September 29, 2009

The ROI Of Imaging

by Sheri McLeish
for Information & Knowledge Management Professionals

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A Total Economic Impact™ Analysis Reinforces The High Value Of Going Digital

by Sheri McLeish
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EXECUTIVE SUMMARY

E-forms and Web-based self-service continue to grow, but many organizations still rely heavily on paper to manage information. Paper-intensive industries like education, healthcare, government, insurance, and banking benefit from imaging solutions by automating processes, reducing paper costs and improving employee and customer satisfaction. Imaging represents a low-risk, high-value investment that can be extended through an enterprise. And ROI can be rapid, with some companies realizing benefits within a few months.

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NOTES & RESOURCES

Forrester interviewed several vendor and user companies, including EMC, Esker, Hyland Software, KnowledgeLake, Kofax, LaserFiche, MeritCare Health System, Nuance Communications, Perceptive Software, and Wipro. We used this information to create an ROI model based on our TEI analysis framework.

Related Research Documents

"Use ECM To Fire Up Business Processes"
October 20, 2008

"The Total Economic Impact™ Methodology: A Foundation For Sound Technology Investments"
August 4, 2008

"Forrester TechRadar™: Enterprise Content Management, Q2 2008"
June 27, 2008

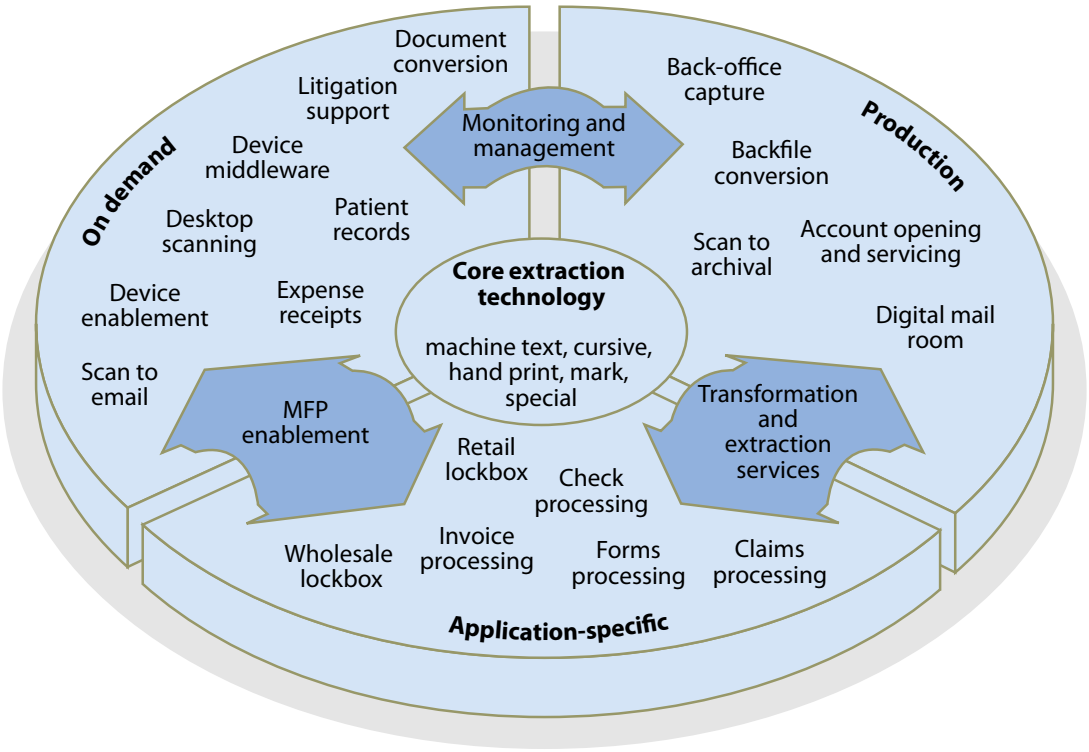
ENTERPRISES CONTINUE TO RELY ON PAPER PROCESSES, SO IMAGING STILL MATTERS

Forrester defines imaging as software for scanning, capturing, indexing, retrieving, processing, and archiving digital images of documents and electronic forms. Scanned images of text may be static or made dynamic with the use of optical character recognition (OCR) software. Today's applications are expanding and specializing to support more specific processes, and the business processes initiated by creating digital content, applying business process management, and subsequent automation drive even greater benefits from these investments (see Figure 1). For example, a university that scans forms and documents for student admissions can apply business rules for straight-through processing of applications that contain all of the necessary information, speeding up the admissions process. Applications that may be missing information can also be automatically routed to the right resource for follow-up.

Imaging — one of the original enterprise content management (ECM) technologies — continues to deliver high business value today because many processes still rely on paper. Compared to all other ECM investments, imaging outperforms everything from Web content management, to content services, to XML publishing — and has yet to crest. Why? Because information has been transforming from paper to digital form for the last 20 years and still has a long way to go. Scanning devices today have easy-to-use interfaces, software that's seamlessly integrated with popular business applications like Microsoft Office, and OCR capabilities to quickly and accurately interpret content. Network scanners from Canon, Fujitsu Kodak, HP, and Xerox, for example, can integrate with ECM, ERP, CRM, HRIS, or other workflows; many of the newest models have touch screen interfaces that can be customized.

But the bottom line is that for paper-intensive organizations, there really isn't an alternative to investing in imaging. References that Forrester interviewed said had they not taken this step they would have just gone on as they always had — not the best long-term option to manage growth and meet customer expectations in a digital age. The impact of the status quo over time results in increasing costs to manage paper processes, inability to offer Web-based self-servicing, and difficulty providing comparative levels of service with others that have digitized records.

Figure 1 Imaging Apps Have Expanded And Specialized



47199 Source: Forrester Research, Inc.

FOUR FACTORS DETERMINE THE ROI OF IMAGING

Building a business case for imaging involves assessing an organization for the biggest opportunities where paper remains a core part of the process. Because of the well-proven benefits, the business case must focus on where to invest, not whether to invest. For example, finance departments, more than HR, tend to lead in imaging adoption due to the great need for risk and compliance controls and automation. But to extend, integrate, and scale investments, information and knowledge management (I&KM) professionals need to understand not just costs and benefits, but risks and flexibility. How? Companies can use a simplified version of Forrester's Total Economic Impact™ (TEI) model to systematically consider:

1. **Benefits.** How will your organization benefit from imaging?

2. **Costs.** How will your organization pay, both in hard costs and resources, for imaging?

3. **Risks.** How do uncertainties change the total impact of imaging on your business?

4. **Flexibility.** How does this investment create future options for you organization?

Key Benefits: Productivity, Paper, And People

Organizations implementing imaging solutions can expect several benefits that reduce paper management, improve productivity, and positively impact peoples' experiences — both internal staff and customers. Economics drive imaging initiatives the same way they drive other green IT investments.[2] Organizations can estimate the scale, timing, and duration of these benefits by considering one or more key metrics and the value to the organization of improving those metrics over time (see Figure 2). Benefits include:

- **Improved productivity from less paper and more process management.** Productivity benefits result from reducing or eliminating time spent handling, storing, retrieving, distributing, and destroying paper. Metrics are employee-based and measure actual time spent on a given task. Physical file retrieval can take minutes, versus the seconds it can take to retrieve an electronic file. More significant are the efficiencies that come from content management, workflow, and BPM.[3] For example, record retention can automate document destruction when a compliance period is over. The IT manager for a 65,000-member credit union said, "We no longer have to try to figure out when documents need to be destroyed. We're saving about $5,000 a month in staff time to streamline processes or work done by hand."

- **Lower costs for staff and paper management.** Along with the hard costs of reducing paper procurement and storage, organizations report that imaging helps manage employee costs. For example, in healthcare, imaging technology lowers the cost of healthcare administration. MeritCare, a not-for-profit integrated healthcare system headquartered in Fargo, N.D., cut records management staff in half and saves close to $750,000 a year by scanning patient records. "When we move ahead we will probably decrease FTEs even more. It's not just the decrease in labor but all paper that goes along with it," said MeritCare's Caryn Hewitt, RN, BSN, Executive Partner.

- **Enhanced customer and employee satisfaction.** Information workers can retrieve and access digital documents faster and more easily than paper records. One state university reported that financial aid awards occur 75% faster now that they scan materials, because workflow for decision-making provides automatic routing and the opportunity for files to go into limbo, become lost, or misplaced has been eliminated.

- **Better content security and compliance.** Scanned documents aid security and compliance efforts because content management and records management capabilities can be applied. "We have eliminated the risk of damage or misplacement associated with hard files and designated user permissions to maintain tighter controls on confidentiality," said the senior systems administrator of a three-campus state university system. The university digitized 1 million documents across its university departments and realized a savings of $840,745 during the past 10 years from this effort.

- **Standardization and business continuity.** Most organizations have various office or branch locations that may contain unique records for their local clients. By scanning and digitizing these records they become more widely accessible and consistent. The CIO of an insurance company recalled his concerns about business continuity prior to implementing imaging: "If we have a disaster in Cleveland, we couldn't have another office come in and help because there was no consistency in how information was stored." Now, in the event of a catastrophe, any of the branches could step in and continue business as usual because they have access to the other location's documents.

Figure 2 Key Benefits Of Imaging

Dimension	Imaging helps by . . .
Reduced risk around document disclosure	• Enabling document-level protection of scanned material. • Eliminating possibility of loss, destruction, or deterioration of physical document.
Improved auditing efficiency	• Providing faster retrieval and accounting of digital documents. • Enabling more sophisticated classification and remote access to documents.
Reduced paper costs	• Lowering amount of physical storage space needed. • Lowering costs for paper procurement and management.
Increased employee efficiency	• All levels of employees see efficiency gains. • Headcount can be reduced at the administrative level.

47199 Source: Forrester Research, Inc.

Key Costs: The Usual Suspects

Organizations implementing imaging can expect costs in multiple areas for planning, hardware, software, implementation, and training. Integration with existing content management solutions and existing or planned BPM investments add additional costs upfront but generate greater benefits. Project costs include (see Figure 3):

- **Planning and needs assessment to help set direction.** Whether an organization is just getting started or looking to extend a departmental investment, a formal needs assessment helps prioritize departments and processes to focus on.

- **Hardware to scan, store, and display content.** Imaging hardware primarily includes desktop scanners. But organizations may need other technologies such as electronic signature pads or additional monitors to support specific processes. These can cost from hundreds to thousands of dollars, depending on the level of device sophistication and the number of office locations. If a company stores data on premise, servers will be needed; some firms choose to pay for offsite storage instead.

- **Software to enable document management, integration, and workflow.** Imaging software allows scanned content to be integrated with business processes, managed, secured, and classified. Enterprises can incrementally add vendor modules to support common business processes and industry-specific requirements. Software maintenance becomes an ongoing cost.

- **Services and staff for implementation, integration, and training.** Implementation costs vary depending on the complexity of the project. A turnkey solution may do the trick for certain departments, but those that need more complex workflows and process management require expertise. Finding imaging software that integrates with existing content management and BPM will help keep implementation costs down.

Figure 3 Key Costs Of Imaging

Project phase	Key costs
Upfront cost assumptions	• Needs analysis, consultation • Setup, configuration, customization • Hardware, software
Recurring costs	• Software maintenance and support • Hosting and storage • Bandwidth

47199 Source: Forrester Research, Inc.

Risk Analysis: Overestimating Automation, Stability, And Scalability

No change — or avoidance of change — is without risk. Factoring this uncertainty into the analysis converts an optimistic and potentially unachievable plan into one with higher accuracy. Initial estimates can be refined by factoring in three key risks:

- **Level of automation desired won't be achieved.** Many organizations said their greatest concerns were that their productivity gain estimates would be too high and that they wouldn't be able to achieve the level of automation anticipated.

- **Information will be lost.** Some organizations, particularly in heavily regulated industries like insurance, voiced concern about records retention and people not following the new processes. Others cited the need to ensure backups to systems and data. Following normal, prudent business IT practices to make sure backup works and content can be restored will minimize this risk.

- **Solutions won't be as scalable or stable as desired.** Many imaging implementations start at the departmental level and may not scale as quickly as needed or be stable enough to handle increasing volumes of data. One leading home lending business encountered severe production outages that crimped its consumer lending operations because dramatic growth in its loan volumes strained its imaging handling capacity.

CALCULATING ROI FOR HEALTHCARE ADMINISTRATION

To arrive at a quantitative assessment of the economic implications of imaging, Forrester evaluated the key drivers of benefits, costs, and risks for a hypothetical organization considering imaging. The composite organization is a rural healthcare consortium comprised of nine primary healthcare clinics and employing 225 people. The goal of the project was to implement a solution that could digitize existing health records such as registrations, patient records, and insurance and invoicing documents as well as institute new processes that require scanning of all new paper documents and forms.

ROI ANALYSIS SHOWS STRONG FIRST YEAR RETURN

In the ongoing healthcare reform debate in the United States, digital health records get regularly mentioned as an area ripe for improvement.[4] In the model developed for this analysis, Forrester found that an ROI of greater than 250% is achievable within a year for an imaging project of this size. Like many healthcare organizations, it employs medical professionals including physicians and nurses, midlevel specialists such as lab workers, and lower-level administrative employees handling patient registrations and records. The project presented involved taking the consortium's existing 1 million patient records, forms, and documents, bringing in temps, and scanning nearly all of the existing paper records. Going forward, new paper documents will also be scanned if they cannot originate electronically. Rather than invest in on-premise content management, this organization chose to have the content hosted externally and accessed via the Web (see Figure 4).

Figure 4 Model: Total Economic Impact Analysis Summary — Imaging

	Year 1	Year 2	Total	Present value (PV)
Benefit	$971, 5830	$968,876	$1, 940,459	$1,730269
Cost	$400,100	$43,000	$431, 728	$399,264
Net cash flow	$571,483	$925,876	S1,508,731	$1,331,004
NPV	$1,331,004			
ROI	333%			
Payback	Within 12 months			

47199 Source: Forrester Research, Inc.

FLEXIBILITY OPTIONS EXTEND INVESTMENTS VIA SELF-SERVICE AND AUTOMATION

In addition to realizing the tactical benefits described previously, organizations can leverage the imaging infrastructure for future projects that provide business value. In our evaluation, imaging created flexibility options in the following areas:

- **Ability to provide self-service.** Until documents are digitized, they cannot be made accessible via the Web channel. Consumers today expect to use the Web to find information and become increasingly frustrated to have to wait for documents to be faxed or mailed.

- **Automation of manual processes.** Organizations that introduce imaging initially for digital conversion also lay the foundation to apply process automation to other areas. For example, once documents are scanned, organizations can apply business rules to trigger notification for a contract renewal or to purge records past a predetermined date. Process automation can also represent continued opportunities to eliminate and automate paper processes as more departments and workflows are brought online.

RECOMMENDATIONS

READY, SET, SCAN

Any organization that is reliant on paper processes needs to begin or expand imaging investments across departments and functions. To do this, I&KM pros should:

- **Create a formal needs assessment.** Understand how reliant on paper you are, and whether you are fully leveraging ECM investments. Start by performing a needs assessment to systemically explore where paper processes exist, what imaging solutions are already in place, and to develop a strategy for digital transformation of paper processes.
- **Establish specific goals to be addressed.** Understand what your organization is trying to achieve: self-service improvements, productivity gains, cost cutting, or easing of compliance functions. There are many opportunities for imaging, so try to clarify what benefits apply to different departments within your organization and to customers.
- **Know your costs.** Typical savings include paper storage costs, as well as the costs for locating and retrieving documents. Evaluate the hidden costs around paper management that can be quantified as soft benefits, along with very tangible hard costs.
- **Evaluate solutions.** Create a solution shortlist based on the specific goals you trying to address and that fit with your current ECM and BPM investments.
- **Build your business case with clear ROI.** Use these requirements to drive solution comparisons and build a case to convince upper management of the strategic value of imaging investments.

SUPPLEMENTAL MATERIAL

Online Resource

The underlying spreadsheet detailing the model in Figure 4 is available online.

The online version of Figure 4 is an interactive tool to input an organization's anticipated costs, adjusted for risk, to see what return they should expect to realize from an imaging investment.

Methodology

Forrester Research uses a defined methodology for analyzing and evaluating the costs, benefits, and risks of a proposed solution. This methodology, termed Total Economic Impact (TEI), provides a holistic view of the decision by including an analysis of costs, benefits, flexibility, and risk. By including an assessment of risk, TEI provides a realistic view of expected outcomes, rather than one shaded by early optimism and enthusiasm.[5]

Unlike a cost- or technology-based analysis, TEI does not rely on industry averages or factors that are applied to all organizations, but is a methodology for evaluating projects. The TEI methodology forces the determination and quantification of relevant metrics in light of an organization's current state and future goals. Firms can use the TEI model as a proactive and predictive tool.

ENDNOTES

[1] Forrester analyzed ECM technologies by evaluating maturity and business value. Content services and enterprise rights management stand ready to displace legacy ECM investments, while the granddaddy of ECM — imaging — continues to deliver strong business value. See the June 27, 2008, "Forrester TechRadar™: Enterprise Content Management, Q2 2008" report.

[2] Green IT is as much about the greenbacks as it is about reducing the environmental impact of operating IT and the business. In fact, financial motivation — not environmental motivation — is the driving force behind the pursuit of greener IT. So when asking yourself whether green IT has financial merits, the short answer is yes — but IT leadership must understand why and how this is achieved to invest time and capital wisely. See the February 10, 2009, "Q&A: The Economics Of Green IT" report.

[3] Exploiting ECM to enhance an organization's ability to deliver more business value to its employees and customers and beat its competition requires enterprises to apply even more focus on business process optimization. Doing so can help enterprises squeeze greater efficiency not just from automation but from offering multiple seamless entry points and media via which users can access data, make their inputs, and move content through its life cycle. See the October 20, 2008, "Use ECM To Fire Up Business Processes" report.

[4] Speaking in an AARP tele-town hall Tuesday, July 28, 2009, US President Barack Obama noted, "Healthcare is the only area where you still have to fill out five different forms — when you go into a bank you don't have to do that. You've got an ATM. If you use your credit card, they'll find you real quick and the billing

is real easy — right? But if for some reason you want healthcare, you fill out pencil and paper." Source: HealthcareITNews, "Obama's talk with retirees highlights digital health records," July 29, 2009 (http://www.healthcareitnews.com/news/obamas-talk-retirees-highlights-digital-health-records)

[5] For an in-depth discussion of TEI and the individual elements within the methodology, please see the August 4, 2008, "The Total Economic Impact™ Methodology: A Foundation For Sound Technology Investments" report.

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