

Information Services Markets
1995-2000

Federal Government

Forecast Update

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Federal Government Sector***

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I

Introduction

A

Purpose

The purpose of this forecast update is to identify key market changes for information services in the federal government sector, and to provide the 1995 INPUT forecast for this market.

B

Organization

In addition to this introductory chapter, the report analyzes the information services market and competitive environment as follows:

- Chapter II, Trends, Events, and Issues, discusses how changes, market issues and activities, and competitive factors in the federal sector are affecting the current and likely future use of information services.
- Chapter III, Information Services Market Forecast, presents an analysis of the U.S. federal government market's expenditures for information services by product/service sector and subsector.
- Appendix A, which contains the forecast database, presents a detailed forecast by information service product/service category for the federal government vertical market. A reconciliation to the previous forecast is also provided.

C

Methodology

Much of the data on which this report is based was gathered during 1994 and 1995 as part of INPUT's ongoing Federal Information Procurement, and the Federal Information Technology Market Programs. Trends, market sizes, and growth rates are based primarily on agency budgets and IT plans, and upon in-depth interviews with federal agency officials and the IT



vendors participating in the federal sector. INPUT maintains ongoing relationships with, and a database of all users, contracting officers and vendors it interviews.

The research portion of this report is based on the results of the current year's interviews and analyses of diverse government documentation. The official Budget of the United States for Fiscal Year 1996, related portions of agency detailed budgets in response to the Office of Management and Budget Circular A-11, FY 1995 and FY 1996 editions, Congressional Committee oversight and apportionment meeting records, and more than 35 computer and general business periodicals were used to develop the foundation for calendar 1994 base year, 1995 current year, and 1996-2000 budget request user expenditures.

Each year INPUT converts the federal government's fiscal year (October to September) expenditures—also called outlays—and budget requests into calendar-year expenditures, to conform with the MAP baseline. The forecasts are derived from an INPUT-developed budget model. The model parameters are modified to reflect the views of the agency officials and vendors interviewed for other delivery mode reports produced by INPUT. Future (out-year) values are tested against agency long-range forecasts, the OMB Five-Year Information Technology Report, and specific congressional committee actions.

The federal government's budget request and outlay documents do not provide detailed expenditure values broken out into INPUT's defined product/service categories. INPUT breaks the federal government's numbers down into the defined delivery modes for this report. Additionally, agencies and vendors use different service categories to describe contractor services. INPUT uses particular programs and contracts to verify the values selected. Further, INPUT assures that totals for categories equal the total dollar amounts specified in the government documentation. The specific values of delivery modes and submodes are forecast on a best-effort basis. The forecast dollar amounts should be viewed as indicators of general patterns and trends, and not as precise values.



II**Trends, Events, and Issues****A****General Federal Trends, Events, and Issues**

Many factors operate concurrently to influence the federal IT market. No factor acts alone in influencing budget and spending levels. This section identifies and discusses the major factors influencing the market today and over the next five years. These factors include, but are not limited to, the following:

- Attempts to reduce the federal deficit
- Targeted increases in IT spending
- Influences toward use of commercial products and services
- Pressure to downsize the federal workforce
- National Performance Review recommendations

B**Technology Trends, Events, and Issues**

The U.S. federal information technology market is sensitive to a number of issues, that operate independently and sometimes simultaneously. The major issues are discussed below. Any of these issues can be expected to change in composition, duration, and significance as political and economic concerns are imposed on the procurement process.



1. Price/Performance

Price/performance gains continue for commercial products and are contributing more to the ability of federal agencies to purchase new products. Agencies are spending less and getting increases in performance. The overall budget for IT products is actually increasing. This indicates that agencies are turning more and more to commercial solutions than relying on their own ability to develop systems. It also indicates that the government is changing its previous notion that it required unique solutions to its processing problems.

The negative side of the issue is the reduction in profit margins for vendors of technology products to the government. Products are becoming more of a commodity and the number of suppliers has increased. The advantage to the buyers through price reduction is causing some companies to lose business.

2. The Internet and Network Integration

At the rate federal agencies are installing and operating local and long-distance networks, potential problems of integration are occurring. Although transport-level integration problems are fewer, application integration is becoming a concern for distributed environments and for enterprise solutions.

The Internet is growing rapidly in popularity among agency users, but function is limited for the time being to transfer of messages and documents. The potential for support to electronic commerce is high, but integration of different accounting, ordering, and funds transfer methodologies poses problems for system designers. New security-enhancing tools are emerging, but agencies appear more interested in seeing solutions develop in the commercial environment before they commit to any current solution.

3. Commercial Off-the-Shelf (COTS) Products

In order to reduce development and operating costs, and to decrease the amount of time required to acquire new products, the federal government is turning more to commercial products. A third benefit of using commercial products is that products tend to be "open," allowing them to be more easily integrated into existing environments. A major focus of recent legislation intended to improve procurement actions is on use of commercial products. Fewer programs require developed systems as the government moves away from earlier claims that its operations and programs were unique and not suited to commercial solutions.



4. Procurement Reform

Two major topics of procurement reform have occupied congressional focus over the past three years. The first topic addressed simplification of the procurement process for relatively small contracts—those less than \$100,000. A federal acquisition network (FACNET) was mandated to facilitate purchases, and certain types of opportunities were restricted to small businesses. After one year of enactment, the government and industry appear able to understand how to use these new procedures; however, the government has been very slow in implementing its FACNET systems.

More recent reform is directed toward the management of the procurement process. No major legislation was passed during the 1995 Congress, but some modification in law is expected early in 1996 to address performance and accountability issues. No behavioral changes are expected, even if the law is passed, before 1997.

5. Performance-Based Contracting

Initiatives from the Office of Management and Budget (OMB), General Services Administration (GSA) and Congress address problems of contract performance, both in terms of cost overrun and delays in implementation. The Office of Federal Procurement Policy in the OMB has passed regulations to require agencies to use past performance of contractors as part of the proposal evaluation for new contract awards. The Congress has identified performance metrics as a mandatory requirement for contracts of life cycle value greater than \$100 million. For the past year, the GSA has been withdrawing delegations for procurement authority from large programs that have run into significant cost overrun or have been delayed. Both the Government Accounting Office (GAO) and GSA have issued guidelines on the need for and use of performance metrics in contract performance. The direction for performance improvement was set by the Government Performance Improvement Act of 1993. This legislation set the tone for more recent pushes for less costly, more responsive government.

6. Justification for IT Spending Increases

Justification for information technology spending has typically resided in a lowest overall cost calculation. Under a "best value" determination, agencies may award on an anticipated performance factor in addition to cost. Ultimately, the agency must be able to show that the awarded contract will provide the best overall value to the government. Value is to be determined by cost, performance, and time savings at a ratio to be determined by the selection authority.



7. Fee for Service

Agencies can offer services they perform or contract for to other agencies. These services offer a competitive alternative to outside contracts, and are intended to give agency buyers further alternatives to expensive outside contracting. Agency data centers are popular operations for fees transfer from one agency to another, but federal services are also offered to state and local government entities whose performance is integral to programs sponsored and/or funded by the federal government. Agencies charge fees to local government for processing and program support, such as for law enforcement activities.

The GSA offers several types of central processing and facilities support services through centrally awarded contracts as nonmandatory alternatives for agencies to acquire support for a fee. Tools and services developed by some agencies, such as business process reengineering support, are made available to other departments.

Agencies are beginning to expand their fee-for-service philosophy to entire data processing functions. Fewer agencies have discrete operating budgets for ADP. These functions are becoming accountable for their own costs through charge-back to programs. Eventually, these operations could be outsourced entirely, since they are not what can be considered inherently government, and because the private sector is capable of providing competitive services.



III**Information Services Market Forecast**

INPUT separates the federal IT budget elements and recombines them into more convenient industry terms. INPUT's forecast provides an overall perspective of what the federal government will spend on goods and services for seven information services product and service categories as defined by INPUT.

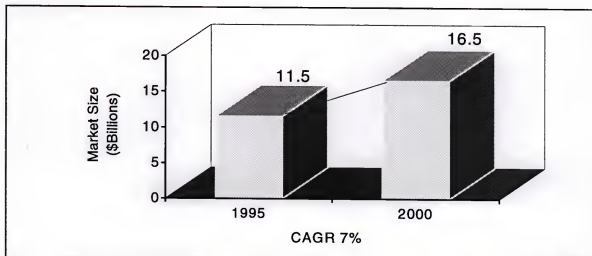
A**Total Market Forecast, 1995 - 2000**

The market for information services expenditures in the federal government sector is expected to grow to \$16.5 billion by the year 2000. As shown in Exhibit III-1, the compound annual growth rate for the period 1995-2000 is 7%.



Exhibit III-1

Federal Government—Information Services Market, 1995 - 2000



Source: INPUT

B

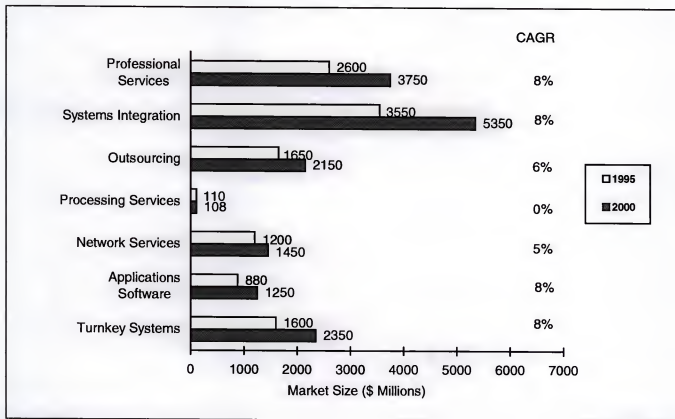
Forecast by Product/Service Category

The 1995-2000 forecast of user expenditures by product/service category for the federal government sector is shown in Exhibit III-2. Values in the exhibit are rounded. The actual values are shown in Appendix A. Discussion of the individual forecasts for product/service sectors follows this exhibit.



Exhibit III-2

Federal Government—Information Services Market by Product/Service Category, 1995-2000



Note: Numbers are rounded

Source: INPUT

1. Professional Services

Professional services include consulting, design, education and training, and software development. This segment does not include the professional services associated with systems integration, systems operations and telecommunications.

The federal professional services market will grow from \$2.6 billion in 1995 to \$3.8 billion in 2000 at a CAGR of 8%, a slightly higher rate than the CAGR of 7% for the total information services market. A major effort by the Congress and the White House to reduce government spending is affecting spending levels. Actual spending in 1994 was less than planned by the government because of this reduction, so levels for out-years anticipated in 1995 have been adjusted downward. The government already depends heavily on contract



sources for services, but more services will be required from industry as the federal workforce declines in numbers and in expertise.

Some of the major government programs contracting for professional services include:

- NASA's System Engineering and Support Services
- Navy's Corporate Information Management Standard Procurement
- Defense Research and Engineering Inter-Site Services
- Justice's Information Technology Support Services
- NIH's CERTAIN Support Services

2. Systems Integration

The market for systems integration is expected to grow at an 8% CAGR from \$3.6 billion in 1995 to \$5.3 billion in 2000. Although the SI market no longer reaches the levels set as recently as 1991, the market continues to show healthy growth. All submodes of systems integration are growing at essentially the same rate.

Unlike in the commercial markets, hardware outlays continue to be the predominant investment. The hardware segment is currently 56% of the total SI market and is expected to increase to 57% by 2000 as the government leans more to commercial products than developed solutions.

The commercial products segments of SI all have a CAGR of 9%, showing a slightly higher growth rate than services. The equipment portion of the SI market was flat in the late 1980s, reflecting sizable budget cuts at many agencies, but beginning in 1991 and continuing through 1996, there has been a significant increase in commercial product acquisitions.

Currently, civilian SI spending exceeds that for defense by approximately \$1.5 billion. This reflects continuing budget constraints in DoD. All major SI initiatives are not being canceled; some may be deferred or extended. As a result, the Defense Department market will continue to lose ground to the civilian market demand over the next five years.

Some of the active systems integration programs include:

- Sustained Base Information System for \$500 million
- AWIPS-90 for National Weather Service at \$122 million



- Treasury's System 90 at \$57 million
- IRS Service Center Support System at \$2.2 billion
- Air Force Integrated Command Control Communications Computers and Intelligence System at \$900 million

3. Outsourcing

Federal outsourcing expenditures are expected to be \$1.6 billion in 1995, an 8% increase over reported levels for 1994. Though the market is expected to grow at a modest 6% CAGR over the next five years, the entire federal government is poised to transfer processing responsibility to the private sector. In some cases, program responsibility will be transferred to the state and local levels.

Outsourcing began to grow in 1990, after experiencing CAGRs of 6% to 8% since the comebacks of 1983, when a number of new systems were implemented. The turnaround in the outsourcing market at that time was due largely to the Gramm-Rudman-Hollings Budget Control Act. Similar congressional activity today will force a renewed effort to outsource.

The growth of outsourcing will not be rapid, however. Many programs will be privatized, and entire agencies face the threat of extinction. The resultant reduction in program activity by federal agencies will decrease overall spending.

The largest segment of the federal outsourcing market addresses the management of data processing facilities. Both government owned—contractor operated (GOCO) facilities and contractor owned—contractor operated (COCO) facilities will grow at a 5% CAGR, the same as forecast last year.

This year, INPUT has added two new categories of outsourcing to the market. Application management and business operations represent new definitions of outsourcing. Application management refers to short-term transfer of responsibility to the private sector to run a specific program. Business operations involve the longer term transfer of responsibility for entire programs to the private sector. Though neither of these two categories is as significant in the federal sector it is in the commercial markets, there appears to be some indication that the submodes could generate interest within federal agencies as they further downsize.

Some of the major outsourcing programs in the federal government include:

- EPA's National Computer Center Contract valued at \$300 million
- Housing and Urban Development Information Processing System



- Energy's Central Computing Facility
- NASA's Scientific and Technical Information Facility valued at \$40 million
- Education Department's Student Loan Programs.

4. Processing Services

Processing services include transaction processing with some batch-mode workloads. For the last half of the 1980s, this service category declined as installation of new distributed processing systems and PCs depressed the need for outside processing support. The market currently features transactions involving funds transfer and other financial accounting in specific agencies, such as Treasury's Financial Management Service. Although all agencies require transaction processing support, the cost per transaction continues to drop, and overall market size will remain relatively flat for the foreseeable future.

5. Network Services

Network services is divided into two major segments: electronic information services selling information to users, and network applications-enhanced transport of user information processing needs. Earlier INPUT budget estimates developed from OMB A-11 data were substantially undervalued because the funds were buried in general telephone and telecommunications budgets. Although agencies have improved their reporting of telecommunications requirements over the past several years, it is becoming more difficult to separate telecommunications spending from ADP due to technology overlaps.

Agency network services contracts typically last seven to ten years, and rarely are terminated by budget constraints. Separate new and replacement acquisitions may be deferred or canceled if an enhanced Federal Telecommunications Service contract is negotiated in 1996. This year, agencies reported a significant reduction in requirements for new leased circuits. The growth rate has fallen from an 11% CAGR to a modest 5%. This phenomenon can be attributed mostly to the expanding use of existing commercial circuits developed as part of the Internet. The government appears ready to accept this new technology and its inherent economy gains to conduct its business, particularly for electronic mail.

Some major telecommunications programs are:

- The Defense Department's Research and Engineering Network (DREN), valued at \$1 billion



- The FTS2000 follow-on contract, valued at \$26 billion
- DISA's Hawaii Information Transfer System (HITS), valued at \$85 million
- The Centers of Disease Control's Communications Support Contract, valued at \$20 million

6. Applications Software Products

Application software products include accounting, planning, human resources and other ready-to-use software products. It may include software products that directly support the mission of the agency.

Applications software outlays are driven by the large PC inventory and updates of existing mainframe suites. Client server tools are increasing the likelihood of continued growth in these activities. Price competition was considered the key factor in the decreased growth in this market in past years, but growing demands for software products in distributed environments is causing new growth. The CAGR for the next five years across all platforms has increased, with workstation and PC development leading the way at 8%.

A stabilizer in this market is the increased development of commercial software products available to agencies. Commercial products typically cost less and can be implemented more quickly.

Increasing emphasis is being placed by the oversight agencies (GSA and GAO in particular) on the use of standardized applications. Commercial-grade off-the-shelf packages that have been modified to meet government needs are being acquired. Other commercial software products are purchased at volume discounts as part of "application suites," or are purchased centrally with rights to copy and distribute.

7. Turnkey Systems

Turnkey systems are value-added packaged hardware and software solutions to specific applications requirements that, with few modifications, satisfy commercial, industrial and government needs.

This product/service category's moderate federal growth rate results from sharp Defense budget cuts for customized applications, and for increasingly more available commercial solutions for entire operations.

The market is expected to increase from over \$1.5 billion in 1995 to almost \$2.4 billion in 2000. This represents a CAGR of 8%, up slightly from the 7% forecast last year.



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Forecast Database and Reconciliation

A

Forecast Database

One of the features of INPUT's Federal Systems and Services Market Program is the creation of a computer-based forecast model for predicting the likely growth rates of federal IT expenditures. The model uses the data provided in Section 43 (Information Resource Plans and Budget Request) of the OMB Circular A-11 Federal Annual Budget Request Preparation Guidelines. This information provides the first two-year baseline of the five-year forecast.

The primary service modes that closely follow the federal government IT budget elements are listed in Exhibit A-1. The most significant feature of this part of the forecast model is that the summation of expected expenditures for each fiscal year equals the amount derived from agency reporting as the "Total Contracted Out Spending." (If the primary service modes exceed the budget/forecast it is unlikely that the funds would be available.)

The forecast uses year-to-year growth rates established by INPUT and estimates of the Congressional Budget Office, Office of Management and Budget and economic projections of economic outlook groups in several agencies.

Exhibit A-1 presents the detailed 1995-2000 forecast for the federal government sector.



Exhibit A-1

**Federal Government—
Market Forecast by Product/Service, 1995-2000**

Product/Service Category	1994 (\$M)	Growth 94-95 (%)	1995 (\$M)	1996 (\$M)	1997 (\$M)	1998 (\$M)	1999 (\$M)	2000 (\$M)	CAGR 95-00 (%)
Industry Total	10963	5%	11537	12677	13631	14465	15394	16461	7%
Professional Services	2315	13%	2606	2735	2990	3222	3470	3758	8%
- IS Consulting	474	13%	535	562	615	663	712	768	7%
- Education & Training	404	9%	442	474	511	544	578	615	7%
- Software Development	1437	13%	1629	1699	1864	2015	2180	2375	8%
Systems Integration	3641	-2%	3556	4143	4438	4704	4997	5335	8%
- Equipment	2022	-2%	1991	2413	2562	2695	2844	3020	9%
- Software Products	299	2%	305	378	401	422	447	476	9%
- Professional Services	1143	-6%	1070	1117	1226	1325	1429	1544	8%
- Other	177	7%	190	235	249	262	277	295	9%
Outsourcing	1515	8%	1635	1683	1813	1924	2038	2165	6%
- Platform Operations	415	7%	446	456	487	513	539	567	5%
- Applications Operations	619	8%	667	686	738	783	826	870	5%
- Desktop Services	138	8%	149	155	168	180	197	225	9%
- Network Management	207	8%	223	231	251	267	282	294	6%
- Application Management	77	14%	88	91	100	108	117	128	8%
- Business Operations	59	5%	62	64	69	73	77	81	5%
Processing Services	108	2%	110	107	105	101	104	108	0%
- Transaction Processing	108	2%	110	107	105	101	104	108	0%
Network Services	1124	5%	1178	1191	1273	1320	1391	1472	5%
- Electronic Information Svcs	292	4%	305	310	331	343	362	383	5%
- Network Applications	832	5%	873	881	942	977	1029	1089	5%
Applications Software	816	7%	876	999	1057	1117	1186	1264	8%
- Mainframe	122	7%	130	144	147	151	162	177	6%
- Minicomputer	188	6%	200	223	231	240	256	278	7%
- Workstation/PC	506	8%	546	632	679	726	768	809	8%
Turnkey Systems	1444	9%	1576	1819	1955	2077	2208	2359	8%
- Equipment	650	9%	707	807	861	914	971	1038	8%
- Software Products	549	9%	597	680	723	768	817	873	8%
- Professional Services	245	11%	272	332	371	395	420	448	10%

Source: INPUT



B

Forecast Reconciliation

Exhibit A-2 presents the 1995 database reconciliation for the federal government sector.

Exhibit A-2

Federal Government—1995 MAP Database Reconciliation

Product/Service Sector	1994 Market				1999 Market				94-99	94-99
	1994 Market (Fcst) (\$M)	1995 Report (Actual) (\$M)	Variance From 1994 Forecast		1994 Market (Fcst) (\$M)	1995 Report (Fcst) (\$M)	Variance From 1994 Forecast		CAGR per data '94 Rpt (%)	CAGR per data '95 Rpt (%)
			(\$M)	(%)			(\$M)	(%)		
Total	11459	10963	-496	-4%	16473	15394	-1079	-7%	8%	7%
Professional Services	2648	2315	-333	-13%	4032	3470	-562	-14%	9%	8%
Systems Integration	3729	3641	-88	-2%	5508	4997	-511	-9%	8%	7%
Outsourcing	1532	1515	-17	-1%	1831	2038	207	11%	4%	6%
Processing Services	137	108	-29	-21%	134	104	-30	-22%	0%	-1%
Network Services	1219	1124	-95	-8%	2054	1391	-663	-32%	11%	4%
Applications Software	713	816	106	14%	852	1186	334	39%	4%	8%
Turnkey Systems	1481	1444	-37	-2%	2062	2208	146	7%	7%	9%

Source: INPUT

Major changes occurred in the federal IT market during 1994 as a result of two major focuses. Reductions in budgets throughout the government are curtailing discretionary spending levels for programs, and procurement reform through the Federal Acquisition Streamlining Act of 1994 is forcing agencies to move more to custom off-the-shelf applications software products than to development. A noticeable impact is seen in the reconciliation table, Exhibit A-2. Professional services, under which new systems are developed, declined from levels anticipated in 1994. Processing services include those transaction processing tasks obtained through commercial services. This market had already shown decline in the early 1990s. Recent budget reductions are precipitating a more rapid decline in this segment than reported last year.

In the out-years, the decline in professional services and processing services continues beyond levels anticipated in 1994. Network services spending will decline further as more robust and functional commercial products are developed. The biggest gains in the out-year markets will be in outsourcing,



as federal agencies go through additional levels of downsizing, and in applications software products, as more standardized packages are incorporated into federal government activities.



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1995-2000**

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U.S. Information Services Market Analysis Program

Information Services Markets, 1995-2000, Federal Government Sector

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Figure 1



Figure 1

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I

Introduction

A

Purpose

The purpose of this forecast update is to identify key market changes for information services in the federal government sector, and to provide the 1995 INPUT forecast for this market.

B

Organization

In addition to this introductory chapter, the report analyzes the information services market and competitive environment as follows:

- Chapter II, Trends, Events, and Issues, discusses how changes, market issues and activities, and competitive factors in the federal sector are affecting the current and likely future use of information services.
- Chapter III, Information Services Market Forecast, presents an analysis of the U.S. federal government market's expenditures for information services by product/service sector and subsector.
- Appendix A, which contains the forecast database, presents a detailed forecast by information service product/service category for the federal government vertical market. A reconciliation to the previous forecast is also provided.

C

Methodology

Much of the data on which this report is based was gathered during 1994 and 1995 as part of INPUT's ongoing Federal Information Procurement, and the Federal Information Technology Market Programs. Trends, market sizes, and growth rates are based primarily on agency budgets and IT plans, and upon in-depth interviews with federal agency officials and the IT

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in the context of public administration or corporate governance. The text suggests that without reliable records, it becomes difficult to track progress, identify issues, and ensure that resources are being used effectively.

2. The second part of the document addresses the challenges associated with data collection and analysis. It notes that while modern technology offers powerful tools for gathering and processing information, the quality and consistency of the data can vary significantly. The author highlights the need for standardized protocols and rigorous quality control measures to ensure that the data being used is accurate and relevant. Additionally, the text mentions the importance of training personnel to handle data responsibly and ethically.

3. The third part of the document focuses on the role of communication in the overall process. It argues that clear and concise communication is vital for ensuring that all stakeholders are on the same page. This includes providing regular updates, listening to feedback, and being transparent about any challenges or setbacks. The text also touches upon the importance of documentation, as it serves as a permanent record of decisions and actions taken, which can be referred back to as needed.

4. Finally, the document concludes by reiterating the importance of a proactive and collaborative approach. It encourages organizations to embrace change and innovation, while also maintaining a strong foundation of trust and integrity. The author suggests that by following these principles, organizations can achieve their goals more effectively and sustainably.

vendors participating in the federal sector. INPUT maintains ongoing relationships with, and a database of all users, contracting officers and vendors it interviews.

The research portion of this report is based on the results of the current year's interviews and analyses of diverse government documentation. The official Budget of the United States for Fiscal Year 1996, related portions of agency detailed budgets in response to the Office of Management and Budget Circular A-11, FY 1995 and FY 1996 editions, Congressional Committee oversight and apportionment meeting records, and more than 35 computer and general business periodicals were used to develop the foundation for calendar 1994 base year, 1995 current year, and 1996-2000 budget request user expenditures.

Each year INPUT converts the federal government's fiscal year (October to September) expenditures—also called outlays—and budget requests into calendar-year expenditures, to conform with the MAP baseline. The forecasts are derived from an INPUT-developed budget model. The model parameters are modified to reflect the views of the agency officials and vendors interviewed for other delivery mode reports produced by INPUT. Future (out-year) values are tested against agency long-range forecasts, the OMB Five-Year Information Technology Report, and specific congressional committee actions.

The federal government's budget request and outlay documents do not provide detailed expenditure values broken out into INPUT's defined product/service categories. INPUT breaks the federal government's numbers down into the defined delivery modes for this report. Additionally, agencies and vendors use different service categories to describe contractor services. INPUT uses particular programs and contracts to verify the values selected. Further, INPUT assures that totals for categories equal the total dollar amounts specified in the government documentation. The specific values of delivery modes and submodes are forecast on a best-effort basis. The forecast dollar amounts should be viewed as indicators of general patterns and trends, and not as precise values.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It also outlines the various methods used to collect and analyze data, including surveys and interviews.

3. The results of the study are presented in a series of tables and graphs, showing a clear trend over time.

4. Finally, the document concludes with a series of recommendations for future research and practice.

5. The overall findings suggest that there is a significant correlation between the variables studied.

6. This research provides valuable insights into the complex nature of the phenomenon being investigated.

7. The data collected over the course of the study supports the hypothesis that was initially proposed.

8. The study also highlights the need for further exploration in this area, particularly regarding the underlying mechanisms.

9. In conclusion, the findings of this study are both informative and thought-provoking.

10. The research contributes to the existing body of knowledge on this topic and offers practical implications.

11. The study's methodology was rigorous and thorough, ensuring the reliability of the results.

12. The data analysis was conducted using advanced statistical techniques, providing a high level of precision.

13. The findings are consistent with previous research, suggesting a common underlying principle.

14. The study also identifies several limitations, which will be addressed in future work.

15. Overall, the research is a significant contribution to the field and warrants further attention.

16. The study's results are presented in a clear and concise manner, making them easy to understand.

17. The research is well-organized and follows a logical progression, from introduction to conclusion.

18. The study's findings are supported by a wealth of data, providing a strong foundation for the conclusions.

19. The research is a model of thoroughness and attention to detail, and is highly recommended.

20. The study's findings are both interesting and important, and will have a lasting impact on the field.

II

Trends, Events, and Issues

A

General Federal Trends, Events, and Issues

Many factors operate concurrently to influence the federal IT market. No factor acts alone in influencing budget and spending levels. This section identifies and discusses the major factors influencing the market today and over the next five years. These factors include, but are not limited to, the following:

- Attempts to reduce the federal deficit
- Targeted increases in IT spending
- Influences toward use of commercial products and services
- Pressure to downsize the federal workforce
- National Performance Review recommendations

B

Technology Trends, Events, and Issues

The U.S. federal information technology market is sensitive to a number of issues, that operate independently and sometimes simultaneously. The major issues are discussed below. Any of these issues can be expected to change in composition, duration, and significance as political and economic concerns are imposed on the procurement process.

THE HISTORY OF THE

The history of the world is a vast and complex subject, encompassing the lives and actions of countless individuals and the events that have shaped our planet. From the dawn of civilization to the present day, the human story is one of constant change and evolution. The early years of our species are marked by a struggle for survival, as our ancestors sought to adapt to their environments and overcome the challenges of a harsh world. Over time, however, we have developed the capacity for reason and self-awareness, which has allowed us to build societies, create art, and explore the frontiers of knowledge. The history of the world is not just a record of events, but a reflection of the human condition, showing us the strengths and weaknesses of our species and the potential for progress and improvement. It is a story that continues to unfold, as we move forward into the future, facing new challenges and opportunities. The history of the world is a testament to the resilience and ingenuity of the human spirit, and a source of inspiration for all who seek to make a positive impact on the world.

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1. Price/Performance

Price/performance gains continue for commercial products and are contributing more to the ability of federal agencies to purchase new products. Agencies are spending less and getting increases in performance. The overall budget for IT products is actually increasing. This indicates that agencies are turning more and more to commercial solutions than relying on their own ability to develop systems. It also indicates that the government is changing its previous notion that it required unique solutions to its processing problems.

The negative side of the issue is the reduction in profit margins for vendors of technology products to the government. Products are becoming more of a commodity and the number of suppliers has increased. The advantage to the buyers through price reduction is causing some companies to lose business.

2. The Internet and Network Integration

At the rate federal agencies are installing and operating local and long-distance networks, potential problems of integration are occurring. Although transport-level integration problems are fewer, application integration is becoming a concern for distributed environments and for enterprise solutions.

The Internet is growing rapidly in popularity among agency users, but function is limited for the time being to transfer of messages and documents. The potential for support to electronic commerce is high, but integration of different accounting, ordering, and funds transfer methodologies poses problems for system designers. New security-enhancing tools are emerging, but agencies appear more interested in seeing solutions develop in the commercial environment before they commit to any current solution.

3. Commercial Off-the-Shelf (COTS) Products

In order to reduce development and operating costs, and to decrease the amount of time required to acquire new products, the federal government is turning more to commercial products. A third benefit of using commercial products is that products tend to be "open," allowing them to be more easily integrated into existing environments. A major focus of recent legislation intended to improve procurement actions is on use of commercial products. Fewer programs require developed systems as the government moves away from earlier claims that its operations and programs were unique and not suited to commercial solutions.

[The text on this page is extremely faint and illegible. It appears to be a multi-paragraph document, possibly a letter or a report, with several lines of text visible but not readable.]

4. Procurement Reform

Two major topics of procurement reform have occupied congressional focus over the past three years. The first topic addressed simplification of the procurement process for relatively small contracts—those less than \$100,000. A federal acquisition network (FACNET) was mandated to facilitate purchases, and certain types of opportunities were restricted to small businesses. After one year of enactment, the government and industry appear able to understand how to use these new procedures; however, the government has been very slow in implementing its FACNET systems.

More recent reform is directed toward the management of the procurement process. No major legislation was passed during the 1995 Congress, but some modification in law is expected early in 1996 to address performance and accountability issues. No behavioral changes are expected, even if the law is passed, before 1997.

5. Performance-Based Contracting

Initiatives from the Office of Management and Budget (OMB), General Services Administration (GSA) and Congress address problems of contract performance, both in terms of cost overrun and delays in implementation. The Office of Federal Procurement Policy in the OMB has passed regulations to require agencies to use past performance of contractors as part of the proposal evaluation for new contract awards. The Congress has identified performance metrics as a mandatory requirement for contracts of life cycle value greater than \$100 million. For the past year, the GSA has been withdrawing delegations for procurement authority from large programs that have run into significant cost overrun or have been delayed. Both the Government Accounting Office (GAO) and GSA have issued guidelines on the need for and use of performance metrics in contract performance. The direction for performance improvement was set by the Government Performance Improvement Act of 1993. This legislation set the tone for more recent pushes for less costly, more responsive government.

6. Justification for IT Spending Increases

Justification for information technology spending has typically resided in a lowest overall cost calculation. Under a "best value" determination, agencies may award on an anticipated performance factor in addition to cost. Ultimately, the agency must be able to show that the awarded contract will provide the best overall value to the government. Value is to be determined by cost, performance, and time savings at a ratio to be determined by the selection authority.



7. Fee for Service

Agencies can offer services they perform or contract for to other agencies. These services offer a competitive alternative to outside contracts, and are intended to give agency buyers further alternatives to expensive outside contracting. Agency data centers are popular operations for fees transfer from one agency to another, but federal services are also offered to state and local government entities whose performance is integral to programs sponsored and/or funded by the federal government. Agencies charge fees to local government for processing and program support, such as for law enforcement activities.

The GSA offers several types of central processing and facilities support services through centrally awarded contracts as nonmandatory alternatives for agencies to acquire support for a fee. Tools and services developed by some agencies, such as business process reengineering support, are made available to other departments.

Agencies are beginning to expand their fee-for-service philosophy to entire data processing functions. Fewer agencies have discrete operating budgets for ADP. These functions are becoming accountable for their own costs through charge-back to programs. Eventually, these operations could be outsourced entirely, since they are not what can be considered inherently government, and because the private sector is capable of providing competitive services.



III

Information Services Market Forecast

INPUT separates the federal IT budget elements and recombines them into more convenient industry terms. INPUT's forecast provides an overall perspective of what the federal government will spend on goods and services for seven information services product and service categories as defined by INPUT.

A

Total Market Forecast, 1995 - 2000

The market for information services expenditures in the federal government sector is expected to grow to \$16.5 billion by the year 2000. As shown in Exhibit III-1, the compound annual growth rate for the period 1995-2000 is 7%.

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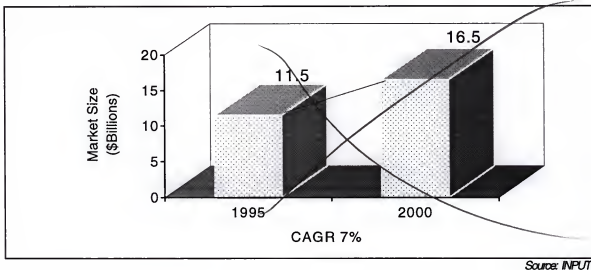
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Exhibit III-1

Federal Government-Information Services Market, 1995 - 2000



B

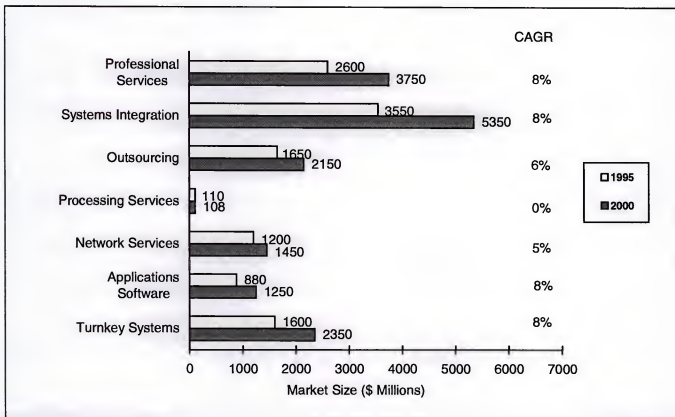
Forecast by Product/Service Category

The 1995-2000 forecast of user expenditures by product/service category for the federal government sector is shown in Exhibit III-2. Values in the exhibit are rounded. The actual values are shown in Appendix A. Discussion of the individual forecasts for product/service sectors follows this exhibit.



Exhibit III-2

Federal Government—Information Services Market by Product/Service Category, 1995-2000



Note: Numbers are rounded

Source: INPUT

1. Professional Services

Professional services include consulting, design, education and training, and software development. This segment does not include the professional services associated with systems integration, systems operations and telecommunications.

The federal professional services market will grow from \$2.6 billion in 1995 to \$3.8 billion in 2000 at a CAGR of 8%, a slightly higher rate than the CAGR of 7% for the total information services market. A major effort by the Congress and the White House to reduce government spending is affecting spending levels. Actual spending in 1994 was less than planned by the government because of this reduction, so levels for out-years anticipated in 1995 have been adjusted downward. The government already depends



heavily on contract sources for services, but more services will be required from industry as the federal workforce declines in numbers and in expertise.

Some of the major government programs contracting for professional services include:

- NASA's System Engineering and Support Services
- Navy's Corporate Information Management Standard Procurement
- Defense Research and Engineering Inter-Site Services
- Justice's Information Technology Support Services
- NIH's CERTAIN Support Services

2. Systems Integration

The market for systems integration is expected to grow at an 8% CAGR from \$3.6 billion in 1995 to \$5.3 billion in 2000. Although the SI market no longer reaches the levels set as recently as 1991, the market continues to show healthy growth. All submodes of systems integration are growing at essentially the same rate.

Unlike in the commercial markets, hardware outlays continue to be the predominant investment. The hardware segment is currently 56% of the total SI market and is expected to increase to 57% by 2000 as the government leans more to commercial products than developed solutions.

The commercial products segments of SI all have a CAGR of 9%, showing a slightly higher growth rate than services. The equipment portion of the SI market was flat in the late 1980s, reflecting sizable budget cuts at many agencies, but beginning in 1991 and continuing through 1996, there has been a significant increase in commercial product acquisitions.

Currently, civilian SI spending exceeds that for defense by approximately \$1.5 billion. This reflects continuing budget constraints in DoD. All major SI initiatives are not being canceled; some may be deferred or extended. As a result, the Defense Department market will continue to lose ground to the civilian market demand over the next five years.

Some of the active systems integration programs include:

- Sustained Base Information System for \$500 million
- AWIPS-90 for National Weather Service at \$122 million



- Treasury's System 90 at \$57 million
- IRS Service Center Support System at \$2.2 billion
- Air Force Integrated Command Control Communications Computers and Intelligence System at \$900 million

3. Outsourcing

Federal outsourcing expenditures are expected to be \$1.6 billion in 1995, an 8% increase over reported levels for 1994. Though the market is expected to grow at a modest 6% CAGR over the next five years, the entire federal government is poised to transfer processing responsibility to the private sector. In some cases, program responsibility will be transferred to the state and local levels.

Outsourcing began to grow in 1990, after experiencing CAGRs of 6% to 8% since the comebacks of 1983, when a number of new systems were implemented. The turnaround in the outsourcing market at that time was due largely to the Gramm-Rudman-Hollings Budget Control Act. Similar congressional activity today will force a renewed effort to outsource.

The growth of outsourcing will not be rapid, however. Many programs will be privatized, and entire agencies face the threat of extinction. The resultant reduction in program activity by federal agencies will decrease overall spending.

The largest segment of the federal outsourcing market addresses the management of data processing facilities. Both government owned—contractor operated (GOCO) facilities and contractor owned—contractor operated (COCO) facilities will grow at a 5% CAGR, the same as forecast last year.

This year, INPUT has added two new categories of outsourcing to the market. Application management and business operations represent new definitions of outsourcing. Application management refers to short-term transfer of responsibility to the private sector to run a specific program. Business operations involve the longer term transfer of responsibility for entire programs to the private sector. Though neither of these two categories is as significant in the federal sector it is in the commercial markets, there appears to be some indication that the submodes could generate interest within federal agencies as they further downsize.

Some of the major outsourcing programs in the federal government include:

- EPA's National Computer Center Contract valued at \$300 million
- Housing and Urban Development Information Processing System

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in the context of public administration or corporate governance. The text suggests that clear documentation helps in identifying trends, resolving disputes, and ensuring compliance with relevant laws and regulations.

2. The second part of the document focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions can significantly improve the efficiency and security of data management. The author notes that while technology offers many benefits, it also introduces new challenges, such as data privacy and cybersecurity, which must be carefully addressed through robust policies and protocols.

3. The third part of the document discusses the importance of training and education for staff involved in record-keeping. It argues that well-trained personnel are crucial for ensuring the accuracy and integrity of the records. The text suggests that regular training sessions and workshops can help keep staff updated on the latest best practices and technological advancements in the field.

4. The fourth part of the document addresses the issue of data retention and archiving. It explains that not all data should be kept indefinitely, and that organizations should have clear policies regarding how long different types of records should be stored. The text also discusses the importance of secure archiving methods to ensure that historical data remains accessible and protected from loss or tampering.

5. The fifth and final part of the document provides a summary of the key points discussed and offers some concluding thoughts. It reiterates that effective record-keeping is a continuous process that requires ongoing attention and resources. The author encourages organizations to regularly review and update their record-keeping practices to stay current and effective.

- Energy's Central Computing Facility
- NASA's Scientific and Technical Information Facility valued at \$40 million
- Education Department's Student Loan Programs.

4. Processing Services

Processing services include transaction processing with some batch-mode workloads. For the last half of the 1980s, this service category declined as installation of new distributed processing systems and PCs depressed the need for outside processing support. The market currently features transactions involving funds transfer and other financial accounting in specific agencies, such as Treasury's Financial Management Service. Although all agencies require transaction processing support, the cost per transaction continues to drop, and overall market size will remain relatively flat for the foreseeable future.

5. Network Services

Network services is divided into two major segments: electronic information services selling information to users, and network applications-enhanced transport of user information processing needs. Earlier INPUT budget estimates developed from OMB A-11 data were substantially undervalued because the funds were buried in general telephone and telecommunications budgets. Although agencies have improved their reporting of telecommunications requirements over the past several years, it is becoming more difficult to separate telecommunications spending from ADP due to technology overlaps.

Agency network services contracts typically last seven to ten years, and rarely are terminated by budget constraints. Separate new and replacement acquisitions may be deferred or canceled if an enhanced Federal Telecommunications Service contract is negotiated in 1996. This year, agencies reported a significant reduction in requirements for new leased circuits. The growth rate has fallen from an 11% CAGR to a modest 5%. This phenomenon can be attributed mostly to the expanding use of existing commercial circuits developed as part of the Internet. The government appears ready to accept this new technology and its inherent economy gains to conduct its business, particularly for electronic mail.

Some major telecommunications programs are:

- The Defense Department's Research and Engineering Network (DREN), valued at \$1 billion



- The FTS2000 follow-on contract, valued at \$26 billion
- DISA's Hawaii Information Transfer System (HITS), valued at \$85 million
- The Centers of Disease Control's Communications Support Contract, valued at \$20 million

6. Applications Software Products

Application software products include accounting, planning, human resources and other ready-to-use software products. It may include software products that directly support the mission of the agency. Applications software outlays are driven by the large PC inventory and updates of existing mainframe suites. Client server tools are increasing the likelihood of continued growth in these activities. Price competition was considered the key factor in the decreased growth in this market in past years, but growing demands for software products in distributed environments is causing new growth. The CAGR for the next five years across all platforms has increased, with workstation and PC development leading the way at 8%.

A stabilizer in this market is the increased development of commercial software products available to agencies. Commercial products typically cost less and can be implemented more quickly.

Increasing emphasis is being placed by the oversight agencies (GSA and GAO in particular) on the use of standardized applications. Commercial-grade off-the-shelf packages that have been modified to meet government needs are being acquired. Other commercial software products are purchased at volume discounts as part of "application suites," or are purchased centrally with rights to copy and distribute.

7. Turnkey Systems

Turnkey systems are value-added packaged hardware and software solutions to specific applications requirements that, with few modifications, satisfy commercial, industrial and government needs.

This product/service category's moderate federal growth rate results from sharp Defense budget cuts for customized applications, and for increasingly more available commercial solutions for entire operations.

The market is expected to increase from over \$1.5 billion in 1995 to almost \$2.4 billion in 2000. This represents a CAGR of 8%, up slightly from the 7% forecast last year.



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Forecast Database and Reconciliation

A

Forecast Database

One of the features of INPUT's Federal Systems and Services Market Program is the creation of a computer-based forecast model for predicting the likely growth rates of federal IT expenditures. The model uses the data provided in Section 43 (Information Resource Plans and Budget Request) of the OMB Circular A-11 Federal Annual Budget Request Preparation Guidelines. This information provides the first two-year baseline of the five-year forecast.

The primary service modes that closely follow the federal government IT budget elements are listed in Exhibit A-1. The most significant feature of this part of the forecast model is that the summation of expected expenditures for each fiscal year equals the amount derived from agency reporting as the "Total Contracted Out Spending." (If the primary service modes exceed the budget/forecast it is unlikely that the funds would be available.)

The forecast uses year-to-year growth rates established by INPUT and estimates of the Congressional Budget Office, Office of Management and Budget and economic projections of economic outlook groups in several agencies.

Exhibit A-1 presents the detailed 1995-2000 forecast for the federal government sector.



Exhibit A-1

Federal Government—Market Forecast by Product/Service, 1995-2000

Product/Service Category	1994 (\$M)	Growth 94-95 (%)	1995 (\$M)	1996 (\$M)	1997 (\$M)	1998 (\$M)	1999 (\$M)	2000 (\$M)	CAGR 95-00 (%)
Industry Total	10963	5%	11537	12677	13631	14465	15394	16461	7%
Professional Services	2315	13%	2606	2735	2990	3222	3470	3758	8%
- IS Consulting	474	13%	535	562	615	663	712	768	7%
- Education & Training	404	9%	442	474	511	544	578	615	7%
- Software Development	1437	13%	1629	1699	1864	2015	2180	2375	8%
Systems Integration	3641	-2%	3556	4143	4438	4704	4997	5335	8%
- Equipment	2022	-2%	1991	2413	2562	2695	2844	3020	9%
- Software Products	299	2%	305	378	401	422	447	476	9%
- Professional Services	1143	-6%	1070	1117	1226	1325	1429	1544	8%
- Other	177	7%	190	235	249	262	277	295	9%
Outsourcing	1515	8%	1635	1683	1813	1924	2038	2165	6%
- Platform Operations	415	7%	446	456	487	513	539	567	5%
- Applications Operations	619	8%	667	686	738	783	826	870	5%
- Desktop Services	138	8%	149	155	168	180	197	225	9%
- Network Management	207	8%	223	231	251	267	282	294	6%
- Application Management	77	14%	88	91	100	108	117	128	8%
- Business Operations	59	5%	62	64	69	73	77	81	5%
Processing Services	108	2%	110	107	105	101	104	108	0%
- Transaction Processing	108	2%	110	107	105	101	104	108	0%
Network Services	1124	5%	1178	1191	1273	1320	1391	1472	5%
- Electronic Information Svcs	292	4%	305	310	331	343	362	383	5%
- Network Applications	832	5%	873	881	942	977	1029	1089	5%
Applications Software	816	7%	876	999	1057	1117	1186	1264	8%
- Mainframe	122	7%	130	144	147	151	162	177	6%
- Minicomputer	188	6%	200	223	231	240	256	278	7%
- Workstation/PC	506	8%	546	632	679	726	768	809	8%
Turnkey Systems	1444	9%	1576	1819	1955	2077	2208	2359	8%
- Equipment	650	9%	707	807	861	914	971	1038	8%
- Software Products	549	9%	597	680	723	768	817	873	8%
- Professional Services	245	11%	272	332	371	395	420	448	10%

Source: INPUT



B

Forecast Reconciliation

Exhibit A-2 presents the 1995 database reconciliation for the federal government sector.

EXHIBIT A-2

Federal Government—1995 MAP Database Reconciliation

Product/Service Sector	1994 Market				1995 Market				94-99	94-99
	1994 Market (Fcst) (\$M)	1995 Report (Actual) (\$M)	Variance From 1994 Forecast		1994 Market (Fcst) (\$M)	1995 Report (Fcst) (\$M)	Variance From 1994 Forecast		CAGR per data '94 Rpt (%)	CAGR per data '95 Rpt (%)
			(\$M)	(%)			(\$M)	(%)		
Total	11459	10963	-496	-4%	16473	15394	-1079	-7%	8%	7%
Professional Services	2648	2315	-333	-13%	4032	3470	-562	-14%	9%	8%
Systems Integration	3729	3641	-88	-2%	5508	4997	-511	-9%	8%	7%
Outsourcing	1532	1515	-17	-1%	1831	2038	207	11%	4%	6%
Processing Services	137	108	-29	-21%	134	104	-30	-22%	0%	-1%
Network Services	1219	1124	-95	-8%	2054	1391	-663	-32%	11%	4%
Applications Software	713	816	106	14%	852	1186	334	39%	4%	8%
Turnkey Systems	1481	1444	-37	-2%	2062	2208	146	7%	7%	9%

Source: INPUT

Major changes occurred in the federal IT market during 1994 as a result of two major focuses. Reductions in budgets throughout the government are curtailing discretionary spending levels for programs, and procurement reform through the Federal Acquisition Streamlining Act of 1994 is forcing agencies to move more to custom off-the-shelf applications software products than to development. A noticeable impact is seen in the reconciliation table, Exhibit A-2. Professional services, under which new systems are developed, declined from levels anticipated in 1994. Processing services include those transaction processing tasks obtained through commercial services. This market had already shown decline in the early 1990s. Recent budget reductions are precipitating a more rapid decline in this segment than reported last year.

In the out-years, the decline in professional services and processing services continues beyond levels anticipated in 1994. Network services spending will decline further as more robust and functional commercial products are developed. The biggest gains in the out-year markets will be in outsourcing,



as federal agencies go through additional levels of downsizing, and in applications software products, as more standardized packages are incorporated into federal government activities.

