which would increase/decrease your use of outside computer services?
23. How do your vendors bill you?
- Transaction pricing
 - Fixed minimum + monthly variable
 - CPU, connect, I/o, storage
 - Other _____
24. How much support (sales, installation, training) did you need from the vendor at time of installation?
25. How much support do you require now?

26. Do you have any specific technical requirements for your vendors?
- hardware
 - software
 - network
 - languages
 - terminals
 - communication speeds
 - other _____
27. Have you considered the use of minicomputers to replace outside computer services?
28. Do you have any advice or further suggestions you would like to offer vendors of computer services to better help service your needs?
29. Is there anyone else in the organization who should be contacted regarding other computer services?

Confidential

Input Questionnaire

Vendor

Catalog No.

Study: Computer Services Markets for the S&L Industry

1. Do you supply computer services to S&L's?

No

Yes Explain products/services

2. Which areas of the country do you serve?

3. Who in the S&L industry orders your services?

4. Do you offer hardware in conjunction with your service?

No

Yes Explain

5. What is the distribution of S&L's that use your services?

%	#	
___	___	Less than \$50 million assets
___	___	\$50 to \$100 million assets
___	___	\$100-\$250 million assets
___	___	\$250-\$500 million assets
___	___	\$500-\$1 billion assets
___	___	Over \$1 billion assets

6. Can you estimate annual revenues obtained from these services?

	1977	1978	1981	Comments
% of total	_____	_____	_____	_____
or \$	_____	_____	_____	_____

7. What are the main reasons users choose your service over that of competition?

8. Are there any special software aids available? Describe.

9. What is the fee structure for your services?

10. Are you about to offer a new or improved service in the near future? Describe.

11. What equipment do you use for your computer services?

12. What terminal systems do you support?

13. Are the computer services you offer

on-line

remote batch

interactive

other; explain

14. Available literature being sent?

Yes

No

**APPENDIX B:
DEFINITIONS**

APPENDIX B.

DEFINITIONS

● The following are definitions of special terms related to the S&L industry used in this report:

- Automated Clearing House (ACH)

An automated clearing house exchanges payments between members via computer media such as magnetic tape. The ACH is formed by an association of private depository institutions. Most of the current ACHs are located on the premises of Federal Reserve Banks. The ACHs in Chicago and New York are privately operated.

- Demand Deposit Accounting

Commercial banks offer consumers checking account services. The consumer deposits can be withdrawn on demand. In exchange for this service the consumer gives up his right to earn interest on his balances on deposit.

- Electronic Funds Transfer Systems (EFTS)

Electronic Funds Transfer Systems use consumer-operated terminals, telecommunications and computers to accomplish funds transfers between consumers and retailers or depository institutions in lieu of cash or paper check.

- Individual Retirement Account (IRA)

The IRA Account is a special savings account. The deposits and interest are protected from income taxation until the consumer retires. The IRA plan is used by individuals who work for companies that do not have adequate retirement plans.

- Electronic Journaling

In current S&L on-line systems printed tapes are created of all teller transactions for each day. At the close of business the tapes are used to reconcile the tellers' cash, etc. The journal tapes are saved at the branch until the reconciliation process is completed by the servicing computer, usually the next day. In newer on-line systems, journaling is handled by the mini/micro processor in the branch office. Reconciliation is handled between the branch office and the servicing computer immediately upon the close of the business day.

- Keogh Account

The Keogh Account is a special savings account. The deposits and interest are protected from income taxation until the consumer retires. The Keogh plan is used by self-employed people like doctors and actors.

- Market Rate Certificate

The Market Rate Certificate is a special savings certificate. It is issued by some very large S&Ls for deposits of \$100,000 or more. The rate offered is the same as could

be obtained for prime commercial paper (slightly above the current bank prime rate).

- Negotiable Certificate

The Negotiable Certificate is a special savings certificate. It is issued by some very large S&Ls for deposits of \$100,000 or more. The interest rate is fixed for a period of time (1 to 5 years). The certificate is negotiable in that ownership may be transferred without interest penalty until the certificate matures.

- Negotiable Order of Withdrawal (NOW) Account

A NOW Account is a special savings account. NOW Accounts pay the regular savings passbook rate of interest. The consumer writes a NOW draft (similar to a check) which, when countersigned by the depository institution, allows for third-party payment.

● Computer Services. These are services provided by vendors which perform data processing functions using vendor computers, or assist users to perform such functions on their own computers.

● The following are the definitions of the modes of service used in this report:

- Remote Computing Services (RCS)

Provision of data processing to a user by means of terminals at the user's site/s connected by a data communications network to the vendor's central computer. The three sub-modes

of RCS are:

1. Interactive (timesharing) is characterized by interaction of the user with the system, primarily for problem-solving timesharing, but also for data entry and transaction processing - the user is 'on-line' to the program/files.
2. Remote Batch is where the user hands over control of a job to the vendor's computer which schedules job execution according to priorities and resource requirements.
3. Data Base is characterized by the retrieval of information from a vendor-maintained data base - this may be owned by the vendor or a third party.

- Batch Services

This includes data processing performed at vendors' sites of user programs and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing, are also included. Batch services include those expenditures by users which take their data to a vendor site which has a terminal connected to a remote computer used for the actual processing.

- Facilities Management (FM) (also referred to as 'Resource Management' or 'Systems Management').

The management of all or a part of a user's data processing functions under a long-term contract (not less than one year). To qualify as FM, the contractor must directly plan and control as well as operate the facility provided to the user on-site, through communications lines, or in mixed mode. Simply providing resources even though under a long-term contract and/or for all of a user's processing needs does not necessarily qualify as FM.

- Professional Services

Management consulting related to EDP, systems consulting, systems design and programming, and other professional services are included in this category. Services can be provided on a basis of: "Time and Materials", whereby the user pays for the time used of an individual on a daily or other fixed rate, or "Fixed Price", where the user pays a fixed fee for a specific task or series of tasks.

- Software Products

This category is for users' purchases of systems and applications packages for use on in-house computer systems. The figures quoted include lease and purchase expenditures, as well as fees for work performed by the vendor to implement and maintain the package at the users' sites. Fees

for work performed by organizations other than the package vendor are counted in Professional Services. The two sub-categories are:

1. Systems Packages are operating systems, utilities, and language routines that enable the computer/communications system to perform basic functions. This software is provided by the mainfram manufacturers with their hardware; other vendors provide improved versions of this and special-purpose routines. This classification includes compilers, data base management software, communications packages, simulators, performance measurement software, diagnostic software, and sorts.
2. Applications Packages are software which perform processing to serve user functions: they consist of general-purpose packages, such as for accounting and inventory controls, and special-purpose packages, such as personal trust, airline scheduling, and demand deposit accounting.

