INPUT
IT Intelligence Services

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Payton Smith

Current

Service Mode Breakdown

	HW	SW	Serv
State	—	—	—
Com	—	—	—
Ener	15%	10%	75%
VA	30%	20%	50%
DoD	—	—	—
FEMA	25%	25%	50%
IRS	—	—	—
Averg	23%	18%	58%
Overall Trends	↑5%	↑14%	↓18%

Future

	HW	SW	Serv.
State	—	—	—
Com	—	—	—
Ener	40%	20%	40%
VA	30%	50%	20%
DoD	—	—	—
FEMA	15%	25%	60%
IRS	—	—	—
Averg.	28%	32%	40%

	HW	SW	Serv.
Ener.	↑	↑	↓
VA	↔	↑	↓
FEMA	↓	↔	↑

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Market Forecast

~~Market Report~~

- Market Forecast

1996		2001	CAGR
$1B	→	$2B	15%
($970M)		($1950M)	

- Market Distribution
  H/W S/W Services

- Drivers / Inhibitors

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% of Tot Pul. | Growth

State → 1.39% | 15%+

Commerce | 10%+ (7.5)

Energy → 0.35% | 5%+ (2.5)

VA → 4.94% | 15%+

DoD | 15%+

FEMA → 7.69% | 10%+ (7.5)

IRS

3.59% | 10.4%

Imaging Market ~ $1B (970M) -> 15%

FY96

FY94 700M
FY95 847M
FY96 1025M

17.7% CAGR 94-96

4.5% 118
0.8% 10.65

FY 1996 Forecast			FY 1994 Forecast	
			1994	$700
			1995	$847
1996	$970		1996	$1,025
1997	$1,116		1997	$1,240
1998	$1,283		1998	$1,501
1999	$1,475		1999	$1,816
2000	$1,697		2000	$2,197
2001	$1,951		2001	$2,658
CAGR 15%			CAGR 21%	

16a. What is your organization's current annual level of spending for imaging technology?

2 \$1-10 million
____ \$10-25 million
1 \$25-50 million
1d, More than \$50 million

3½% of IT Budgets
970M → 1.95B @ 15% CAGR

16b. Relative to your present and planned technology initiatives how will the expenditure for imaging technology change over the next five years?

1	0-5%	+	____ 0-5%	-
2	5-10%	+	____ 5-10%	-
____	10-15%	+	____ 10-15%	-
1d, 1	Over 15%	+	____ Over 15%	-

17. Of your organization's annual level of spending for imaging technology, what is the breakdown by percent of each market segment?

	Currently	In Five Years
Hardware	____%	____%
Software	____%	____%
Professional Services	____%	____%
Other _____	____%	____%

18. Over the next 5 years, what other considerations (problems, opportunities, trends, etc.) do you feel are relevant to the use of imaging technology in your agency? In the federal government?

(VA) 1. We are still having a hard time right-sizing core business applications to client/server, which to me is a major prerequisite for imaging success. In VA, our hospital network will take off with medical imaging applications that are a necessity for telemedicine, electronic medical record interchange with private health providers, etc.

(FEMA) 2. Use of synthetic aperture radar to predict earthquakes

(FEMA) 3. Use of hyper spectral imagery in rapid disaster damage assessment.

(Energy) 4. Cost

(Energy) 5. Politics of process engineering to optimize ROI

(Energy) 6. Records management issues.

7.

Thank you. Please make any additional comments below

	HW	SW	SV
'99	47	12	41
96 Forecast	37	20	43
C	23	18	58
F	28	32	40
P	54	16	30
	48	17	43

Tod Newcomb
Features Editor

IMAGING'S TOP VENDORS STRONGER

Today's imaging marketplace has fewer vendors. But those that remain are offering just what government needs: comprehensive imaging and document management solutions.

As state and local governments increase their demand for imaging products that capture, store and manage documents, they could face a quandary: how to achieve a uniform imaging environment when there are already a variety of operating systems and computing platforms in agencies and departments. Fortunately, the imaging industry is rising to meet this challenge.

In the past 12 months, a tremendous consolidation has taken place, reducing the number of quality imaging vendors to a handful of players. What has emerged is a small but formidable group of top-tier vendors that have significant geographic penetration as well as product depth and focus.

"Look to these vendors to offer comprehensive solutions," said David McCoy, a research director with GartnerGroup, an information technology advisory services firm. These solutions include imaging software that runs on a variety of operating systems and platforms as well as document management, workflow and output software that can create highly integrated imaging and document management systems.

According to McCoy, Gartner has grouped the imaging vendors into four specific categories. While vendors can occupy multiple tiers or categories, certain ones tend to dominate a particular tier.

First-tier or "sovereign" vendors include FileNet, IBM and Wang. The second tier, known as "semi-autonomous," includes a number of good companies, such as Computron and Optika, who have good products and services, but lack the size, breadth and depth of the FileNets & Wangs. The third tier — called "merger-acquisition" — is characterized by a number of formerly independent companies such as Watermark and Sigma, that have been acquired by top-tier vendors. The fourth and final tier, known as "niche failures," consists of companies who have a single-purpose product that never broke away to have a bona fide impact on the imaging market in general.

Having acquired other imaging companies to increase market share, the top-tier vendors are now in the second phase of a consolidation. "Gartner calls it the avalanche effect," said McCoy. "It's the acquisition of related technologies."

Top-tier firms are expanding their product lines beyond imaging to include document management and document output, such as COLD (computer output to laser disc), which is a method of transferring computer output to optical discs for online or offline storage. By offering a comprehensive suite of imaging and document management solutions across a variety of platforms, these vendors hope to be well positioned to dominate in one or more vertical markets.

Right now, the major markets are considered to be financial ser-

vices, healthcare and insurance. Another large market is government. "Today," said McCoy, "no single vendor dominates any vertical market, including government." Instead, what you have are vendors dominating in certain segments of the market, such as accounts payable or land records, for instance.

McCoy cautions government buyers to know who their vendors are, because it's likely they might be under different ownership in the months ahead.

Some vendors are avoiding this approach altogether. Instead of providing comprehensive solutions for a particular market, they are positioning themselves as technology providers. Firms such as Cornerstone and Kofax say they will provide a set of tools for users who want to build an imaging system out of separate components.

One component that soon will be on everyone's desktop — whether they need imaging or not — is the image viewer. With Microsoft offering Wang's viewer in every copy of Windows 95 and IBM offering a similar choice for anyone who buys a copy of Lotus Notes, imaging will be within everyone's reach.

But McCoy cautions that today's free viewers have limited use. "The free viewers are not suited for production imaging, which still dominates the industry," he said. Instead, these "soap sample" viewers are meant for ad hoc imaging, where documents are viewed a few at a time during the course of the day.

One of the more intriguing trends in imaging is the role of the Internet. "No one predicted just how fast the Internet was going to come on the scene," said McCoy. While talk and hype still dominate, some vendors are coming up with strategies on how they are going to use the Internet as a delivery system for images. These strategies will probably entail ways to distribute document images over the Net as well as ways to manage documents once they are placed on the World Wide Web. A key issue will be how to manage bandwidth for Web-enabled imaging solutions.

Despite the fact that imaging is finally taking on the appearance of a mature technology, the shakedown of the industry continues with more mergers and acquisitions likely to occur. McCoy cautions government buyers to know who their vendors are, because it's likely they might be under different ownership in the months ahead.

He suggests that agencies look for those vendors who can provide a more comprehensive solution, one that goes beyond imaging alone and offers document management, workflow and COLD, for example. Why? Because imaging is only one aspect of an online document trend. Tomorrow's solutions will require document management and workflow tools as well as the ability to scan, store, index and retrieve images.

Another requirement will be seamless interfaces between imaging systems and an agency's legacy system. With imaging vendors beginning to change their products' operating systems from the current favorite of UNIX to Windows NT, integration with mainframes could become a costly operation. "That's why it's so important to understand your imaging vendor," said McCoy, "and the direction in which they are headed." ■

GOVERNMENT TECHNOLOGY

January 1996
By Tod Newcombe, Features Editor

Imaging Fixes a Taxing Situation

Imaging technology — which can read, store and retrieve tax documents as electronic images — is increasing tax-processing efficiency and helping generate much-needed revenue.

Massachusetts taxpayers will discover some changes when they receive their tax forms this month. Instead of writing their figures on lines, they will have to put every numerical digit for income, deductions, credits and taxes into a box. While the boxes might be a pain for some, for the Department of Revenue (DOR), they add up to big benefits.

Completed tax forms — pouring into DOR's mailroom between now and April 15 — will bypass the army of keypunch operators and go straight to scanners for conversion into electronic images.

At the same time, intelligent character recognition (ICR) software will read all those handwritten numbers and convert them into data that the computers can use to verify the accuracy of the forms. "We're going to be able to capture twice as much data as before," remarked DOR Commissioner Mitchell Adams. "It was just too expensive doing it manually."

DOR is building a two-phase integrated imaging system with Unisys that can process all personal income tax forms

Make Documents, Not War

Government contractor needs to store millions of pages electronically

THE WESTINGHOUSE SAVannah River Co., which produces components for nuclear weapons, is beating its swords into plowshares. This month, the company begins to turn its paper into digital files.

Westinghouse Savannah, a contractor for the Department of Energy, wants control over millions of paper documents, database files, and images stored throughout a 300 square-mile facility along the Savannah River in South Carolina. The site was constructed in the 1950s, and was a player in the Cold War. But with shrinking defense budgets, the facility now focuses on nuclear waste management and environmental recovery.

As a result, Westinghouse Savannah needs to store millions of documents and images from different sources. It's building a highly customized, enterprisewide document management system based on the Enterprise Document Management System from Documentum, Adobe's Acrobat and Capture software, and encryption software from RSA Data Security. "We are trying to create a life-cycle document—from creation to storage—where everything is electronic," says Barry Hudson, information resource management analyst at Westinghouse Savannah.

Currently, information moves among 12,000 employees in a slow, cumbersome process. Fewer than 20% of the company policies and procedures documents, engineering drawings, and technical documents are managed electronically.

The company began building its document management system last July and will start the first full-scale pilot this month. Nearly 1,000 employees in its science and technical information group will test the system over the next 18 months. The initial pilot will convert 400,000 documents by year's end.

Unlike traditional document management implementations that are deployed on a departmental level, Westinghouse Savannah's system will be rolled out for the entire enterprise. "The company is looking at how workflow and document management can be applied to improve business procedures enterprisewide," says Michael Collett, project manager for CSC Consulting in Atlanta, the systems integrator on the project.

Westinghouse Savannah has multiple databases that it also wants to centralize, adds systems analyst Rocky Turner. "We'll have all our information combined into one sitewide system," he says.

Westinghouse Savannah will overlay the document management system on an infrastructure composed of a TCP/IP network, Microsoft Windows and Apple Macintosh workstations, Novell NetWare file servers, and a Sun SparcStation 1000 server. Files will move from NetWare file servers to the Sun document man-

agement server, where they will be automatically indexed.

With 100 million pages to convert and up to 20 million pages created annually, it will take years to roll out the system throughout the facility. Turner expects that as many as 750 documents will be converted daily. Westinghouse Savannah wants to reduce by one tenth the time spent by employees to produce, locate, and distribute documents; cut by one quarter the cost of equipment and floor space for filing systems; and slash the time to approve a document to two days from more than two weeks.

More Efficient, Less Costly

"We have a strong incentive to put things in electronic form," adds Jim Daniel, a systems analyst in Westinghouse Savannah's records management division. Daniel says this will make operations more efficient, require less storage space, and reduce costs. The project won't be cheap: about $1,500 per desktop, affecting a still-to-be-determined proportion of its employees.

Westinghouse Savannah chose Acrobat from Adobe Systems Inc. in Mountain View, Calif., as a universal front-end viewer. "With [Acrobat], users don't have to have the software that the document was originally created in to view it," says analyst Hudson. Digital signatures, based on encryption technology from RSA Data Security in Redwood City, Calif., will be used to authenticate the documents.

Also, the system will support two document versions: a permanent record and a revisable document. "For every document, we will have an editable form and an uneditable form," says Hudson.

Documents created in Microsoft Word, PowerPoint, Excel, and Corel WordPerfect, or other formats, will be supported. Westinghouse Savannah will use Word-for-Word from MasterSoft Inc., a company recently acquired by Adobe, to convert files as the company upgrades software to later versions.

The document management system will keep track of different versions to ensure that users have the most up-to-date information. It also will allow the company to decide who can access or edit documents to protect information from unauthorized use.

Analysts expect big growth in the document management market. International Data Corp. in Framingham, Mass., forecasts that the market is growing at an average compound annual rate of 21% and will reach $3.7 billion next year. Some of that growth may include document management links with the Internet.

Westinghouse Savannah stores some documents on an internal Web server. But Hudson says, "We're not sure what will be the business rules for deciding where things get stored."

The Westinghouse Savannah system reflects an emerging trend in which document management, imaging, and workflow converge. Several major workflow vendors are adding document management capabilities to their systems. FileNet Corp.'s recent purchase of Saros Corp. is one example. Likewise, many document management vendors incorporate workflow capabilities into their management systems.

"These systems are all coming together," says CSC Consulting's Collett. "We hope that what Savannah River is doing will serve as a model." —*Stephanie Stahl*

Technology Snapshot

WESTINGHOUSE SAVANNAH RIVER CO.

Headquarters: Aiken, S.C.

Budget: $1.5 billion

Mission: Establish an enterprisewide system for electronic document and records management

Key software: Documentum, Adobe Acrobat and Capture, RSA Data Security, MasterSoft's Word-for-Word

Servers: NetWare 4.X file servers, Sun Microsystems SparcStation 1000

Clients: Variety of Apple Macintosh and Microsoft Windows desktop systems

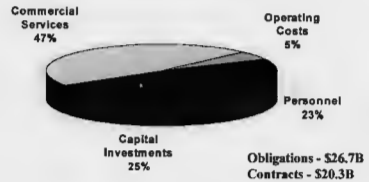
Network links: TCP/IP wide area network and NetWare IPX for LANs

Federal Market Overview

Don Dickson
CMA, Inc.
May 1996

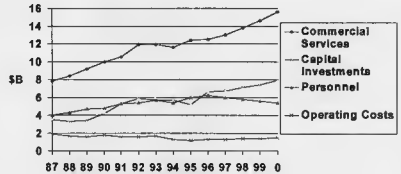
Source: INPUT

FY96 IT Budget



Source: INPUT

Federal IT Budget Trends



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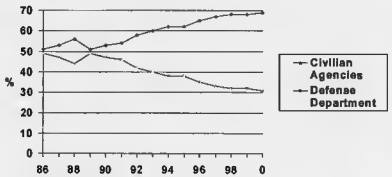
Defense vs. Civilian Budget Trends



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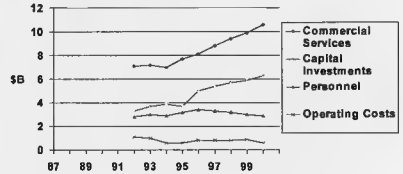
Civilian Budget Trends



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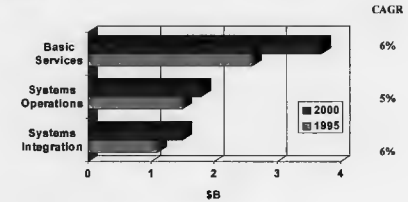
Professional Services Market



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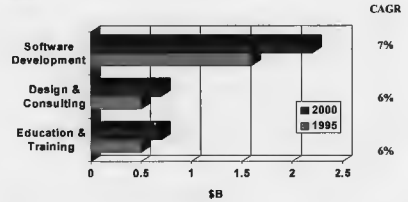
Professional Services Market



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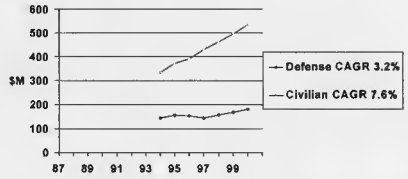
Consulting Services Budget Trends



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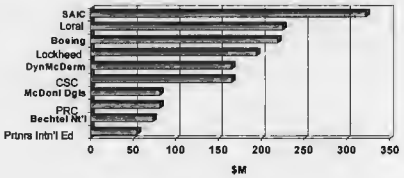
FY95
Vendor Ranking



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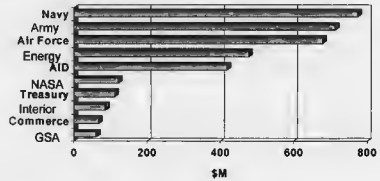
FY95
Agency Ranking



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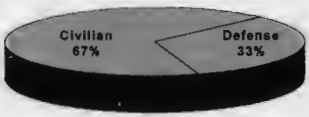
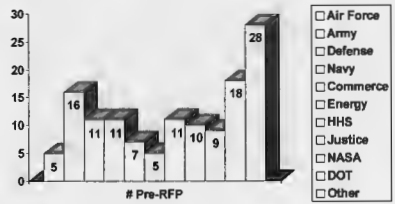
Emerging Opportunities



131 Opportunities

Source: INPUT

Emerging Opportunities



Source: INPUT

CMA, Inc.
1650 Tysons Boulevard, Suite 650
McLean, Virginia 22102

Federal Use Of Document Imaging Expected to Increase Sharply

Market research firm announces results of federal study.

For Immediate Release
Monday, September 05, 1994

Contact: ***Don W. Dickson, Senior Partner***
Computer Marketing Associates, Inc.
703-506-3932

[*McLean, Virginia*]— A market research firm specializing in emerging federal information technology programs has announced today the results of a three month study. The study examined over 200 federal pilots, computer labs, prototypes and agency initiatives. The results of this study strongly indicate that federal use of document imaging and document management systems will increase sharply over the next five years. Mr. Joe Corini, President of CMA, Incorporated stated, " We look to these small labs and tests set up by the agencies as an indicator of future trends. Most of these labs are small but are used by senior agency management to gain experience in the application of new technologies within the agency. Most of these projects will require two to four years before we see a major procurement."

The genesis for the study began several months ago when CMA clients requested information on future federal procurement trends. CMA embarked on this analysis collecting data on agency organization reengineering, management initiatives, pilots and test beds. The data was analyzed and broken into three segments for study. These included business process reengineering, management initiatives and information technology initiatives. " We entered this study expecting a cross section of information technology applications such as finance, accounting, simulation and training. We were surprised that

document imaging dominates these agency test beds. Clearly, we have a strong indicator of future trends", stated Joe Corini.

Agencies now experimenting with advanced document imaging applications include the Department of Transportation, Treasury, Veterans, Agriculture, Agency for International Development, Commerce, Defense, HUD, CIA, Interior, Justice, NASA, and Office of Personnel Management. "The challenge for industry is to find these small test beds and pilots and present their products and solutions for consideration. Those that get in early will have a leg up later on when the program goes to acquisition", explained Joe Corini. He added, "Legislation before Congress will grant increased local authority to the buyer. Now that the agency buyers will have greater latitude in their purchase decisions, it is important that industry pay attention to these test beds and pilots." Other strong trends noted in the study is increased use of workflow tools which assist a supervisor in balancing and assigning administrative work such as reviewing claims.

CMA, Inc is a market research firm specializing in assisting computer equipment and software manufacturers to sell their products to the federal government. CMA clients include AT&T, Andersen Consulting, Sybase, E-Systems, TeleSec, MapInfo, ComputerVision and others. The company was formed in 1989.

...end...

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Tel./Location: VIENNA, VA

Co.: INAT

Page: 1 of 2

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File: Chron
Contact
Other:

From: Name: JOHN McGILVRAY

Subject: IMAGING DEFINITION

- *Electronic form programs* allow users to create and print forms in-house. Some applications work with OCR scanners, allowing users to scan pictures and logos directly onto forms.

(6) *Document Imaging Software* - The software that allows users to manipulate (store, retrieve, print) images that have been scanned from paper documents. The applications that imaging software generates include: full text retrieval, document management, and database management. Document imaging software is a component of an imaging system. Hardware components of imaging systems include: scanners, image servers, workstations, optical drives, printers, and storage devices.

e. Engineering and Scientific -

Engineering and scientific activities encompass the following applications:

- Computer-aided design and engineering (CAD and CAE)
- Structural analysis
- Statistics/mathematics/operations research
- Mapping/GIS
- Computer-aided manufacturing (CAM) or CAD that is integrated with CAM is excluded from the cross-industry sector, as it is specific to the manufacturing industries. CAD or CAE that is dedicated to integrated circuit design is also excluded because it is specific to the semiconductor industry.

f. Planning and Analysis

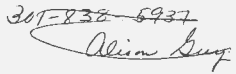
Planning and analysis consists of software products and information services in four application areas:

- Executive Information Systems (EIS)
- Financial modeling or planning systems
- Spreadsheets
- Project management

g. Sales and Marketing

Sales and marketing encompasses the following marketing/sales applications:

- Sales analysis
- Marketing management



MIDRANGE Systems

MIDRANGE Systems May 12, 1995 v8 n9 p19(2)

Two peas in a pod; optical storage and imaging are going hand and hand into market penetration.

Author
Dickey, Sam

Abstract
The expanded use of imaging applications has resulted in optical storage devices with higher capacities and lower prices. The declining prices and increased performance are encouraging more companies to employ imaging applications. The prices have declined from around $60,000 for a 17GB optical jukebox in 1989, to about $18,000 in 1995 for a 70GB jukebox. The greatest customers for optical storage are companies that are paper-intensive and archive lengthy documents. These include government agencies, insurance and financial companies as well as the medical and healthcare industries. Optical storage has an exceptionally long shelf life: WORM lasts 100 years and rewritable media will last 30 years. Archiving and scanning products that enable searchers to locate just a few documents out of tens of thousands of documents in a file are among the most popular applications of optical storage. Workflow applications help reduce the high costs of handling paper-based documents.

Full Text

Optical storage is a textbook example of market forces in action. As the use of imaging applications has expanded, more vendors have entered the market, pushing the price of optical storage down and its capacity up. Falling optical storage prices and improved performance have encouraged wider use of imaging applications.

To illustrate, Bob Greenbalm, executive VP of Metafile (Marlton, N.J.), notes that in 1989 a multiple optical disk jukebox offering a total storage capacity of 17GB would have cost about $60,000. Today the retail price of a 70GB jukebox may be less than $18,000.

The greatest use of optical storage is found in areas where imaging applications have a foothold, typically in the paper-intensive industries and those with a requirement for lengthy document archiving. Besides being removable, optical storage has a long shelf life: 100 years for WORM (write once read many) media and 30 years for rewritable media.

The federal government, insurance and financial organizations have led the way, often with remarkable success. Tom Balue, product marketing manager at Metrum (Denver), mentions a major national insurance company that installed a paperless imaging system based on optical storage. Initially, the plan was to run the new system in parallel with an existing paper-based system. "After three months they gave up on paper and went paperless," he says.

The medical and healthcare industries are other natural candidates for imaging optical storage solutions. This is due to the quantity of active patient records and the reporting that must be done between hospitals and insurers. Jordan Baine, president and CEO of Fathom Technologies (Longmont, Colo.), mentions an imaging-optical installation in beta test that ties a community hospital with doctors' offices. "Based on your social security number, they can pull up your records with your doctor's notes directly from the doctor's office." Although document imaging is the application most readily associated with optical storage, it is not the only one, nor is it necessarily the most successful, according to Roger Ericsson, VP at Myriad (Bend, Ore.). He explains that there are three basic scanning-imaging products on the market. Archiving-scanning products archive many documents with search routines. For example, they would let you find three documents out of 50,000 in a single file. Other image-enabling products allow you to add

images like photos or fingerprints to text. Workflow products allow users to scan a document and store it. Then people can view, change or approve it.

The workflow application is a good fit for imaging-optical systems. Bob Mann, industry marketing director at Edwards (Denver), points out that in a business environment, transactions are bound to paper documents and their flow through an organization. Mann says, "If you are able to image-enable paper-bound applications, you will reduce the filing requirement, the time spent filing and the other risks, like misfiles, associated with paper. Metrum's Balue adds that workflow-workgroup applications are an example of how imaging-optical systems can advance outside a mainstream MIS department. For example, Balue says that human resources departments of large companies will hire their own systems integrator or reseller to install workflow products independently of MIS. This is popular in workgroups with specific paper-intensive workflow functions like human resources or accounts receivable or payable.

Another optical storage-based application that is likely to see growth is Computer Output to Laser Disk. COLD technology allows anything on a hard, disk to be saved directly to optical storage rather than to microfilm or tape.

Deciding between scanning and storing documents and COLD technology depends on a company's needs. Customers who think they need imaging at first, often, realize what they really need is a microfilm replacement. "Imaging is for documents from outside the company," Baine says. "You don't have to image something that an AS/400 creates. The AS/400 takes this information to the spool writer and at that point you can put it on optical storage. Microfilm replacement is the number one install for optical that we see for the AS/400." According to Baine, an optical system replacement for microfilm can often be cost-justified within nine months.

The chief advantage of optical over film is the speed of retrieval. In applications where there is no premium on retrieval time, microfilm is adequate. But where retrieval requirements are high, optical is the choice with near on-line retrieval speeds in seconds rather than minutes or hours.

There will be circumstances in which high retrieval speed for archived information will not be required; there the older, more established media will fill the bill. "We find that data being archived doesn't necessarily need to be accessed quickly," says Dave DiMartinis, director of product management at EMC Corp. (Hopkinton, Mass.). "In the AS/400 market we have seen that, for the most part, tape is fine."

Nevertheless, some observers believe that the optical storage market is still in its infancy According to Metafile's Greenbalm, "If anything, optical is just revving up. It's like the PC market in about 1982 -- right at the crux before it really opens up. As the optical market gets more competitive, vendors will lose the margins they now have. Optical products will become like PCs; off-the-shelf products available from every computer dealer."

Topic

Technology Information
Technology Overview
Optical Disk Drive
Image Processor

Record #

17 017 251

CommunicationsWeek

CommunicationsWeek July 17, 1995 n566 pS12(2)

Document management surging ahead.

(network manager survey shows leap in use)(1995 Network Management Survey: Supplement to Communications Week)

Author

Semilof, Margie

Abstract

Document management is second only to E-mail as an important desktop application. Of 546 respondents to a survey of network managers, 44.7% state that document management will be a significant part of network planning in 1996. Imaging will also be addressed, approximately 38% say, and video will concern 29.1%. The software used to manage documents does not place demands on the network itself, but the document files, if loaded with images or video, can place heavy demands on bandwidth. Document management software operates by creating a file cabinet in electronic form. Document management is usually first implemented by companies that need to store large amounts of formal records. Government, manufacturing and the financial services industry are most likely to use document management software. Also growing is workflow software, which vendors are beginning to package with document management software.

Full Text

Document management software is a decade old, but network managers see it surging ahead in the next year, second only to electronic mail as the primary application on every user's desktop.

In the Communications Week managers survey, 44.7 percent of the 546 respondents say document management software will figure prominently in their networking plans over the next 12 months (see chart, page 13).

The survey also lists imaging and video as key applications, with about 38 percent of network managers saying imaging will drive their networks and about 29.1 percent saying video will be a factor.

Document management software does not by itself put special demands on the network. Rather, network demands depend on what types of files are stored in the document database.

Video clips or images used in documents, for example, would chew up bandwidth far greater than any text file. So if users are managing documents with a lot of color graphics or video clips, network bandwidth could easily be at a premium, says Carl Frappaolo, executive vice president at Delphi Consulting Group Inc., a Boston consultancy.

For many users, document management software is a welcome relief to the deluge of paperwork that is nearly impossible to keep current. At the Amtrak training facility in Wilmington, Del., engineers and maintenance workers keep tabs on locomotive parts using document management software from Interleaf Inc., Waltham, Mass.

Direct Connection

"I am not sure how I can quantify how much [document management software] helps us do our jobs, but we do realize that productivity is directly connected with people's ability to get to information," says Glenn Stickler, who is manager of human resource development at Amtrak.

Amtrak uses the Interleaf software to automate its federal regulation paperwork and its materials-acquisition system. In this case, document management and images are forcing Amtrak to bolster its network because of the size of individual technical papers.

Each locomotive manual, for example, may actually include several volumes and can be about 30 megabytes each including diagrams and photos.

Link to the Firm

Frank Gilman, director of information systems at Nossamen, Guthner and Knox, a Los Angeles law firm, says document management software helps keep off-site attorneys tied into the firm.

"There's no way we would have been able to take on some transportation cases, from a technological standpoint, without this software," Gilman says.

Document management software essentially creates an electronic filing cabinet. User features range from version control to built-in security and retrieval.

Most early document management customers tend to be companies with vast formal records of transactions, such as pharmaceutical companies and law firms.

In fact, the greatest number of responses in this category came from users in banking, finance and legal professions, manufacturing and non-specific government entities.

Of the 244 survey respondents who listed document management as a priority, 45 were from the government sector, 41 are from manufacturing and 40 indicated they represent banking, finance or legal entities.

Analysts agree the technology is on a fast track. From 1992 to 1993, market revenues grew 39 percent, and for the next two years it jumped 49 percent, according to a Delphi study.

Workflow software, which is transparent to most users and is often integrated with document management software, is also at least as or more popular than document management software in terms of growth.

Although workflow and document management are not viewed as a single technology by most users, the trend among vendors is to bundle these features together.

Topic

Text Processing Software
Network Management
MIS
Industry Trend Or Event
Management Issue

Record #

17 136 659

Federal Computer Week

Federal Computer Week August 14, 1995 v9 n23 p1(2)

Agencies go with work-flow technology.

(getting the most from IT investment)

Author

Monroe, John Stein
Varon, Elana

Abstract

Many federal agencies are attempting to get more out of their information systems investments by making greater use of work flow technology. Agencies are using scanned documents in digital form, and programs for handling electronic data have become common throughout the government. Work flow technology goes a step further by helping them to navigate and route those electronic documents. Vendors offer a wide variety of off-the-shelf products, many of them low-cost and simple to implement. Applications may include the routing of documents, to more complex programs where forms are scanned, put into a database, and dispersed throughout the agency. Agencies typically start with a smaller form routing project before deploying on a major scale. Once started, electronic storage and routing leads to greater efficiencies. Agencies are being pressured to seek out these efficiencies, due to cutbacks and pressure to deliver more efficient services.

Topic

Technology Information
Technology Overview
Imaging Technology
Workgroup Software

Record #

17 481 427

Government Computer News

Government Computer News Oct 2, 1995 v14 n21 pS17(1)

How document imaging enhances geographic data

(Federal Imaging Preview) (Technology Information)

Author

Silver, Judith

Abstract

Government agencies find a synergy between geographic information system (GIS) and document-management technologies, as is shown by example tools and applications. Specifically, there are growing demands for the geographic interpretation of spacial data for such uses as disease control, pollution management, disaster recovery, law enforcement and land management. The Coast Guard's National Response Center, for example, is working with Highland Technologies to integrate document management and a GIS so that document-based data related to chemical or oil spills can be analyzed geographically. A Highland GIS also enables employees of the Centers for Disease Control to immediately analyze disease trends in the field. All Points Software's FieldPack Mobile Professional notebook PC utilizes MapInfo Corp MapInfo 3.0 GIS, digital images, and a global positioner to provide field personnel with on-the-spot collection and analysis of data.

Full Text

Once it was enough for a GIS to be useful in weather prediction and cartography, for an electronic document management system to help in organizing archives. No longer.

As systems become more open, global positioning, digital imagery, mapping and mobile computing are *converging and the demand for integration of component products is growing.*

"The marriage of GIS and document management is similar to a larger trend where different technologies in the market are moving toward one another," said Scott E. Lewis, project manager for Higland Technologies Inc'.s Applications Division, Lanham, Md.

Increasingly, government is finding uses for geographic interpretation of spatial data-in land management, disaster recovery, pollution control, disease prevention and law enforcement, for example.

Lower prices-you can buy a decent digital camera now for less than $1,000-and improved quality are making it feasible to put high-end data-gathering equipment in the hands of large numbers of field personnel.

Field workers can take in documents from around the city or nation, scan them, index their values and make nearly instant correlations between data and location.

The Centers for Disease Control and Prevention in Atlanta use a system from Highland that lets field workers enter site data into a central GIS, where it is coded. Field workers then can see relationships among data from different geographic locations and quickly spot trends.

To do this, the CDC combines the High-VIEW document management and workflow development environment with MapInfo. The multi-user system requires only a 486PC running Windows with 8M RAM with a high-resolution monitor.

Don't Just Collect Data - Analyze

The Coast Guard's National Response Center responds to any chemical or oil spill in U.S. waters. Although the Coast Guard enters data using computers, the data is not analyzed.

Highland Technologies is working with the Coast Guard to integrate GIS and document management so electronic documents can be analyzed geographically. As reports are sent in electronically, the computer takes the location, looks it up in the geographical database and plots the information. Users can query the system to list or call up every document related to a geographic area.

Advanced users often employ statistical analysis packages to query data, Lewis explained. By storing data in an SQL database, such as Oracle, any number of other packages can get to the same data and do analysis and generate reports and trend analysis.

GIS Complements Document

Management

Another approach to merging GIS with document management systems has been taken by All Points Software Inc., Rochester, N.Y, and MapInfo Corp., Troy, N.Y. These companies are bringing together digital imagery, global positioning devices and penbased forms to combine them with visualization capability.

"GIS is a huge complimentary piece to the whole area of document management and imaging," said Randy Drawas, a MapInfo vice president.

"We're taking a process that is labor-intense and that requires a big investment in both personnel and equipment, and it's all being done automatically in the field."

The goal, Drawas explained, is to make data in computers available for use with a user's GIS, distributed database system or tracking system.

Workers would collect the data, return to the office and, rather than re-typing re-keying and scanning simply export the data from mobile computers for use with desktop systems.

The next logical step is to provide them with the ability to view it in the context of a map.

To this end, All Points Software developed FieldPack Mobile Professional. Based on MapInfo 3.0, it gives users control of data collection. FMP integrates maps, camera, pens, laptops and a global positioning system receiver in a single package. The software, which runs on both PCs and Macintoshes, collects, stores and retrieves data for immediate geographic analysis.

MapMaker Saves Steps

Before data enters the database, field workers use MapInfo's MapMarker to encode it with x and y coordinates based on address information. Without geo-coding, users can code up to 150,000 records an hour for use with any mapping system.

"We're taking a common government problem and reducing it from many steps, many people and disperate equipment and processes, down to doing it electronically, quickly, using standard equipment," said Bill Rigney, All Points vp of marketing.

MapInfo's Data Map feature is induced in Microsoft Windows '95, bringing desktop mapping to millions of Microsoft/Excel users. ""Its a major step towards introducing users who haven't had the benefits of mapping to understanding trends and patterns," said Drawas.

Topic

Geographic Information System
Text Processing Software
Image Processing Software
Technology Application

Record #

17 473 716

Requirements have advanced far since the early days of imaging systems, which were used for simple archiving. You could justify imaging for saving file space alone," said Alan S. Linden, corporate account manager for Wang Federal Inc., McLean, Va. "Once implemented, users saw what the system could really do. Slowly work flow and reengineering started to creep in. Today it becomes a process of constant improvement using additional tools."

Whereas early imaging and document management systems were stovepiped to particular functions, such as personnel or engineering the trend now is toward use of open systems adaptable to any application, or applications that run across functions a streamlined government. Thus Federal Imaging win also feature open, client-server document management systems.

"Agencies are saying get us good images and good data in a cost-effective and timely way so we can feed our applications automatically This increases our effectiveness because we have information quicker and can respond quickee." said Amit Goswamy, manager of Image Information Pro m for Eastman Kodak Co., Rochester, N.Y

Steps To Success

Hot applications, such as forms processing, correspondence control, or case management, will also be available for viewing and touching.

What else is driving the explosion in imaging coupled to document management? Falling costs. The good news is that agencies often can build imaging capability into existing networks, phasing in the technology as needs change and funds become available. And prices for imaging software and hardware are dropping. In storage, for example, the price per optical megabyte falls as more capacity is crammed into a given form factor

Increased desktop power is also making imaging a lot easier, since the average PC now has sufficient RAM, display resolution and processor horsepower to handle image files.

The experts have this advice for those thinking about imaging:

* Identify the application that will give you the biggest payoff, then spend the time upfront to analyze your requirements and workflow before installing the first scanner. * Learn the products, and stick with proven vendors. Conferences like Federal Imaging are good places to start. * Sell the idea to top management and to users. You'll need backing of both for success. Said Linden, "'I often warn people: Don't implement an imaging or work flow system because it's the in thing to do. If it isn't critical to the mission and doesn't have the support of upper menagement it is doomed to failure" * Budget for training. That's the best way to turn reluctant users into champions of the system. You can read about it here. Better still, make it d point to visit Federal Imaging.

Type

Cover Story

Topic

Image Processing Software
Market Trend/Market Analysis
Document Processing System
Text Processing Software

Record #

17 473 710

Government Computer News

Government Computer News Nov 13, 1995 v14 n24 p49(3)

Document management software

(includes directory and related article on document management procedures)

Author

Zurier, Steve

Abstract

Document management software is helping more government agencies control records and documents. Users usually start out with imaging, text retrieval and workflow software, and later add electronic document management. Sales of document management software has increased by 65 percent in 1995 alone. A document management system controls a document throughout its entire life cycle, starting at revision control during the creation process, management of document access, audit trails for tracking activity relative to the document, and security features to restrict access to the documents. Many also add annotation capabilities, and control over individual components of a compound document. Office-oriented document management products like Novell's SoftSolutions 4.1 emphasize flexibility in searching across an enterprise network. SoftSolutions is well integrated with Novell's NetWare and other Novell groupware products.

Full Text

Lost your way to the paperless office? Document management software might be the trailblazer you've been searching for.

"Users typically start off with a combination of imaging, text retrieval and workflow software. As they get into electronic document management, they realize they're storing a wealth of information, but the information is missing records management control," said Carl Frappaolo, an executive vice president at Delphi Consulting Group Inc. of Boston.

The need to control and manage documents will propel document management software sales by 65 percent this year, from $120 million to $198 million. Frappaolo has predicted. The government market accounted for about 15 percent of such sales in 1994, a figure that should remain constant in 1995, he said.

The Delphi group defines document management as a way to store, locate, retrieve and exercise some control over document-based information throughout a document's life cycle. Document management software generally has these features:

* Revision control over the creation and number of revisions.

* A library management facility to monitor document access, including check-in and checkout across multiple data repositories.

* Audit trails to track activity specific to a document, showing who performed what actions and recording networkwide document transactions.

* Security restrictions on access to documents and document-related databases.

* Virtual document management control over individual components, or objects, within a compound architecture.

* Annotation by users without alteration of an original. Industry experts recognize two types of document management software. Office-oriented products come from companies like Novell Inc., PC Docs Inc. and Saros Corp. Higher-end software emphasizes publishing features in products from companies like Interleaf Inc. and Xyvision Inc.

This Buyers Guide table includes products across the spectrum. It also lists Keyfile Corp., whose product integrates imaging and workflow with document management.

On the office document management front, Novell's SoftSolutions 4.1 SpeedSearch has flexibility for searching across an enterprise network. Integrated with NetWare, it provides basic and extended security. It is integrated with Novell groupware products, including Groupwise e-mail and Informs electronic forms software.

Another important office player is PC Docs Open 2.5, an open, client-server product that works with Microsoft Windows NT and numerous Unix versions including AIX, Digital Unix, HP-UX and SunSoft Solaris.

PC Docs Open has a graphical interface, a pop-up profile card listing document attributes, customized profile forms and a QuickSearch feature for frequently used documents. PC Docs Open 2.5 is scalable from the workgroup level to multiple nodes across an enterprise.

Scalability is an important feature of Saros' Document Manager 1.6 and Mezzanine. "Our products were designed for the enterprise," said Dave Badley, desktop product manager.

Document Manager lets users carry out basic document management features. The Mezzanine software engine residing on a server provides the core functionality. Mezzanine acts as a firewall for the database, the network and the documents.

"Hackers would first have to get past Mezzanine to reach the Structured Query Language database," Badley said. "Mezzanine also prevents users from inadvertently making unauthorized changes."

At the higher end, Interleaf's Intellecte 1.2 lets users view, browse and seek documents across a network. Pat Byrne, Interleaf's director of product marketing, said Intellecte supports text, graphics, video, vector graphics, desktop publishing and audio file formats.

Standard and ad hoc

An auditing function tracks document use. Intellecte has SQL integration with Oracle Corp.'s relational DBMS. Automated workflow control allows standard and ad hoc work processes, and configuration management provides for reuse of components from compound documents.

Intellecte can help assemble, format, hyperlink and deliver electronic documents for CD-ROM publication. Applications can be written for Intellecte in Visual Basic, C and C++.

Another product designed for high-end publishing is Xyvision's Partance Document Manager 2.3. Besides version control and full-text searching, it has built-in workflow that can separate ongoing work from approved work.

Partance stores document components as objects in a relational database for reuse in multiple media formats. Third-party applications like Adobe Systems' Illustrator and Acrobat work with Partance.

One reason document management software is such a difficult category to pin down is that the lines are blurring between imaging, workflow and document management products. Many of the document management packages listed in this Buyers Guide have workflow aspects. Keyfile's Keyfile 3.0 does all three jobs.

"We consider ourselves unique in the market," said Steve Marchesano, a Keyfile senior product manager.

"We believe automating business processes requires all three capabilities."

Client-server Keyfile supports multiple file formats, including text, data, voice, graphics and images. Its Object Reference Madel can store one copy of an object in an object-oriented database but have it referenced and opened by multiple users in real time. In compound documents, users can make voice, handwritten or typed annotations.

Type
Buyers Guide

Topic
Software Buyers' Guide
Text Processing Software

Record #
17 800 700

Government Computer News

Government Computer News Nov 27, 1995 v14 n25 p38(1)

Hard copy: will DITCO digitize?

(Defense Information Technology Contracting Office)(Briefing Book) (Government Activity)(Brief Article)

Author

Constance, Paul

Full Text

The Defense Information Technology Contracting Office has released a request for information on imaging systems capable of performing hard copy-to-digital, analog-to-digital and digital-to-digital conversions of contracting documents. The systems would be used by approximately 400 DITCO employees to scan, convert, store and retrieve documents for some 90,000 contracts per year.

Topic

Government Contract Specifications/RFP
United States. Department of Defense

Record #

17 900 056

Federal Computer Week

Federal Computer Week March 4, 1996 v10 n5 p6(1)

IT component expected to reach $300M to $400M.

(cost of the technology for the Census Bureau's year 2000 census) (Government Activity)

Author

O'Hara, Colleen

Abstract

The Census Bureau expects to spend between $300 million and $400 million for technology to implement the year 2000 census. The agency will need to convert one billion pages of forms into computer-readable files in 100 days. It hopes to do so for less than the $2.5 billion cost of the 1990 census while achieving greater accuracy. To do so will require tools ranging from laptop computers to a large data capture and imaging system. Census associate Dir Robert Marx says the Census Bureau is committed to relying on contractors to provide technology as well as facilities management services. The bureau has not yet, though, decided on whether to award a single- or multiple-vendor contract. The Census Bureau intends to release a solicitation in Jun 1996, make the selection in 1997, and conduct rehearsals in 1998.

Topic

United States. Bureau of the Census
Government Contract Specifications/RFP
Year 2000 Transition

Record #

18 075 071

Government Computer News

Government Computer News Oct 2, 1995 v14 n21 pS4(2)

How document management, imaging aid in re-engineering

(Federal Imaging Preview) (Industry Trend or Event)

Author

Silver, Judith

Abstract

Federal agencies are implementing a variety of document-management and imaging technologies to streamline image- and document-handling operations. Many of these technologies will be showcased at the Oct 31-Nov 2, 1995, Federal Imaging Show and Conference in Washington, DC. The interest in implementing new imaging and document management tools is being driven by several factors. These include the organizational reengineering mandates of the 1994 Federal Workforce Restructuring Act, ongoing attempts by federal agencies to improve their services to both other agencies and citizens, and the consequent need to achieve new efficiencies in the storage and retrieval of information. A decrease in the cost of the image and document technologies and increasing desktop processing power are also factors. Image- and document-handling products, methodologies and case histories will be featured at the conference.

Full Text

With the 1994 Federal Workforce Restructuring Act the federal government began its feverish task of rightsizing. The act came while agencies were already enmeshed in finding ways to improve their service, both to citizens and to internal government customers.

What choice did all this leave federal agencies but to consider a variety of technologies to bring about greater efficiency?

Key to better efficiency is streamlining the storage and eventual retrieval or dissemination of information. One piece of evidence comes from a study by Wang Federal Inc. that revealed government office workers spend more than 40 percent of their time managing and accessing documents.

This year's Federal Imaging Show and Conference, October 31-November 2 at the Washington Convention Center, will focus on the tools and technologies government agencies require to gain control of their documents. Show attendees will see the products and conference attendees the case histories and methodologies for:

* Business process re-engineering, a system for improving the way work is done. Both can reveal best how to use fresh technology. * Redesigning workflow, or the way work moves through an organization. Defining workflow for a document management system has become a task of automating procedures and establishing rules for the way tasks are completed. Managers need tools to help them identify tasks, procedure sequences and user roles for electronic documents, and Federal Imaging will feature leading vendors of these tools. * Implementing imaging, or the conversion of paper documents into digital ones so that they can be stored, categorized, moved and viewed on line merged with other electronic documents. You'll see of required products from scanners to optical storage. * Using electronic document management software that provides users with logical access to electronic documents. It provides the indexing required for retrieval plus links to and underlying document database. These systems, as well as the underlying database products, will be on display, too.

New Improved Document Management

Requirements have advanced far since the early days of imaging systems, which were used for simple archiving. You could justify imaging for saving file space alone," said Alan S. Linden, corporate account manager for Wang Federal Inc., McLean, Va. "Once implemented, users saw what the system could really do. Slowly work flow and reengineering started to creep in. Today it becomes a process of constant improvement using additional tools."

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The experts have this advice for those thinking about imaging:

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Type

Cover Story

Topic

Image Processing Software
Market Trend/Market Analysis
Document Processing System
Text Processing Software

Record #

17 473 710

Federal Imaging Market - 1996

Imaging => the capture, storage, retrieval and display of graphical representations of information

Imaging Investments → productivity benefits and improved operational economies → labor cost reductions and storage cost reductions

1994 Forecast FY1994 $100M → FY1999 $2,000M
CAGR 21%

Federal Spending Civ. 70% Def. 30%

Imaging used to support expanded information sharing

Profiled Energy → Focus on Doc. Mgt.
U.S. Forest Service → Focus on GIS

Findings/Recommendations => Funding Trends, Cost/Benefit Focus, Platform Requirements, Software Requirements, Need for Mgt. Education and Support, Other External Support Needs

Market Forecast

1994 Imaging 3% of total Federal IT budget
1999 " 7% " " " " "

Imaging Submodes → Hardware, Software, Professional Services

Drivers: Improvements in Imaging HW
Improvements in Image interpretation SW
Emerging role of Imaging in BPR
Increasing understanding of role of imaging in applications
Successful imaging projects

Vendors → mostly Systems Integrators
⇒ primary delivery mode for Imaging technology

* Is this still true →

* How does "Imaging" differ from "Document Management"

→ Document Management is a segment of the Imaging market.

CMA Briefing to Kodak 10/95

Federal Document Imaging Market Today

- Revenue: ~ $700 m today with 15% + growth rate
- Three acquisition strategies
  - Best value for solutions - fully supported
  - IDIQ for building block products - Major changes to GSA Schedules
  - Multiple awards
- Natural by-product from government re-invention
- Agencies are aggressively implementing pilots and prototypes
- Increasing links to states and regions
  - Block grants focus on crime, welfare, Medicaid
- Agencies are securing professional services to aid in planning
  - 8(a)s
  - Consulting services
- Move to commercial practice

Federal Document Imaging Market: Technology

- Commercial Off the Shelf (COTS)
  - More powerful
  - Less expensive
  - Low risk
- Role of the Systems Integrator/ "Installator"
  - Business process re-engineering
  - Install/integrate COTS HW and SW
  - Applications development and/or implementation
  - Training
  - Support services

Drivers

- Confidence in IT investment
- Emphasis on performance metrics
- Outsourcing pressures (Current 5%)
- Program integration (inter-agency)
- BPR and ROI
- Continued IDIQ
- Document management

Issues

- Decline in federal workforce (brain drain)
- Interagency utilities continue
- Major restructuring of programs (energy, environment)
- COTS
- Uncertain future
- Multiple awards
- Fast prototyping

Summary

- Mission streamlining
- Government organizations are being modified
- Increased competition
- Budget/spending pressures
- Uncertainty

Presidential Initiatives

Presidential Initiatives

- Procurement reform
- Re-invention
- Downsizing
- Law enforcement
- Environment
- R&D
- National defense
- Partnerships
- Federal grants to states

Presidential Initiatives
NPR and Downsizing

- Procurement reform
- Reinvention
  - BPR
  - Client server
  - COTS
- Downsizing
  - Budget vs economy

Presidential Initiatives
Law Enforcement

Justice Programs	91%
INS	29%
DEA	13%
BOP	12%
FBI	9%

CMA Government Marketing Services 703-385-0729

Presidential Initiatives
Environment

- Intergovernmental coordination
  - $600 m to the states
- Fundamental changes to current programs
- Increase of 10%
- Major programs:
  - Facilities clean-up 6.6 b
  - EPA Operations 3.4 b
  - Superfund 1.8 b
  - Water quality 1.6 b

CMA Government Marketing Services 703-385-0729

Oversight and Policies

- Procurement Reform
- Performance requirements (GPRA)
- Lobbying reform (more controls)
- GSA downsizing (GSA schedules opening)
- National CIO (?)
- Benchmarks and standards
- ROI and discretionary spending
- Reinvention requirements and exceptions

Links to State and Local

Kodak

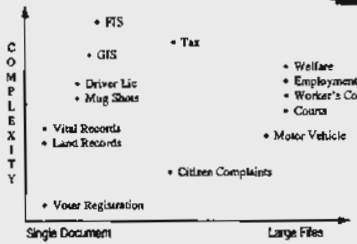
Percent of State Budget From Federal Funds

• California	34%
• New York	28
• Texas	27
• Florida	21
• Pennsylvania	27
• Illinois	21
• Ohio	24
• Michigan	30
• New Jersey	20
• North Carolina	25

CMA Government Marketing Services 703-845-0722

State and Local Image Application Opportunities

Imaging Market: 1993: $205 m 1998: $596 m



Leading State and Local Integrators

Leading Systems Integrators

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- EDS
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- HP
- IBM GSC
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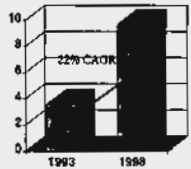

State and Local
Systems Integration Market

Source: Gov't Technology IQ2

Opportunity Pipeline

1996

Federal Imaging Market

1996–2001

INPUT®

Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington D.C.

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INPUT
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United States of America

Federal IT Market Analysis Program

Federal Imaging Market, 1996–2001

MM14 • 720 • 1996

Table of Contents

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Exhibits

I

Introduction

This report and the related research has been developed as a part of INPUT's Federal Information Technology Market Analysis (MAR) Program. This program supports leading vendors in the information technology industry in developing and executing their strategies for pursuing business with the federal government.

This report will provide vendors with insight into the trends, perceptions and market forces affecting the federal imaging market. This study is based primarily on surveys of imaging technology experts in the federal government. Contributing to the assessment of the overall imaging market is data obtained from surveys of federal imaging vendors.

Based on the information compiled from the agency and vendor surveys, as well as from other sources, this report presents INPUT's five year forecast of the federal imaging market. INPUT also offers specific recommendations to federal imaging vendors intended to aid in the development of their strategic business plans.

The executive overview of this report has been provided to agency and vendor survey participants in order to acquaint them with the activities and perceptions of their counterparts in the federal imaging market.

A
Scope

This report examines the use of imaging technology in the federal government over a five-year forecast period from fiscal year 1996 through fiscal year 2001. The scope of this report includes:

- Present and planned use of imaging technology in support of federal operations
- Perceived advantages and disadvantages of the use of imaging technology
- Critical success factors and obstacles to the implementation of imaging technology in federal operations
- Factors driving and inhibiting federal imaging market growth
- Recommendations to federal imaging vendors

B
Objectives

The objectives of this report are to describe the federal imaging market, identify the concerns of federal imaging technology implementors, determine the federal imaging market's size and growth rate, and to provide strategic recommendations to federal imaging vendors. The issues addressed by this report include:

TAG as in Section A above.

- To what extent is imaging technology being implemented into federal government operations?
- What changes have occurred in the way the federal government plans to use imaging technology?
- What benefits does the federal government expect from the use of imaging technology?
- What barriers exist to the implementation of imaging technology?
- How big is the federal imaging market, and how will it grow over the next five years?
- What factors are affecting the growth of the federal imaging market?

C
Definitions

In its purest form, imaging is defined as the capture, storage, retrieval, and display of visual information.

Historically, imaging technology has been viewed merely as a means of converting data from one medium to another. However, advances in graphical capabilities are providing a new context for the presentation and processing of information. Some of the applications of imaging technology discussed in this report are defined in the table below.

Exhibit I-1

Imaging Application Definitions

Application	Definition
Document Storage/ Retrieval	The conversion of documents into a electronic format capable of being stored, indexed, retrieved, and displayed on demand
Workflow Management	The analysis, compression, and automation of document based activities
Geographic Information Systems (GIS)	The capture, storage, retrieval and display of information in a geographic context
Spatial	Closely related to GIS, spatial imaging refers to the capture, storage, retrieval and display of any set of spatially related data, not necessarily presented in a geographic context.
Medical	The capture, storage, retrieval, and display of medical diagnostic images such as x-rays and magnetic resonance images (MRIs)

D
Methodology

This report was developed based on survey data collected from imaging technology experts in the federal government. The surveys contained a mix of closed-and open-ended questions designed to facilitate analysis, while at the same time allowing the flexibility necessary for unanticipated responses. Survey responses were compared with INPUT's 1994 imaging study to generate a change-over-time analysis.

Federal imaging vendors were surveyed on some of the same questions posed to agency representatives. The vendor surveys were used to measure vendor perceptions of federal imaging market issues and determine areas of vendor misconception.

INPUT's five-year forecast of the federal imaging market was developed based on the analysis of the fiscal year 1997 A-11 information technology budget reports submitted to the Office of Management and Budget (OMB) by federal agencies. Additionally, INPUT analyzed federal information resources management (IRM) strategic plans, identified imaging market forces and their level of influence, compared apparent market trends to those reported in INPUT's 1994 imaging study, and solicited assessments from federal agency representatives. All of these factors were considered both for the forecast of the overall imaging market, and for the forecast of the imaging market submodes.

Lastly, all of the survey results and the results of the imaging market forecast were examined to define general observations which would identify the central issues in the federal imaging market. The general observations were, in turn, used as a basis for developing strategic recommendation for vendors in the federal imaging market.

E
Report Structure

This report contains six chapters and five appendixes. The contents of the chapters following this introduction include:

Chapter II - Executive Overview - offers an overview of the analysis conducted as a part of this study and summarizes the major findings of the report. It is a brief synopsis of the important issues, conclusions, and recommendations.

Chapter III - Agency Findings - presents the results of surveys conducted with federal imaging technology experts and describes the trends identified through analysis of those results.

Chapter IV - Vendor Perspectives - presents the results of surveys conducted with federal imaging technology vendors and compares vendor and agency perceptions of federal imaging market issues.

Chapter V - Market Forecast - details INPUT's five-year forecast of the federal imaging market, identifies market drivers and inhibitors, and lists major federal imaging procurements.

Chapter VI - Conclusions and Recommendations - provides general observations of the federal imaging market, and, based on those observations, offers strategic recommendations to federal imaging vendors.

Appendixes A through E provide a list of agency and vendor survey respondents, the letter sent with the agency surveys, the agency and vendor questionnaires, and a glossary of federal acronyms.

F
Related INPUT Reports

INPUT publishes several related reports as part of its MAR program. Each report analyzes a unique segment of the federal information technology market. Recent reports of interest to the reader include:

Federal Imaging Market, 1994

Federal Document Management Systems, FY1995–FY2000

Federal Information Systems and Services Market, FY1995–FY2000

Other recent INPUT reports include:

Federal Financial Management Systems, 1996

Federal Wireless Technology Market, FY1995–2000

Federal Computer Security Market, FY1995

Federal E-mail Systems Market, FY1995

Federal Telecommunications Market, FY1994–FY1999

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II

Executive Overview

This executive overview synopsizes the four major sections of this report, providing summaries of agency findings, vendor perspectives, the market forecast, and INPUT's conclusions and recommendations.

A
Agency Findings

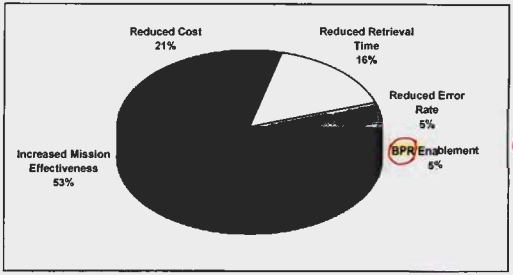
INPUT conducted primary research through surveys of federal imaging technology experts at seven federal agencies. The surveys covered a broad spectrum of imaging market issues ranging from the level of systems integration anticipated to more specific concerns such as agencies' preferred method of acquisition.

Although the pool of agency survey respondents is relatively small, the results they provided should offer reasonable insight into the trends affecting the federal imaging market. The respondents represent a variety of viewpoints extending from department level to program level, both military and civilian. The diversity of viewpoints adds weight to the identifiable trends arising from the survey results.

Federal agencies have, for the past several years, looked to imaging technology as a way to increase their mission effectiveness, while at the same time dealing with a declining workforce and operating budget. The implementation of imaging technology, when applied to business processes in a manner consistent with agency reengineering goals, can provide agencies with benefits including increased productivity and operational economies in the form of labor and storage cost reductions. Exhibit II-1 shows the advantages federal agencies expect as a result of imaging technology implementation.

Exhibit II-1

Advantages Expected



The chart clearly shows the majority of agency expectations in the area of increased mission effectiveness and secondarily in the area of reduced cost. However, when asked to list what they had actually experienced, agencies did not identify cost as an advantage. The absence of the cost benefit is likely due to the costs of imaging implementation, a factor which agencies cited as the primary disadvantage of imaging technology.

When asked about the current landscape of the imaging market, agency representatives suggested a movement of the federal government away from narrow, specialized applications toward agency-wide and inter-agency applications. This can be attributed to the advantages of data sharing in allowing for the elimination of redundant activities. Agency responses also indicated an increasing presence of imaging technology in federal operations, a trend which supports the high growth rate forecasted for the federal imaging market.

Other trends identified by agency responses include an emphasis on the requirement for imaging integration services, and a preference for commercial off-the-shelf solutions, document storage and retrieval applications, and full and open competitive procurements. However, GSA schedules also ranked highly for hardware and software acquisitions, and small business and 8(a) set-asides ranked highly for the acquisition of professional services.

B
Vendor Perspectives

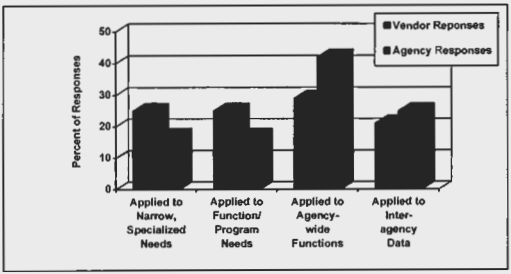
In order to compare vendor perceptions of the federal imaging market with agency perceptions, INPUT surveyed eight federal imaging technology vendors on some of the same issues presented to agency participants. The comparison produced some interesting results.

The correlation between vendor perceptions and agency perception were very close in many cases, including preferred imaging applications and expected advantages. However, on a couple of issues, a notable discrepancy was evident.

Both agencies and vendors were asked about the scope of federal imaging technology implementation. Agencies, as mentioned in the previous section, indicated a trend in the direction of agency-wide and inter-agency applications. As Exhibit II-2 shows, vendors perceive 50% of the scope of imaging technology implementation in the areas of specialized and program level applications. Conversely, agencies report those areas as only 34% of the scope of imaging technology implementation. This suggests that vendors have not yet identified the federal trend towards large-scale applications.

Exhibit II-2

Scope of Federal Imaging Technology Usage
Vendor vs. Agency Perspective

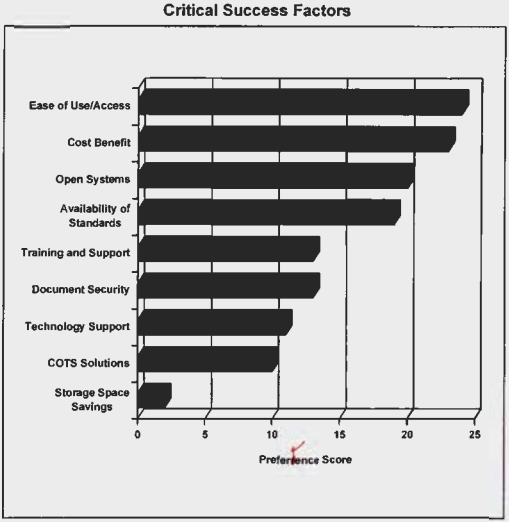


Another discrepancy between vendor and agency perceptions appeared in the area of realized advantages. Agencies cited primarily increased mission effectiveness, and secondarily reduced retrieval time and reduced error rate as advantages they had experienced as a result of the implementation of imaging technology. Vendors were also asked what advantages the federal government had experienced as a result of imaging technology. Vendor results showed reduced retrieval time as the primary advantage experienced and reduced cost as the secondary advantage experienced.

While agency and vendor opinions differ on the importance of reduced retrieval time, reduced cost is the real discrepancy in this area. While vendors view reduced cost as the number two realized advantage for federal imaging technology implementation, agencies did not report cost as a realized advantage at all. This presents a serious problem for vendors because of the emphasis the federal government places on reducing costs as reason to implement imaging technology in the first place.

Vendors were also asked to identify the critical success factors for the federal imaging market. The results of this question are presented in Exhibit II-3. The primary factors identified by vendors are ease of use, cost benefit, open systems, and the availability of standards. These critical success factors are in general agreement with the obstacles to imaging technology implementation reported by agencies. The obstacles identified by agencies include cost, personnel issues, and standards and interoperability. The correlation of opinion in this case speaks well of the imaging industry's overall understanding of the needs of the federal government.

Exhibit II-3



C
Market Forecast

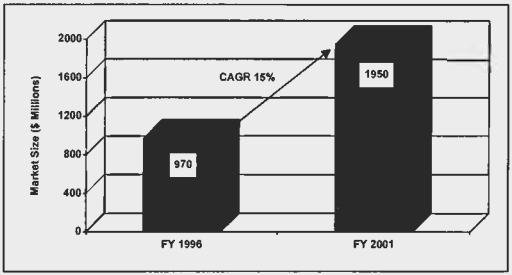
INPUT's forecast of the federal imaging market for fiscal years 1996–2001 draws on INPUT's experience as a federal IT market observer, review of federal agency information resources management (IRM) strategic plans, and agencies' annual IT budget reports to the Office of Management and Budget (OMB). INPUT also considered the views of agency representatives, and the results of INPUT's 1994 imaging study when formulating the 1996–2001 federal imaging market forecast.

INPUT estimates the fiscal year 1996 federal imaging market to be $970 million, accounting for more than 3% of the total federal information technology budget. In addition, INPUT projects a very healthy 15%

compound annual growth rate (CAGR) for the federal imaging market over the next five years. This is compared to an expected CAGR of slightly more than 4% for the total federal information technology budget. At 15% CAGR, the federal imaging market will reach almost $2 billion, or 6% of the total federal information technology budget, by fiscal year 2001. Exhibit II-4 shows INPUT's forecast of the federal imaging market.

Exhibit II-4

Federal Imaging Market



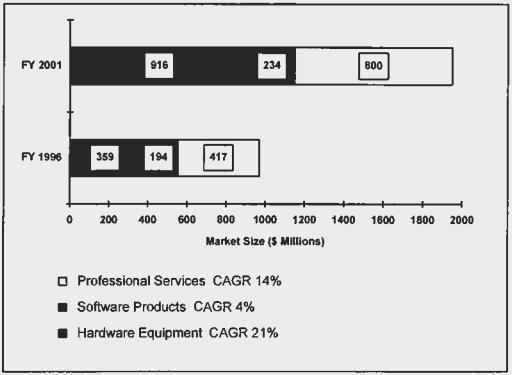
The submodes of the federal imaging market are hardware equipment, software products, and professional services. Exhibit II-5 shows the breakout of these submodes respective to the total federal imaging market.

^in respect of

All three federal imaging market submodes are expected to experience positive growth during the forecasted period. Software products will grow at about the same rate as the total federal information technology budget, and imaging professional services will grow at about the rate of the total federal imaging market. However, hardware equipment is expected to be growing at a much more rapid rate.

Exhibit II-5

Imaging Market Submodes



In the course of preparing this forecast, INPUT identified a number of factors driving the federal market. The most significant of those factors include the requirement for increased mission effectiveness, business process reengineering, and inter-agency data sharing. Cost benefit was also identified as a primary imaging market driver, but uncertainty exists as to whether this factor will materialize for the advantages expected of it. INPUT also identified several market inhibitors including the cost of imaging implementation, lack of standards, and personnel issues.

D
Conclusions and Recommendations

Overall, the findings of this report indicate a strong federal market for imaging technology. The results of the agency survey were primarily positive, but they did identify areas requiring more attention from vendors. The results of the vendor survey demonstrated a high level of correlation between obstacles identified by agencies and critical success factors identified by vendors.

General observations concerning the federal imaging market include:

- Imaging technology has an increasing presence in federal operations.
- The federal government is moving towards agency-wide and inter-agency imaging operations.
- Document storage/retrieval is the most required imaging application.
- Integration is the most required area of vendor support.
- Commercial off-the-shelf imaging solutions are favored.
- Full and Open Competition is the preferred method of acquisition.
- Agencies are not yet realizing the cost benefit of imaging technology implementation.
- Trained users and imaging technology acceptance ~~are still~~ continue to be problems.
- Imaging standards remain unresolved.
- Increased mission effectiveness is the primary imaging market driver.

Based on the above general observations, INPUT developed the following list of recommendations for vendors in the federal imaging market.

- Prepare for more competition
- Emphasize data-sharing capabilities
- Emphasize data storage and retrieval capabilities
- Examine professional services offering
- Provide adaptive COTS products
- Push for industry standardization
- Emphasize Cost Benefit Analysis
- Get on a GSA Schedule

Agency Findings

This section presents the results and analysis of primary research surveys conducted with imaging technology experts in seven federal agencies. Survey questions ranged from general topics such as the level of integration planned for new imaging projects to more specific questions such as agencies' preferred method of imaging technology acquisition.

While overall agency responsiveness to INPUT's survey was less than expected, the results provided by the seven participating agencies should offer reasonable insight into the trends of the federal imaging market. The responding agency representatives include a spectrum of viewpoints ranging from department level to program level, military and civilian. This variety of viewpoints adds weight to the identifiable trends arising from the survey results.

Survey participants were, in most cases, allowed multiple responses in order to enhance the comprehensiveness of the results within the framework of the questions. In several questions, survey participants were allowed open-ended responses to avoid steering the results in any specific direction. Upon completion of the research phase of this report, the open-ended responses were analyzed and grouped into appropriate categories for a graphical presentation of the results.

This section of the report will also make use of the results from INPUT's report, *Federal Imaging Market, 1994*, by supplementing the current results with a change-over-time analysis.

A list of the participating agencies may be found in Appendix A. The agency questionnaire and accompanying letter may be found in Appendix B.

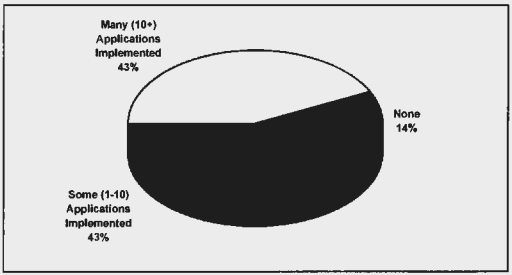
A

Federal Implementation of Imaging Technology

Agency representatives were first asked about the current implementation level of imaging technology within their areas of responsibility. Exhibit III-1 shows that 86% of survey respondents report some level of implementation, with only one respondent reporting no implementation to date. This one respondent did indicate that the implementation of imaging technology was planned for the future. INPUT's 1994 study of the imaging market found that only 60% of the survey respondents reported some level of imaging technology implementation. This is a clear indicator of the **increasing presence of imaging technology in federal government operations.**

Exhibit III-1

Level of Federal Imaging Technology Implementation



B

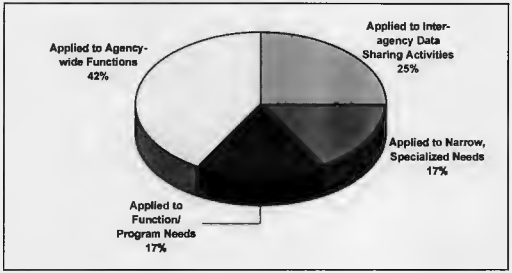
Scope of Federal Imaging Technology Implementation

To determine the scope of federal imaging technology implementation, agency representatives were asked in what areas of operation they felt imaging technology would be used. As shown in Exhibit III-2, respondents indicated that agency-wide functions are the primary area of imaging technology implementation. Inter-agency data sharing activities also occupy a significant percentage of the scope of implementation. Respondents reported specialized and program needs as secondary, but still significant, concerns.

This is contrary to the results of the 1994 imaging study which found narrow, specialized needs to be the primary scope of imaging technology implementation, and inter-agency data sharing activities to be the least considered implementation area. This change in priorities points to the **increasing importance of inter-agency cooperation to eliminate redundancy in federal operations.**

Exhibit III-2

Scope of Federal Imaging Technology Implementation



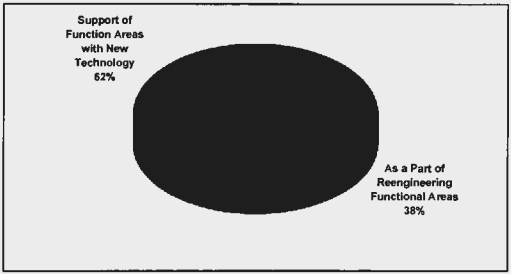
C
Use of Imaging Technology

Agency representatives were asked how their organizations were using and planned to use imaging technology. Exhibit III-3 shows that a majority (62%) of the respondents reported use of imaging as a new technology to support current functional architecture. The minority (38%) of the respondents reported use of imaging technology as a part of reengineering functional areas.

In addition to these two responses, the survey also offered the choice of imaging technology for use in new program initiatives only. However, no survey respondents indicated any use of imaging technology in this manner. The current results are similar to those reported in INPUT's 1994 imaging study, suggesting a **relatively stable distribution in the use of imaging technology.**

Exhibit III-3

Use of Imaging Technology



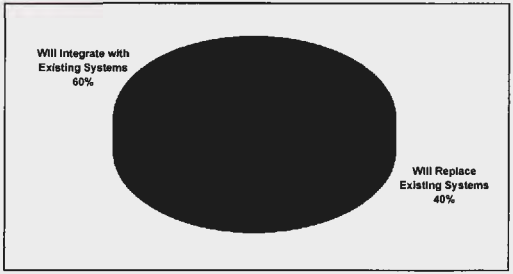
D
Imaging Technology Integration

To assess the manner in which imaging technology will be implemented in the federal government, survey participants were asked how imaging would integrate with existing systems and operations. The results in Exhibit III-4 show that, of the respondents, the majority (60%) intended to integrate new imaging technology with existing systems, while the minority (40%) intended to use imaging technology to replace existing systems.

The survey also offered the choice of separate implementation of imaging technology, but that was not chosen by any respondents. This is a significant change from the results of the 1994 imaging study in which 30% of respondents reported separate implementation, and only 7% of respondents reported using imaging technology to replace existing systems. This change demonstrates the federal government's **movement away from stand-alone systems toward interoperable, integratable** systems.

Exhibit III-4

Imaging Technology Integration



E
Application of Imaging Technology

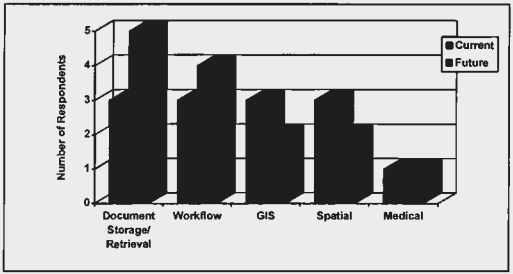
Respondents were asked what type or types of imaging applications would be useful to their organization, both currently and in the future. Exhibit III-5 shows that while current responses were fairly even, future responses indicate a **clear trend in the direction of document storage and retrieval**. The 1994 imaging study found a similar trend toward document storage and retrieval, but reported much less emphasis on workflow applications. This variation can be explained with the fact that, at the time of the 1994 study, workflow was an emerging application, and it has since gained more of a presence in the imaging technology market due to the pressure on the government to streamline federal operations.

Although the survey results in Exhibit III-5 imply a declining emphasis on GIS and spatial imaging applications, overall industry indicators suggest growth in these areas as well, though perhaps not as much growth as will be seen in the area of document storage and retieval.

The Department of Veterans Affairs reported a current use of medical imaging on a limited scale and noted that expanded use was expected in the future. The Department of Defense also indicated a use of medical imaging in another part of the survey, but that does not show up in this section.

Exhibit III-5

Application of Imaging Technology

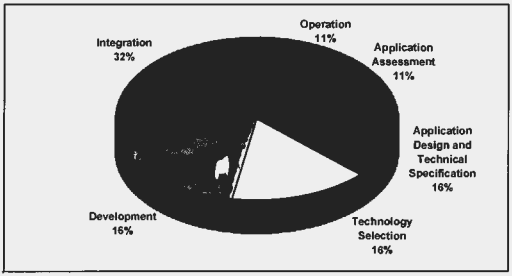


F
Required Vendor Support

To determine outsourcing requirements, agency representatives were asked in what areas they expect to require vendor support. As shown in Exhibit III-6, respondents indicated **a primary vendor requirement in the area of integration**. Secondary requirements included application design and technical specification, technology selection, and development. This is a slight departure from the findings of the 1994 imaging study which reported technology selection as the primary requirement for vendor support and integration as the secondary concern.

Exhibit III-6

Areas of Required Vendor Support

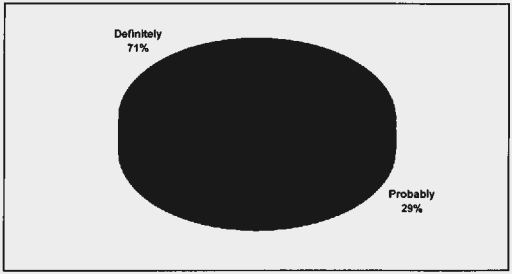


G
Importance of Commercial Off-the-Shelf Solutions

Agency representatives were asked about their expectations for using commercial off-the-shelf (COTS) solutions (as opposed to custom designed and developed solutions) for their imaging requirements. Agency responses demonstrated a **clear preference for COTS solutions** with 71% of the respondents saying they would definitely use COTS and the remainder saying they would probably use COTS. No respondents choose the other three available responses (only possible, probably not, and definitely not). These results are very similar to those reported in the 1994 imaging study, demonstrating the continuing importance of COTS solutions to the federal government.

Exhibit III-7

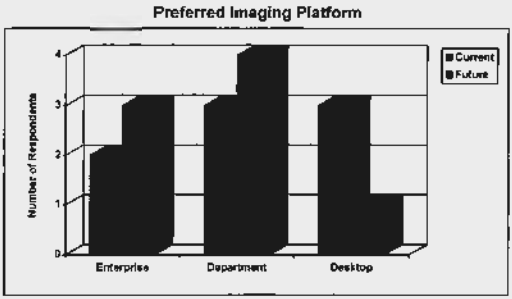
Use of Commercial Off-the-Shelf Solutions



H
Preferred Platform for Imaging Technology

Agency representatives were asked what type of platform they expect to use in support of their imaging operations, both currently and in the future. Exhibit III-8 shows that current preferences are even for department and desktop level platforms, and slightly lower for enterprise level platforms. However, when considering future operations, respondents presented a preference in the direction of department and enterprise level platforms, and away from desktop level platforms. The **trend toward department level platforms** agrees with the results of the 1994 imaging study.

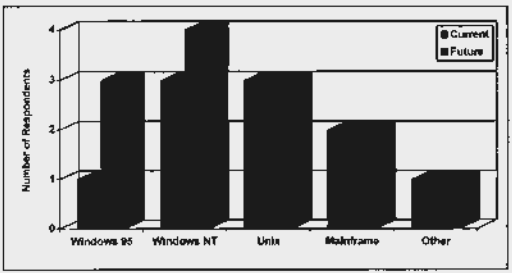
Exhibit III-8



Preferred Operating System for Imaging Technology

In addition to platform preferences, survey participants were asked what operating system they expect to use in support of imaging operations, both currently and in the future. As shown in Exhibit III-9 respondents are currently using primarily Windows NT and Unix as operating systems. However, respondents expect to be making increasing use of Windows 95 in the future.

Exhibit III-9



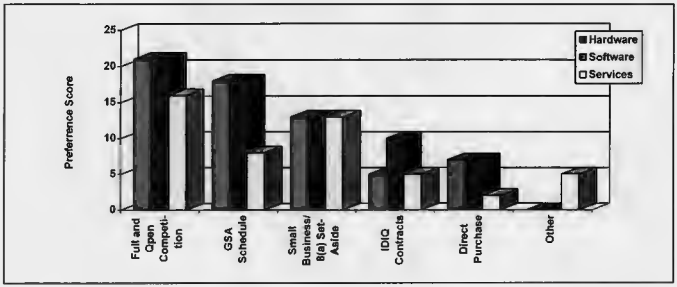
J
Preferred Method of Acquisition

To determine how the federal government is likely to acquire imaging technology, agency representatives were asked what methods of procurement they expected to make use of in the acquisition of imaging hardware, software and services. Survey respondents ranked their most preferred acquisition methods of the six listed in Exhibit III-10. The rankings were converted to an aggregate score for each category in order to display the results in a graphical format.

Full and open competition seems to be the most preferred method of acquisition among survey respondents. However, GSA schedule purchasing also ranked highly for imaging hardware and software. For imaging services, small business or 8(a) set-asides ranked just behind full and open competition.

Exhibit III-10

Preferred Method of Acquisition



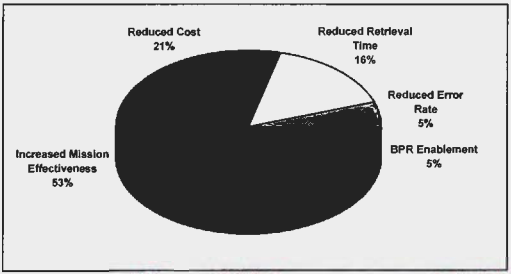
K
Advantages Expected and Experienced

Survey participants were asked what advantages they had expected from the implementation of imaging technology and what advantages they have had

already experienced. The question format was open-ended to allow for the greatest possible variety of responses. The responses were then grouped into separate categories for analysis. For anticipated advantages, most responses fell into the general category of increased mission effectiveness, although reduced cost and reduced retrieval time were strong secondary considerations. Reduced error rate and BPR enablement were also listed as advantages.

Exhibit III-11

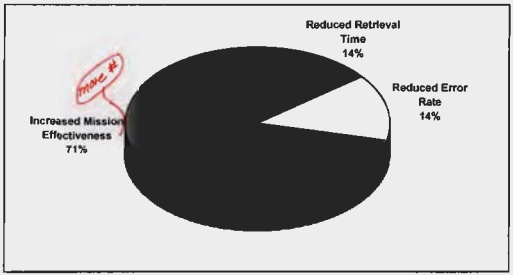
Advantages Expected



When considering advantages actually experienced, agency representatives were less prolific in their responses. Still, of the advantages listed, the majority cited increased mission effectiveness as an experienced advantage, and, to a much lesser extent, reduced retrieval time and reduced error rate. **Conspicuously absent from the list of experienced advantages is any mention of reduced costs.**

Exhibit III-12

Advantages Experienced



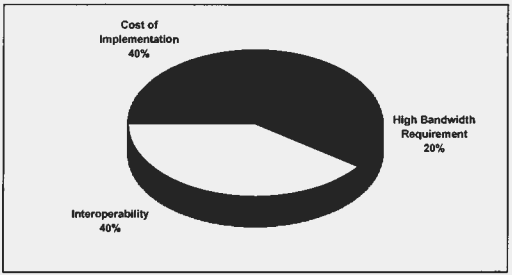
L

Disadvantages Expected and Experienced

Agency representatives were asked what disadvantages they expected and already experienced from the implementation of imaging technology. As in the previous section, participants were allowed open-ended responses which were then grouped into categories for analysis. Respondents listed far fewer disadvantages expected than they did advantages expected, which can be considered a positive sign for the industry. However, of the disadvantages respondents did list, **cost of implementation and interoperability** were primary concerns.

Exhibit III-13

Disadvantages Expected



Only three responses were received for disadvantages experienced. These were cost, increased hardware requirements and time delay in data acquisition for GIS applications.

M

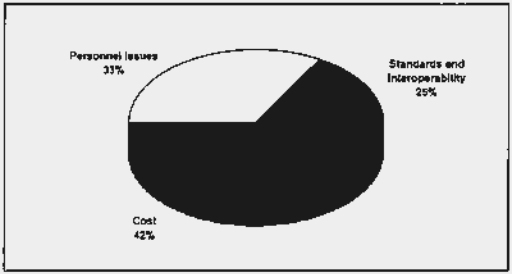
Obstacles to Imaging Technology Implementation

To identify problems in the federal imaging market, agency representatives were asked what obstacles are impeding the implementation of imaging technology in their operations. As in the previous section, participants were allowed open-ended responses which have been grouped into categories for analysis. **The primary concern was cost, both in terms of implementation and available funding.** Secondarily, respondents cited as obstacles personnel issues such as training and resistance to change. A third, but still significant, consideration was the development of standards and interoperability.

(Exhibit III-14)

Exhibit III-14

Obstacles to Imaging Technology Implementation



N

Industry Strengths and Weaknesses

Agency representatives were asked to identify areas in which industry had been most effective in satisfying their imaging requirements. Participants were allowed open-ended responses and, unlike the previous open-ended questions, responded in a manner that does not lend itself to graphical analysis. Agency responses are therefore reported as they were received. (Exhibit III-15)

Exhibit III-15

Industry Strengths

- Software
- Back-end Component Technologies
- Optical Disk Storage
- Real Time Downlinks
- Image Quality
- Systems Level Functions (As opposed to user level functions)
- Right-sizing Hardware

Likewise, agency representatives were asked to identify areas in which industry had been least effective in satisfying their imaging requirements. Again, responses were too varied to be presented in a meaningful graphical format, so they are reported as they were received.

Exhibit III-16

Industry Weaknesses

- Helping to size up the capacity of our organization's local network infrastructure to accommodate the imaging application workload
- Bringing to market generalized COTS front-end applications that are easily configurable to a particular business solution
- Putting to bed some nagging standards issues
- Integrating imaging technology with business processes and supporting applications
- Cost effective data entry

Note that the industry strengths cited by survey participants generally involve technical factors, while the weaknesses cited tend to deal more in the area of functional support. This suggests the importance of vendor support for federal imaging operations through all phases of technology implementation, not just in technology delivery.

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IV

Vendor Perspectives

This section presents the results and analysis of primary research surveys conducted with eight vendors in the federal imaging technology market. Participants were surveyed on some of the same issues that the agency participants addressed. This allows for a reality check of vendor perceptions ~~as opposed~~ to the perceptions of their customers in the federal government. in regard

As in the agency section, vendor survey participants were, in most cases, allowed multiple responses in order to enhance the comprehensiveness of the results within the framework of the questions. In several questions, survey participants were allowed open-ended responses to avoid steering the results in any specific direction. Upon completion of the research phase of this report, the open-ended responses were analyzed and grouped into appropriate categories for a graphical presentation of the results.

Also included in this chapter is a section devoted to profiling prominent vendors in the federal imaging technology market. The vendor profiles section is included as a result of industry and government interest in identifying significant vendors in particular segments of the federal information technology market. These profiles are intended to facilitate the development of teaming arrangements and new sources of imaging products and services.

A list of the participating vendors may be found in Appendix C. A copy the vendor questionnaire is provided in Appendix D.

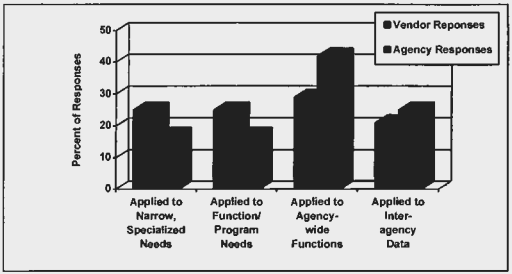
A

Scope of Federal Imaging Technology Usage

Vendor participants were asked in what areas of operation the federal government will be using imaging technology. Vendor respondent opinions were balanced between the four areas shown in Exhibit IV-1. Agency-wide functions enjoy only a slight plurality, as compared to the agency responses, which gave the same category a much larger plurality. Program needs and specialized needs are given a greater measure of importance by vendors than by agencies. Conversely, inter-agency data sharing activities are given a lesser measure of importance by vendors than by agencies.

Exhibit IV-1

Scope of Federal Imaging Technology Usage
Vendor vs. Agency Perspective



B

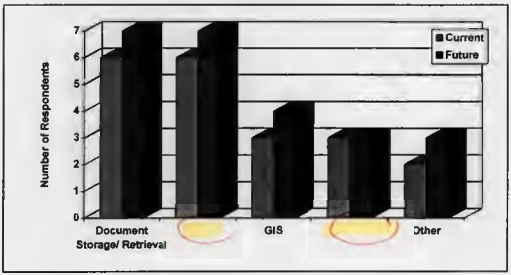
Application of Imaging Technology

Vendor participants were asked what type or type(s) of imaging applications would be useful to the federal government. Vendors report a primary concentration on document management/retrieval and workflow applications. This corresponds to agency views on the most useful imaging applications. In the Other category, vendors named specifically medical imaging, an application that was also identified by the Department of Veterans Affairs and the Department of Defense, and

intra/ internet imaging applications, which were not identified by agency representatives.

Exhibit IV-2

Application of Imaging Technology
Vendor Perspective



Bring copy forward ?

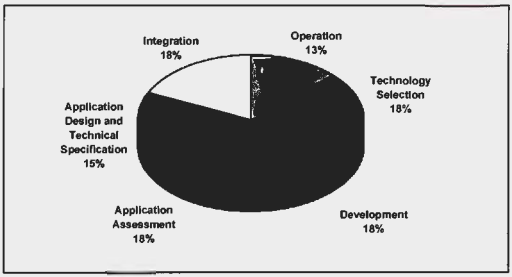
C

Required Vendor Support

Participating vendors were asked in what areas did they offer imaging services. Vendors reported offering support in all areas. Very little emphasis was placed on any one area of support.

Exhibit IV-3

Areas of Vendor Support

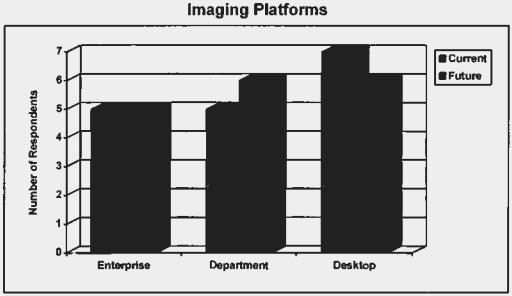


D

Preferred Platform for Imaging Technology

Vendor participants were asked what platforms will support their imaging applications currently and in the future. The trend toward department level platforms and away from desktop level platforms corresponds to results from the federal survey. However, current agency results for platforms were evenly distributed between department level and desktop level, whereas current vendor offerings seem weighted in the direction of desktop level applications.

Exhibit IV-4



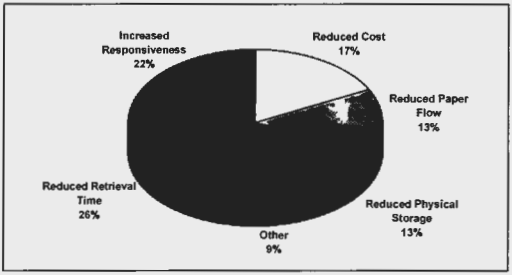
E
Advantages Expected and Experienced

Vendors were asked what advantages they had expected and had actually experienced in the federal government from the implementation of imaging technology. The format of their responses was the same as it was for agency survey respondents. Participants were allowed open-ended responses which were then grouped into categories as shown in Exhibit IV-5

Vendors most often cited reduced retrieval time as an anticipated advantage of the implementation of imaging technology. Close secondary expected advantages were increased responsiveness (corresponding to increased mission effectiveness in the agency results) and reduced cost. Agencies had placed more emphasis on increased mission effectiveness as an anticipated advantage and less on retrieval time. Cost was of slightly higher importance to agencies than it appears to be to vendors.

Exhibit IV-5

Advantages Expected
Vendor Perspective

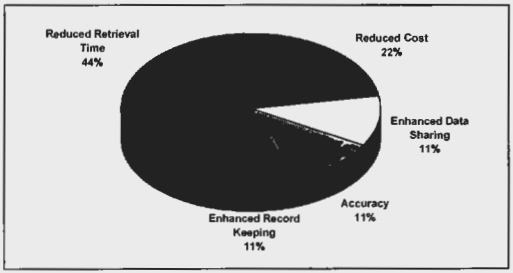


Like agency representatives, vendor respondents had less to say about the advantages actually being experienced as a result of the implementation of imaging technology. Reduced retrieval time is still the primary advantage cited by vendors. Interestingly enough, reduced cost is the secondary advantage listed by vendors as an experienced advantage. Agency respondents did not list cost as an experienced advantage at all.

(Exhibit IV-6)

Exhibit IV-6

Advantages Experienced
Vendor Perspective



F
Disadvantages Expected and Experienced

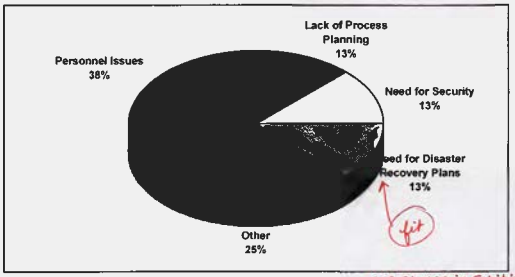
Vendors were asked what disadvantages they had expected and have had actually experienced in the federal government from the implementation of imaging technology. The primary disadvantages that had been expected by vendors fall into the category of personnel issues. Personnel issues include training, acceptance of new technology and business processes, and concerns about increased information access. The large Other category is comprised of a single responses including legal issues, lack of support, and ergonomics. (Exhibit IV-7)

NOTE: comprise = to include or contain vs. "is composed of"

The primary disadvantages cited by agency respondents were split between cost of implementation and interoperability, significant for the fact that neither of these two issues were listed by any vendors.

Exhibit IV-7

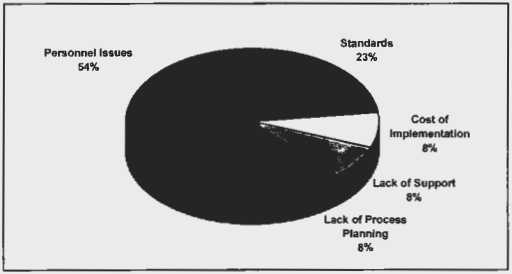
Disadvantages Anticipated Expected
Vendor Perspective



The experienced disadvantages reported by vendors did include cost of implementation, but to a lesser extent than that voiced by agency participants. The primary disadvantage cited by vendors was again personnel issues. Standards, comparable to the interoperability category in the corresponding agency chart, is listed as a secondary disadvantage by vendors.

Exhibit IV-8

Disadvantages Experienced
Vendor Perspective

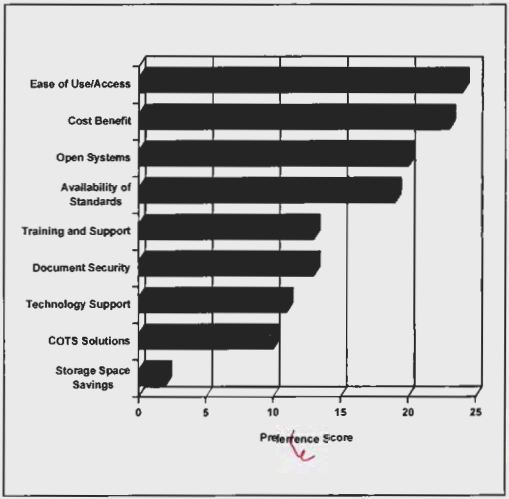


G
Critical Success Factors

To determine the important issues facing the federal imaging market, vendors were asked to rank a list of critical success factors facing the use of imaging technology in future projects. Rankings were assigned points for graphical analysis as illustrated in Exhibit IV-9

Ease of use/access ranked highest among vendors as a critical success factor, followed closely by cost benefit, open systems, and availability of standards. This corresponds closely to the obstacles to imaging technology implementation reported by agency respondents: cost, personnel issues, and standards and interoperability. The results suggest that **the imaging industry is correctly reading the needs of their federal customers** in terms of the broad issues affecting the development of the imaging technology market.

Exhibit IV-9



H
Vendor Profiles

As a result of industry and government interest in prominent vendors in the federal imaging market, this report includes brief profiles of such companies. The vendors profiled in this section were chosen according to their presence in the federal imaging market and according to the availability of product and marketing information. INPUT's intent, through these profiles, is to facilitate the identification of teaming opportunities and new sources of imaging products and services.

1. Adobe Systems Incorporated

P.O. Box 7900
1585 Charleston Road
Mountain View, CA 94309-7900
(415) 961-4400
www.adobe.com

Primary Imaging Submode: Software

Adobe software products and technologies enable users to create, view, communicate, and print electronic documents across platforms. The company licenses Adobe PostScript software to more than 65 leading computer and printer manufacturers worldwide. Retail products include Adobe Acrobat Exchange, Adobe Acrobat Capture, Adobe FrameMaker, Adobe PageMaker, and a suite of graphics creation and image manipulation tools. Adobe's portable document format (PDF) is widely used among federal agencies for the distribution of electronic documents over the internet.

2. Applied Systems Technologies, Inc. (ASTI)

Suite 900
6110 Executive Boulevard
Rockville, MD 20852
(301) 770-3382

Primary Imaging Submode: Software

ASTI provides imaging and electronic document management (EDM) solutions that bring significant productivity enhancements to the workplace. ASTI has applied their skills in advanced computing systems and created a highly efficient turnkey imaging and EDM system called Legal Image, an integrated application that combines high-performance batch scanning, image processing, OCR, indexing, and storage. ASTI also offers a Quick Capture and Retrieval capability which captures images from any device that has a standard video output and digitizes them for storage. Medical Image is another offering which combines the Quick Capture and Retrieval capability with Legal Image to create a powerful system for managing all sorts of diagnostic information.

3. Cirrus Technology, Inc.

4th Floor
5301 Buckeystown Pike
Frederick, MD 21704
(301) 698-1900
www.cirunite.com

Primary Imaging Submode: Software

Cirrus Technology is an OS/2 software development firm specializing in document imaging and storage management software. The Unite products are based on IBM's Workplace Shell and Systems Object Model (SOM) technology, and are designed to facilitate efficient and effective document imaging, storage management, and CD mastering solutions.

4. Data General

4400 Computer Drive
Westboro, MA 01580
(800) 328-2436
www.dg.com

Primary Imaging Submode: Hardware, Software

Data General is a leading supplier of open enterprise systems. They provide affordable, high-volume document imaging, optical and computer output to laser disc (COLD) solutions, and worldwide services for a broad range of user and reseller requirements. Data General's Aviion business servers, based on Intel processors, running their DG/UX enterprise operating system or Windows NT server, combined with their CLARiion disk arrays, and imaging and document management software provide the best in business hardware and software.

5. Doxsys

4800 Hampden Lane
Bethesda, MD 20814
(301) 961-0517

Primary Imaging Submode: Professional Services

Doxsys is a premier provider of imaging, document management and workflow automation solutions. Doxsys provides a total solution for client-server initiatives, particularly in the areas of records and

correspondence management, accounts payable, travel vouchers, and contract administration. Doxsys also provides technical support services such as application development, installation and maintenance, and training either on-site or at their state-of-the-art center in Bethesda, MD. Doxsys products and services are available to government customers via GSA Schedule contract and the NIH Electronic Computer Store contract.

6. Eastman Kodak

Business Imaging Systems
901 Elmgrove Road
Rochester, NY 14653-6305
(800) 243-8811

Primary Imaging Submode: Hardware, Software

For more than 60 years, Kodak's Business Imaging Systems organization has marketed solutions that make it easier for business and government to file, find, and distribute documents. Kodak products and systems improve user access to documents and boost workgroup productivity throughout the world. No other vendor offers as broad a base of document imaging solutions: document imaging hardware and software, photo CDs, writable Cds, and 5.25-inch and 14-inch optical discs.

7. Excalibur Technologies Corporation

Suite 200
1921 Gallows Road
Vienna, VA 22182
(703) 761-3700
www.excalib.com

Primary Imaging Submode: Software

Excalibur RetrievalWare delivers integrated adaptive pattern recognition processing (APRP) and semantic network searching in a unified family of client-server-based software components. RetrievalWare enables developers and integrators to build best-of-breed retrieval solutions across multiple information types. The RetrievalWare architecture is designed to support the entire range of Excalibur products and capabilities: real-time and retrospective text searching, fingerprint, facial image and a developing family of other image and signal retrieval servers, and end-user systems for applications such as document management and intelligence analysis.

8. Lockheed Martin Corporation

640 Freedom Business Center
King of Prussia, PA 19406
(800) 438-7246
www.lmco.com/ist

Primary Imaging Submode: Professional Services

The comprehensive systems integration and sophisticated project management capabilities of Lockheed Martin enable imaging to be fully incorporated into mission-critical applications, affording maximum contribution to corporate profitability. From multimedia object management solutions for Lotus Notes to enterprise-wide integration of imaging and workflow systems, Lockheed Martin designs and provides document imaging and data management solutions with scalable system architectures.

9. Optical Technology Group (OTG)

Suite 805
6701 Democracy Boulevard
Bethesda, MD 20817
(800) 324-4222

Primary Imaging Submode: Software

OTG offers a family of Windows and Windows NT-based solutions including imaging applications, mass storage management software, COLD products and imaging utilities. With headquarters in Bethesda, MD^2, OTG has sales and distribution partners worldwide. OTG's products include ApplicationExtender - an image and object management tool, ColdExtender - a COLD utility, ObjectUtilities - a OLE 2 imaging viewer and processor, and Report Distribution Systems - a comprehensive Windows solution for creating and distributing computer output data on optical media.

10. Wang Federal, Inc.

7900 Westpark Drive
McLean, VA 22102
(800) 356-4038
www.wangfed.com

Primary Imaging Submode: Software, Professional Services

Wang Federal, Inc. is a subsidiary of Wang Laboratories, Inc., a worldwide leader in workflow, integrated imaging, document management, and related software for client-server open systems. Wang is a major worldwide provider of integration and support services. Wang Federal emphasizes its strengths in the areas of open work management solutions, professional services, and multi-vendor services.

11. Xerox Corporation

#129-78A
800 Phillips Road
Webster, NY 14580
(888) 362-8462
www.xerox.com

Primary Imaging Submode: Hardware

Xerox has been developing high-quality image-scanning technology since 1974. This technology has been used predominately to front-end its digital production systems, such as the DocuTech Production Publisher. Xerox now offers this same technology, the DocuCS Scanning System, to value-added resellers (VARs) and integrators for all their document imaging, forms processing, and print-on-demand applications.

V

Market Forecast

INPUT's forecast of the federal imaging market for the fiscal years 1996–2001 is presented in this chapter. This market forecast draws on INPUT's experience as a federal information technology market observer and on INPUT's annual forecast of the federal information technology budget. Specific market data is based on an analysis of agency information technology budget reports submitted annually to the Office of Management and Budget (OMB).

Analysis of market data includes an examination of historical trends, current budget estimates, and the presence of market drivers and inhibitors. In addition, market segments are broken into submodes for a more detailed representation of the market. In this report, the imaging market is broken into the submodes hardware equipment, software products, and professional services.

This chapter will also identify the specific factors driving and inhibiting the federal imaging market, and explain how they affect the overall market forecast.

A
Market Forecast

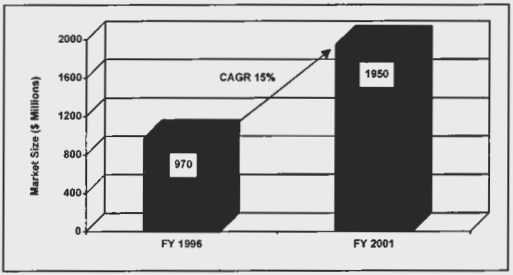
In formulating this forecast of the federal imaging market, INPUT considered not only the factors discussed above, but also polled agency representatives as a part of the agency survey about their views of the federal imaging market. INPUT's 1994 imaging study was also used as a reference in developing the current forecast.

After considering all available information, INPUT estimates the fiscal year 1996 federal imaging market to be $970 million. The 1996 imaging market accounts for more than 3% of the total federal information technology budget. In addition, INPUT expects the federal imaging

market to expand at a very healthy 15% compound annual growth rate (CAGR) over the next five years. This is compared to an expected CAGR of slightly more than 4% for the total federal information technology budget. A 15% CAGR will yield a federal imaging market of almost $2 billion, or 6% of the total federal information technology budget, in fiscal year 2001. Exhibit V-1 shows INPUT's forecast of the federal imaging market.

Exhibit V-1

Federal Imaging Market



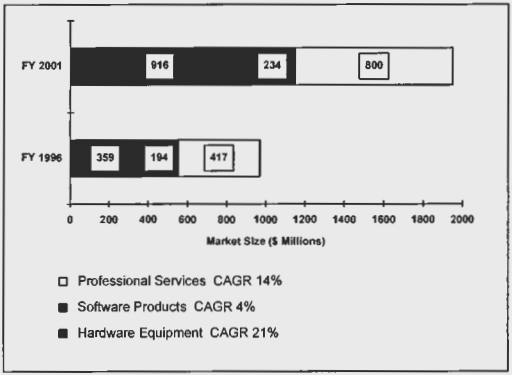
INPUT's 1994 study of the federal imaging market forecasted a compound annual growth rate of 21%, which would have surpassed $2.6 billion by fiscal year 2001. The 6% decline in the federal imaging market's growth rate over the past two years is attributable to the slowdown in the growth of the overall federal information technology budget. INPUT forecasted a 6% CAGR for the total federal information technology budget in 1994. Pressure on the federal government to cut the budget and reduce the federal deficit has had the effect of slowing the federal information technology growth rate to just over 4% for INPUT's 1996 forecast.

B
Imaging Market Submodes

The submodes of the federal imaging market are hardware equipment, software products, and professional services. Exhibit V-2 shows the breakout of these submodes ~~respective to~~ ^in respect of the total federal imaging market.

Exhibit V-2

Imaging Market Submodes



All three federal imaging market submodes will experience positive growth over the next five years. Software products will grow at about the same rate as the total federal information technology budget, and imaging professional services will grow at about the rate of the total federal imaging market. However, hardware equipment will be growing at a much faster rate.

The differing growth rates of the imaging submodes can be explained in the following manner. As federal agencies continue to implement new imaging systems, the rate of implementation will begin to slow down. This will translate into a plateau for the professional services submode and level its growth to that of the overall imaging market.

At the same time, technology will be continuing to improve at its customary rapid pace. This will result in an increasing need for hardware upgrades to maintain performance in existing imaging systems. Conversely, the slowing rate of implementation of new imaging systems will result in a decline in the rate of growth of the software submode, because agencies will not need to upgrade software products for imaging applications with the same speed that they will need to upgrade hardware.

C
Market Drivers

The federal imaging market is growing at a rate significantly higher than that of the total federal information technology market. The high growth rate is the result of several influencial market drivers.

The primary imaging market driver is the requirement for government agencies to achieve **increased mission effectiveness** in a climate of shrinking agency budgets. Increased mission effectiveness was reported as the primary advantage anticipated by agency representatives in the agency survey (See Exhibit III-11). Imaging technology increases the ability of federal agencies to be more responsive to their customers by means including the elimination of processing and increasing the speed of information transfer.

Closely related to increased mission effectiveness as a market driver is the **pressure to reengineer business processes**. Imaging technology is a primary means of reengineering business processes. Imaging allows for the automation of many functions such as records management and data collection. Process automation is also a solution to the **declining federal workforce**, another market driver. Process automation frees overburdened federal employees from time consuming tasks.

An additional market driver related to increased mission effectiveness is the increasing emphasis on **inter-agency data sharing**. As a means of streamlining the federal government, agencies are searching for ways to eliminate redundant activities. Imaging technology provides a solution by facilitating inter-agency data sharing. As a result, information compiled by one agency can be easily shared with other agencies, and allows for the elimination of duplicate data collection activities.

Another significant market driver is **cost benefit**. Not only are federal agencies trying to improve mission effectiveness, but they are also trying with less funding. Agencies hope to use imaging technology to reduce costs in areas such as labor, physical storage, and materials. However, the cost benefit of imaging technology has not been immediately apparent. While still a strong market driver, only time will tell if the cost benefits of imaging technology will outweigh the costs of implementation.

D
Market Inhibitors

The federal imaging market, while very healthy, is not without its inhibiting factors. Primary among the imaging market inhibitors is the **cost of implementation**. As was noted in the previous section, agencies are waiting to see if the cost of imaging technology implementation will be outweighed by the cost benefit. The cost of implementation includes the purchase of imaging hardware, software, and a variety of professional services.

Also inhibiting the federal imaging market is the question of **standards and interoperability**. Interoperability goes hand in hand with the notion of eliminating redundant government functions. Standards must be agreed upon and interoperability achieved before federal agencies can actively pursue inter-agency data sharing.

Several market inhibitors fall under the heading of **personnel issues**. Personnel issues can include lack of training, resistance to change, and a lack of confidence in electronic documents. The successful implementation of imaging technology is dependent on agency personnel embracing imaging systems.

Another inhibiting factor in the federal imaging market is **the high bandwidth requirements** created by the transmission of graphical data. Many agencies have reported overloaded networks as a direct result of the increasing transmission requirements of imaging technology.

While all these factors act in some way to inhibit the growth of the federal imaging market, the driving factors listed in the previous section are most responsible for the market's direction.

E

Federal Imaging Opportunities

Exhibit V-3 contains

To supplement data provided in the market forecast, which tends to be of a general nature, the following is a list of some of the major, active, pre-award imaging procurements that INPUT has identified.

Exhibit V-3

Major Imaging Opportunites

Program	Department	Status	Value ($ Millions)
Integrated Information Management Program	Agriculture	Awarded February 1995	$276
Medical Diagnostic Imaging System	Army	RFP expected September 1996	$350
Data Capture System 2000	Commerce	RFP expected July 1996	$1,200
Multiple Data Entry Service	Education	Awarded August 1995	$150
Licensing Support System	Energy	RFP expected July 1996	$200
Geographic Information System	EPA	Recompete 4QFY98	$21
ImageWorld	HHS	Award expected August 1996	$20
Earth Resources Observation System	Interior	Award expected December 1996	$100
National Crime Information Center 2000	Justice	Awarded March 1993	$250
Integrated Automated Fingerprint Identification System	Justice	Awarded January 1996	$200
Imaging Solutions for DFAS	Navy	Recompete 4QFY98	$21
Document Processing System	Treasury	Awarded February 1994	$1,300

VI

Conclusions and Recommendations

Generally, the findings of this report indicate a healthy federal market for imaging technology. The results of the agency survey were positive overall, but they did identify areas for vendor consideration. The results of the vendor survey demonstrated a high level of consensus between obstacles identified by agencies and critical success factors identified by vendors.

This section of the report will summarize the specific findings of the surveys and the market forecast. Those findings are presented as general observations which have been evaluated to develop a series of recommendations for vendors in the federal imaging market.

A
General Observations

Imaging Landscape

1. Imaging technology has an increasing presence in federal operations. The results from Exhibit III-1 show a high level of imaging implementation. When analyzed with the significantly lower level of imaging implementation reported in the 1994 imaging study, a clear growth trend is evident. This growth trend is reflected in INPUT's forecast of the federal imaging market. At 15% CAGR, the market for imaging technology is growing at a much faster rate than the overall federal IT budget. The rate of implementation will eventually begin to slow as the federal government becomes saturated with imaging technology, but this will result only in a shift in demand from new systems to the upgrade and maintenance of existing systems, and not in a real decline in the imaging market.

2. The federal government is moving towards agency-wide and inter-agency imaging operations.

Pressure on federal agencies to streamline their operations and cut expenditures has resulted in a trend towards agency-wide and inter-agency operations that will eliminate redundant processes. Exhibit III-2 shows that the majority of survey respondents expect agency-wide or inter-agency implementation of imaging technology. Comparing these results to the results of the 1994 imaging study, which reported a preference for narrow, program level implementation, the movement towards broad application of imaging technology becomes apparent. By implementing agency-wide and inter-agency operations, the government can take advantage of data sharing to remove the need for redundant operations.

3. Document storage/retrieval is the most required imaging application.

The pressure on federal agencies to streamline their operations and provide equivalent or increasing levels of service with declining budgets is also creating demand for document storage and retrieval applications. As Exhibit III-5 shows, agencies expect to be making increasing use of document storage and retrieval in their operations. The 1994 imaging study found a similar trend indicating relative stability in the demand for document storage and retrieval applications.

4. Integration is the most required area of vendor support.

Agency representatives reported, as shown in Exhibit III-6, integration to be the most required area of vendor support. Additionally, Exhibit III-4 shows that the majority of survey respondents expect future imaging acquisitions to integrate with existing systems. The emphasis on integration indicates the importance of interoperability to the federal government and the movement away from stand-alone systems.

5. Commercial off-the-shelf imaging solutions are favored.

Exhibit III-7 shows an overwhelming preference for commercial off-the-shelf (COTS) solutions. Especially in the current atmosphere of streamlining federal acquisitions, agencies do not want to spend the time and, more importantly, money for the development of a customized system when they can satisfy their requirements through a COTS solution.

6. Full and Open Competition is the preferred method of acquisition.
Agency representatives reported full and open competition to be their most favored overall means of acquiring imaging technology. However, as shown in Exhibit III-10, respondents ranked GSA schedule purchasing almost as highly as full and open competition for hardware and software acquisitions. Recent changes in GSA regulations, such as the relaxation of the maximum order limit, will likely make GSA schedules increasingly popular among agency procurement officials. For the acquisition of professional services, agency representatives ranked small business and 8(a) set-aside procurements a close second to full and open competition.

Problem Areas

7. Agencies are not yet realizing the cost benefit of imaging technology implementation.
Cost benefit is one of the most significant factors considered when federal agencies evaluate the potential implementation of imaging technology. Exhibit III-11 shows cost benefit second only to increased mission effectiveness as an expected advantage of imaging technology implementation. However, Exhibit III-12 shows that agencies have not yet experienced cost benefits as a result of the implementation of imaging technology. Furthermore, in Exhibit III-13, agency representatives report cost of implementation as a major disadvantage to the use of imaging technology. These three sets of results make clear the significance of cost benefit as a problem area.

8. Trained users and imaging technology acceptance are still problems.
As shown in Exhibit III-14, personnel issues such as training, resistance to change, and lack of confidence in electronic documents are a major obstacle to the implementation of imaging technology. Any system is only as good as the people that use it. In order for imaging technology to succeed, federal personnel must be trained and must accept it as a viable solution to their business requirements.

9. Imaging standards remain unresolved.
Exhibit III-14 also shows that agencies list standards and interoperability as a major obstacle to the implementation of imaging technology. This issue is closely related to the movement away from stand-alone systems and toward agency-wide and inter-agency applications. For this movement to occur, standards will have to be resolved and interoperability achieved.

Market Factors

10. Increased mission effectiveness is the primary imaging market driver. In the course of examining the federal imaging market to determine its size and rate of growth, increased mission effectiveness was identified as the primary driver of the federal imaging market. Increased mission effectiveness sums up all of the reasons federal agencies are implementing imaging technology. The federal government is attempting to improve service to its customers at the same time that it cuts its workforce and budget. Imaging technology offers the government reduced data storage requirements, reduced response time, increased accuracy, and the automation of personnel-intensive business processes. As long as the government pursues the goal of increased mission effectiveness, the federal imaging market will be driven at an impressive rate.

B
Recommendations

1. Prepare for more competition

The increasing level of imaging technology implementation will create a need for more competitive solutions as the government becomes saturated with imaging systems.

2. Emphasize data-sharing capabilities

The trend toward agency-wide and inter-agency data sharing activities will require vendors to shift the scope of their product offering from program level applications to broader agency level applications with strong data-sharing capabilities.

3. Emphasize data storage and retrieval capabilities

Data storage and retrieval is the federal government's most preferred imaging application. While other application areas should perform well in the foreseeable future, document storage and retrieval will likely exhibit the strongest growth.

4. Examine professional services offering

The federal government has a strong requirement for imaging professional services. This requirement primarily involves systems integration; however, the agency survey identified requirements for more complete vendor support, ranging throughout the scope of imaging technology implementation from technology selection with an emphasis on business process assessment to user training.

5. Provide adaptive COTS products

The federal government has a strong desire for commercial off-the-shelf imaging products. However, these products must include the flexibility to be tailored to specific business functions.

6. Push for industry standardization

The lack of imaging standards is cited by agencies as one of the most significant obstacles to imaging technology implementation. Vendors must work with the federal government to resolve the standards issue. Vendors should realize that the current lack of clearly defined standards creates a strong level of demand for fully interoperable imaging solutions.

7. Emphasize Cost Benefit Analysis

Federal agencies are very concerned with the direct cost benefits of imaging technology implementation. Vendors must provide clear business justifications for imaging solutions in order to maintain the market's robust rate of growth.

8. Get on a GSA Schedule

Federal vendors should look beyond the standard full and open competitive procurements for new business opportunities. Hardware and software vendors will find a strong market for their products through GSA schedules, which agencies ranked almost as highly as full and open competition as a means of procurement. Professional services vendors should examine small business and 8(a) set-aside opportunities, which also ranked closely to full and open competition as an acquisition method.

C
Final Remarks

The federal imaging market is clearly a very healthy segment of the total federal information technology market. The market is enjoying the force of federal downsizing as a driving factor and will continue to do so over the next five years. A few factors exist which are inhibiting market growth, but, with limited effort, they can either be compensated for, or eliminated. As a result, the current federal imaging market presents excellent opportunities for all imaging vendors, and should be a profitable area of IT business development.

4. Examine professional services offering

The federal government has a strong requirement for imaging professional services. This requirement primarily involves systems integration; however, the agency survey identified requirements for more complete vendor support, ranging throughout the scope of imaging technology implementation from technology selection with an emphasis on business process assessment to user training.

run-on sentence

5. Provide adaptive COTS products

The federal government has a strong desire for commercial off-the-shelf imaging products. However, these products must include the flexibility to be tailored to specific business functions.

6. Push for industry standardization

The lack of imaging standards are cited by agencies as one of the most significant obstacles to imaging technology implementation. Vendors must work with the federal government to resolve the standards issue. Vendors should realize that the current lack of clearly defined standards creates a strong level of demand for fully interoperable imaging solutions.

7. Emphasize Cost Benefit Analysis

Federal agencies are very concerned with the direct cost benefits of imaging technology implementation. Vendors must provide clear business justifications for imaging solutions in order to maintain the market's robust rate of growth. Vendors must show their solutions as increasing an agency's mission effectiveness.

8. Get on a GSA Schedule

Federal vendors should look beyond the standard full and open competitive procurements for new business opportunities. Hardware and software vendors will find a strong market for their products through GSA schedules, which agencies ranked almost as highly as full and open competition as a means of procurement. Professional services vendors should examine small business and 8(a) set-aside opportunities, which also ranked closely to full and open competition as an acquisition method.

Participating Agencies

Representatives of the following agencies participated in INPUT's federal imaging market survey.

- Department of Commerce
  Office of the Secretary
- Department of Defense
  Office of the Assistant Secretary of Defense
  Command, Control, Communications and Intelligence (C3I)
- Department of Energy
  Office of Information Management
- Federal Emergency Management Agency
- Department of State
- Department of the Treasury
  Internal Revenue Service
- Department of Veterans Affairs
  Technology Integration Service

(Blank)

B

Letter to Agencies Interviewed and Agency Questionnaire

January 12, 1994

Dear Government Official:

INPUT, a leading market research company, is conducting research into the use of **imaging technology** by the federal government. INPUT recognizes the importance of imaging technology as a solution to the dilemma of maintaining service with the shrinking federal budget and workforce, and to the objectives of business process reengineering. With your help and participation, INPUT will develop a report on the Federal Imaging Technology Market intended to aid imaging technology vendors in focusing their efforts to better serve the federal government.

INPUT would greatly appreciate your taking a few minutes to complete the following survey. In return for your participation in the survey, INPUT will send you a copy of the Executive Overview of the report upon its completion. Further, if you are interested in having your agency's use of imaging technology included as a case study in our report, I have included a copy of the information we need from you. We are including this additional data in our report as a result of the interest in associated activities among your peers.

Please fax back your completed survey or feel free to contact me personally to voice any questions or concerns about this study. We hope to complete the research for this report by **Friday, June 7, 1996**, and would appreciate your response as soon as possible. All information obtained by these surveys is confidential. Only summary information is released to the public, and agency officials are not identified.

The feedback from you and your peers about our reports and information sharing has been very positive. If you have any ideas or suggestions regarding how our understanding of technology needs, issues or direction of the federal user community could be of use to you, please let me know.

In the meantime, thank you for your help and cooperation.

Sincerely,

Payton C. Smith
Associate Consultant

USE OF IMAGING TECHNOLOGIES IN THE FEDERAL SECTOR

Contact information for survey respondent

Agency: _____
Name: _____
Title: _____
Telephone: _____
Best day time to call: _____

Mailing address for your copy of the Imaging Technology Report-Executive Summary

Name: _____
Title: _____
Telephone: _____
Mailing Address: _____
_____
_____
_____

Case information:

1. Description of agency mission as it relates to the imaging application
2. Project objective
3. Project description and related background information
4. Internal and external system linkages and interfaces
5. Project status and results to date
   a. Benefits
   b. Cost
6. Supporting vendors
7. Technologies utilized

Organization:_____ Interviewee:_____ Date:_____

Survey Questions:

1. Is your organization currently using or planning to use imaging technology to support its operations?

   - ☐ No
   - ☐ Not yet, but planning to (indicate how many projects within the next 2 years) _____

   Have implemented imaging technology:

   - ☐ for a few (1-4) applications
   - ☐ for several (5-9) applications
   - ☐ for many (10 or more) applications

2. In what areas of your operation do you feel imaging technology will be used?
   - ☐ Applied to specific, narrow, specialized need(s)
   - ☐ Applied to broad functional/program needs
   - ☐ Applied to agency-wide functions
   - ☐ Applied to inter-agency data sharing activities

3. How is/will your organization use imaging technology?
   - ☐ As part of the reengineering functional areas and associated new technology implementation
   - ☐ Support of functional area(s) with new technology
   - ☐ For new program initiatives only

4. How will the use of new imaging technology integrate with existing systems and operations?
   - ☐ Not at all–separate implementation
   - ☐ Will integrate with existing systems
   - ☐ Will replace existing systems

5. What type(s) of imaging system are/will be useful to your organization?

	Are now	Will Be
Document Storage/Retrieval	☐	☐
Workflow	☐	☐
GIS	☐	☐
Spatial	☐	☐
Other	☐	☐

6. In your imaging projects, in what activities will your organization need vendor support?

- ☐ Application assessment
- ☐ Technology selection
- ☐ Application design and technical specification
- ☐ Development
- ☐ Integration
- ☐ Operation

7. Do you expect to make use of commercial off-the-shelf systems (vs. custom designed and developed) for your imaging needs?

- ☐ Definitely
- ☐ Probably
- ☐ Only possible
- ☐ Probably not
- ☐ Definitely not

8. What platforms are being/will be used to support your imaging operations?

	Are now	Will Be
Enterprise	☐	☐
Department	☐	☐
Desktop	☐	☐

9. What operating systems are being/will be used to support your imaging operations?

	Are now	Will Be
Windows 95	☐	☐
Windows NT	☐	☐
Unix	☐	☐
Mainframe	☐	☐
Other _____	☐	☐

10. For your organization's future imaging requirements, which contract vehicles do you expect to most use? (Please indicate rank 1-6 for each service mode.)

	Hardware	Software	Services
Full and open competition			
Small Business and 8(a) set-aside			
GSA Schedule			
Direct purchase			
IDIQ contracts (your agency or other agency)			
Other _____			

11a. Based on your organization's experience to date, what advantages do/did you anticipate and have you actually experienced due to the implementation of imaging technology?

Advantages anticipated:

1._____
2._____
3._____
4._____

Advantages experienced:

1._____
2._____
3._____
4._____

11b. Based on your organization's experience to date, what disadvantages do/did you anticipate and have you actually experienced due to the implementation of imaging technology?

Disadvantages anticipated:

1._____
2._____
3._____
4._____

Disadvantages experienced:

1._____
2._____
3._____
4._____

12. What are the critical success factors which must be addressed to successfully use imaging technology in future systems projects?

1._____
2._____
3._____
4._____

13. What obstacles do you feel must be overcome to successfully implement imaging technology supported operations?

1._____
2._____
3._____
4._____

14. In what areas is Industry most effective at satisfying your organization's imaging requirements?

1._____
2._____
3._____
4._____

15. In what areas is Industry least effective at satisfying your organization's imaging requirements?

1._____
2._____
3._____
4._____

16a. What is your organization's current annual level of spending for imaging technology?

- ☐ $1-10 million
- ☐ $10-25 million
- ☐ $25-50 million
- ☐ More than $50 million

16b. Relative to your present and planned technology initiatives how will the expenditure for imaging technology change over the next five years?

		Indicate + or -	
☐	0-5%	+	-
☐	5-10%	+	-
☐	10-15%	+	-
☐	Over 15%	+	-

17. Of your organization's annual level of spending for imaging technology, what is the breakdown by percent of each market segment?

	Currently	In Five Years
Hardware	_____%	_____%
Software	_____%	_____%
Professional Services	_____%	_____%
Other _____	_____%	_____%

18. Over the next 5 years, what other considerations (problems, opportunities, trends, etc.) do you feel are relevant to the use of imaging technology in your agency? In the federal government?

1._____
2._____
3._____
4._____
5._____

Thank you. Please make any additional comments below.

C

Participating Vendors

The following list of imaging technology companies participated in INPUT's vendor survey of the federal imaging market.

Applied Systems Technologies, Inc. (ASTI)
Suite 900
6110 Executive Boulevard
Rockville, MD 20852
(301) 770-3382

Cirrus Technology, Inc.
4th Floor
5301 Buckeystown Pike
Frederick, MD 21704
(301) 698-1900
www.cirunite.com

Doxsys
4800 Hampden Lane
Bethesda, MD 20814
(301) 961-0517

Excalibur Technologies Corporation
Suite 200
1921 Gallows Road
Vienna, VA 22182
(703) 761-3700
www.excalib.com

HRB Systems
300 Science Park Road
P.O. Box 60
State College, PA 16804
Phone: (814) 238-4311
www.hrb.com

Lockheed Martin Corporation
640 Freedom Business Center
King of Prussia, PA 19406
(800) 438-7246
www.lmco.com/ist

Optical Technology Group (OTR)
Suite 805
6701 Democracy Boulevard
Bethesda, MD 20817
(800) 324-4222

U.S. Design Corporation
9075 Guilford Road
Columbia, MD 21046
(410) 381-3000
www.usdesign.com

Vendor Questionnaire

USE OF IMAGING TECHNOLOGIES IN THE FEDERAL SECTOR

Contact information for survey respondent

Organization: _____
Name: _____
Title: _____
Telephone: _____
Best day time to call: _____

Mailing address for your copy of the Imaging Technology Report-Executive Summary

Name: _____
Title: _____
Telephone: _____
Mailing Address: _____
_____
_____
_____

Corporate Profile:

Please provide information (in 1-3 paragraphs) about your company and its capabilities for satisfying the imaging requirements of the federal government. (Or attach marketing literature, annual report or capabilities statement)

Organization:_____ Interviewee:_____ Date:_____

Survey Questions:

1. In what areas of your operation do you feel imaging technology will be used?
   - ☐ Applied to specific, narrow, specialized need(s)
   - ☐ Applied to broad functional/program needs
   - ☐ Applied to agency-wide functions
   - ☐ Applied to inter-agency data sharing activities

2. What type(s) of imaging system are/will be useful to the federal government?

	Are now	Will Be
Document Storage/Retrieval	☐	☐
Workflow	☐	☐
GIS	☐	☐
Spatial	☐	☐
Other	☐	☐

3a. Based on your organization's experience to date, what advantages do/did you anticipate and have you actually experienced?

Advantages anticipated:

1._____
2._____
3._____
4._____

Advantages experienced:

1._____
2._____
3._____
4._____

3b. Based on your organization's experience to date, what disadvantages do/did you anticipate and have you actually experienced?

Disadvantages anticipated:

1. _____
2. _____
3. _____
4. _____

Disadvantages experienced:

1. _____
2. _____
3. _____
4. _____

4. What are the top five critical success factors which must be addressed to successfully use imaging technology in future systems projects? (Please indicate rank 1-5)

_____ Ease of use/access	_____ Storage space savings
_____ Cost benefit	_____ Document security
_____ Technology support	_____ Open systems
_____ Training and support	_____ Commercial off-the-shelf solutions
_____ Availability of standards	

5. In your imaging projects, what services do you offer?

- ☐ Application assessment
- ☐ Technology selection
- ☐ Application design and technical specification
- ☐ Development
- ☐ Integration
- ☐ Operation

6. On what platforms do your imaging solutions run?

	Are now	Will Be
Enterprise	☐	☐
Department	☐	☐
Desktop	☐	☐

7a. What was your organization's federal government imaging revenue for FY95? $_____

7b. Of your organization's FY95 federal imaging revenue, what is the breakdown by percent of each market sector?

_____% Civilian

_____% Defense

_____% State and Local (if applicable to federal revenue–otherwise please indicate S&L revenue here: $_____)

8. What was your organization's commercial imaging revenue for FY95? $_____

Thank you. Please make any additional comments below.

Glossary of Federal Acronyms

Acronyms and contract terms that appear throughout this document are identified below. These acronyms were encountered during the research for this report and are important in understanding the federal imaging market.

BPR	Business Process Reengineering
CAD	Computer Aided Drawing
CAGR	Compound Annual Growth Rate
CAR	Computer Assisted Retrieval
CD	Compact Disc
CIO	Chief Information Officer
COLD	Computer Output to Laser Disc
COTS	Commercial-off-the-shelf
DoD	Department of Defense
EC	Electronic Commerce
EDI	Electronic Data Interchange
EPA	Environmental Protection Agency
FAR	Federal Acquisition Regulations
FEMA	Federal Emergency Management Agency
FIRMR	Federal Information Resources Management Regulations

FY	Fiscal Year
GAO	General Accounting Office
GSA	General Services Administration
IMPACT	INPUT's Multiple Procurement ACTivities
IRM	Information Resources Management
IRS	Internal Revenue Service
IT	Information Technology
LAN	Local Area Network
MAR	INPUT's Market Analysis Program
NPR	National Performance Review
OCR	Optical Character Recognition
OPM	Office of Personnel Management
OMB	Office of Management and Budget
PAR	INPUT's Procurement Analysis Report
PDF	Portable Document Format
USDA	U.S. Department of Agriculture
VA	Department of Veterans Affairs
VAR	Value-Added Reseller