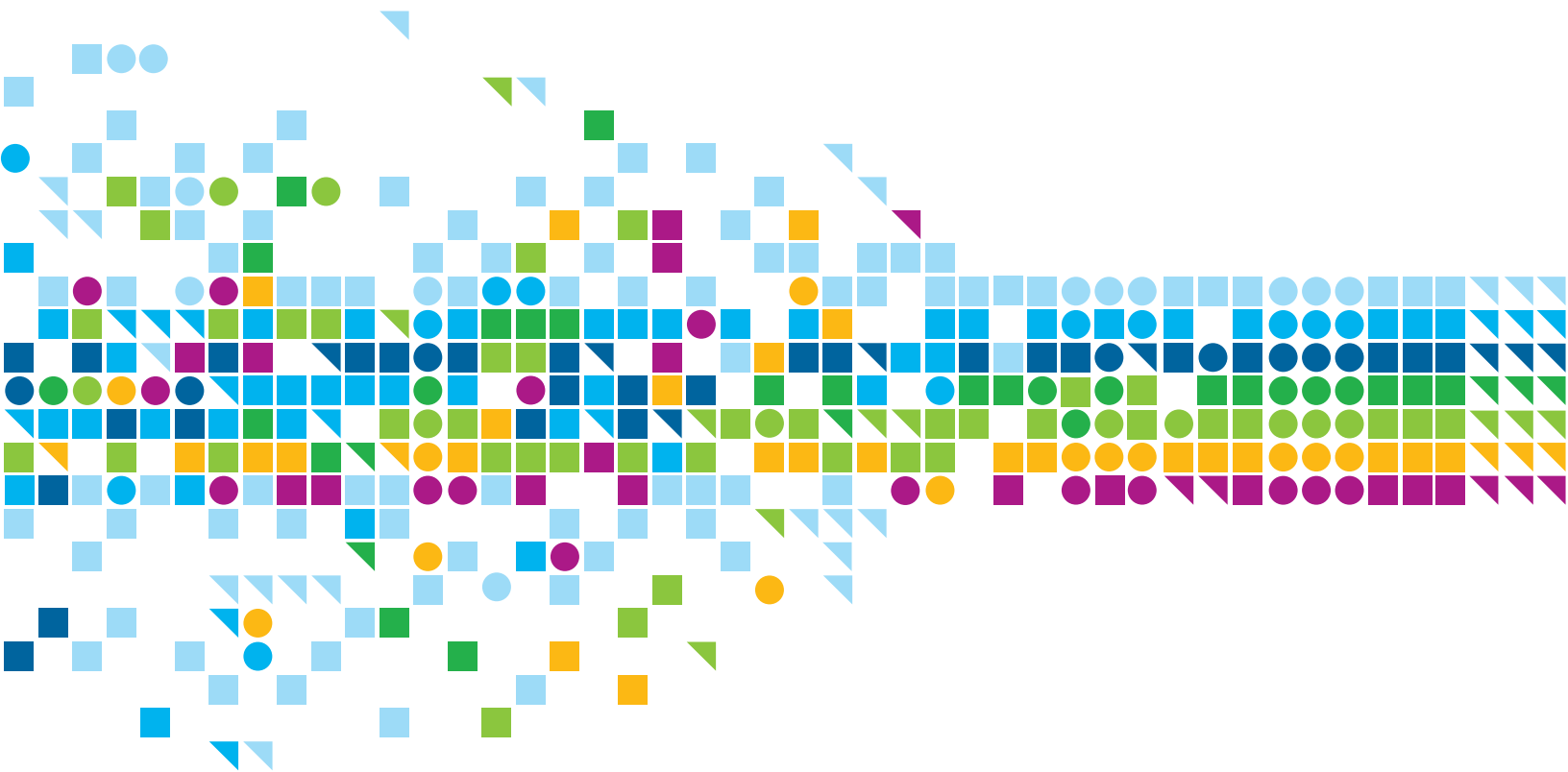


IBM ECM

# Intelligent imaging leadership guide

*New perspectives on enhancing customer engagement  
and reducing costs with smarter content*



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## Business at the speed of a click

### Meeting the challenges of customer engagement in a multichannel world

For large organizations, whether in business, government, healthcare or education, the challenge today is managing customer engagement in the new era of instantaneous multichannel communication. With mobile and online interaction skyrocketing, how do organizations that are still struggling internally with siloed information and tedious, paper-based processes address customers' demanding expectations?

The term "post-PC" describes a world in which personal computer use diminishes as mobile device use soars. The post-PC era presents new challenges to organizations in how they serve their customers because expectations have changed. As a result, customers expect immediate response 24/7 and faster delivery of goods and services—and if the organization can't keep up, customers will take their business elsewhere.

The challenge for corporations and government agencies is that they may not have modernized their internal processes to adapt



The pressure is on for organizations to update their web and mobile infrastructures as well as their internal processes

to respond to requests at the "speed of a click," no matter which channel the customer is using to communicate.

to new realities. A recent study by the Association for Information and Image Management (AIIM) demonstrates the problem: virtually every organization is receiving invoices by fax or as email attachments, yet more than three-quarters of emailed invoices and nearly a third of faxed invoices are being printed to process as paper or scanned back in (see Figure 1).<sup>1</sup>

Organizations are clinging to old methods, even though the promise of a paper-free office has been around for decades. And now—with an acceleration of incoming documents from multiple channels in a variety of formats—businesses need a new vision of document management.

### How do you mostly deal with invoices and forms that arrive as PDF attachments to emails?

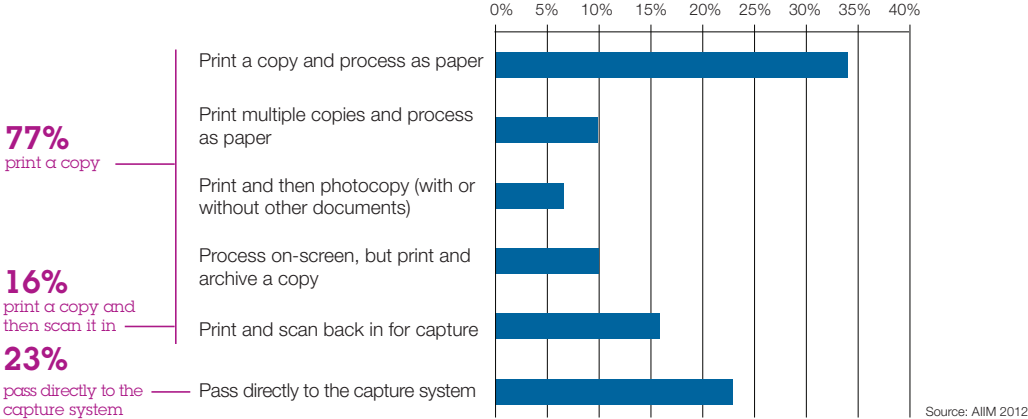


Figure 1: The 2012 AIIM survey *The Paper Free Office* reveals that workers are turning electronic documents into paper, suggesting a need to rethink old processing methods.<sup>2</sup>



## Rising expectations in the post-PC era

- 89 percent of people would discontinue their business with a company after a negative customer service experience
- 86 percent of consumers would pay more for a better customer experience
- 73 percent of consumers would expand their purchases with a merchant by 10 percent or more if the merchant delivered a superior customer experience
- 26 percent of consumers posted a negative comment on a social networking site, such as Facebook or Twitter, following an unsatisfactory experience with a company

Source: Gartner, "The Eight Building Blocks of CRM: Customer Experience," Penny Gillespie, 14 February 2013.

## Intelligent document imaging solutions

### Deliver a better customer experience

Intelligent imaging solutions combine advanced document capture, imaging repositories, workflow and content analytics to consolidate multiple inputs from email, faxes, mobile devices, online sources, archives and paper.

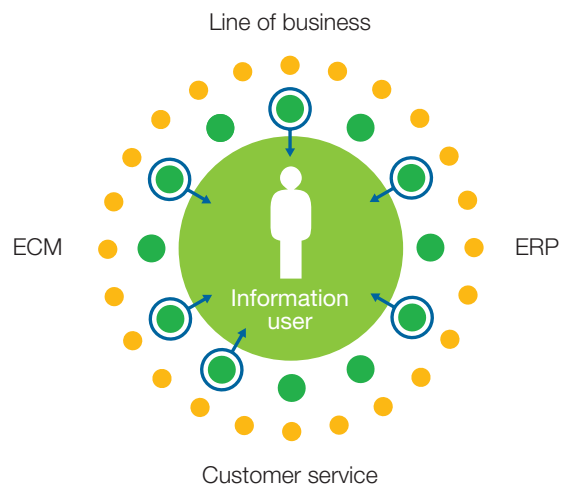


Figure 2: Intelligent imaging provides an infrastructure that can connect incoming content from your customer inputs with the business systems in your enterprise—helping you not only improve response time but also anticipate what your customers need.



Intelligent imaging solutions combine advanced document capture, imaging repositories, workflow and content analytics to consolidate multiple inputs from email, faxes, mobile devices, online sources, archives and paper.

These flexible solutions provide a proven method, which has been continually refined over the past 25 years, for addressing today's dynamic customer environment and for helping eliminate the obstacles that degrade customer service:

- **Automate paper-based processes** that are slow, error-prone and labor-intensive. Data is generally more accurate, and documents are less likely to get lost.
- **Image-enable your teams** and support compliance with the way you handle documents.
- **Reduce the “shadow copy” problem** where employees print out multiple copies for their own records.
- **Encourage real-time input of documents** from branches, by mobile workers, by business partners and even by customers to help eliminate shipping costs and time.
- **Use content analytics for highly accurate automatic document classification**, and stop relying on people and expensive separator sheets to do this important task.
- **Address the data silo problem** with a solution that spans the systems most organizations rely on, including enterprise resource planning (ERP), line of business (LOB), case management and customer relationship management (CRM). Customer-submitted documents can be made visible across these systems (see Figure 2).

## How to get started

### A map for getting from here to there

You may have heard the familiar truism, “The secret of getting ahead is getting started.” If you're going to get ahead with intelligent imaging, you're going to need to start by mapping your current process.

Create a diagram that gives an overview of the business processes that depend on content or documents (see Figure 3). Focus on points where:

- Content or documents enter the process
- Content or documents are used by workers in the process to make business decisions or resolve customer inquiries
- Content or documents are captured or archived for long-term storage

Document type	Field (invoice no., customer no., etc.)	Machine- or hand-printed	Validation source (system or database)	Routed to which system (ERP, CRM, etc.)

*Figure 3:* An IBM walkthrough document, similar to this chart, can help an organization map its current process methodologies—in this case, begin by listing each document type the organization receives and the types of data required.

The good news is that the core functionality delivered by intelligent imaging solutions has been deployed for a long time, mostly for the dramatic cost reduction the solutions deliver. But lately, organizations have developed an appreciation for the solutions' capabilities as an infrastructure for customer engagement in the new, dynamic social and mobile marketplace. The multichannel environment created by the explosion of online, social and mobile communications has created a new opportunity for traditional content management to do what it does best. Behind the firewall, these solutions can act as a single platform for the input of customer documents regardless of format, rapidly convert to the data standards that business systems require, and update customer service centers or even customer self-service web portals in real time for superior customer engagement.

## Four rules for success

### Many have traveled this path before

After you have mapped your current process, you will begin to see where automation could introduce new levels of efficiency. Four key rules can help you make the most of intelligent imaging:

#### 1. Turn paper into images as early as possible

Creating digital versions of paper forms is known as distributed capture. Many organizations today use portable or desktop scanners with a web connection to capture and store documents immediately. For occasional scanning, leverage multifunction peripherals (MFPs) to capture documents on demand. Another option: outfit mobile workers with smartphone capture tools for capture in the field. For example, one US trucking company is enabling its drivers to snap pictures of the proof of delivery seconds after the customer has signed.





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created a new opportunity for traditional content management to do what it does best.

## 2. Make document imaging ubiquitous

After a document has been captured as part of a customer on-boarding process, there may not be an immediate use for it. But later, customer service or sales representatives may need to reference that document. Make it easy for them by providing access to digital records.

In many organizations, employees still print “shadow copies” of digital documents. Shadow copies are a legal liability (especially when documents contain customer financial or health data) and they add to paper and printing costs. But when you have rolled out an intelligent imaging system that allows employees to call up virtually any document—subject to strict security controls—with a single click from within the operational environment, employees will find that copies are no longer necessary, although you may discover the need for an awareness program to wean employees off their dependency on paper.

## 3. Eliminate manual data entry

Text recognition in the form of optical character recognition (OCR) has steadily evolved, and supporting strategies that apply context and database lookups have improved tremendously in the past decade. If you have employees assigned to type in data from documents—or if you are outsourcing this activity—you have an easy source of cost and error reduction.

## 4. Use analytics, bar codes, OCR and other techniques—both separately and together—for accurate identification

Sometimes the biggest job facing employees who process inbound documents is to correctly classify each one. This task requires knowledge of the expected documents and of their eventual handling. Employees need to know how to route these documents to the proper business process, how to locate and extract key data and how to apply the proper retention rules. Multiple strategies for document classification, from simple bar code recognition to advanced text analytics that determine document type by its content, can be used separately or together to tease out the true category of each document (see Figure 4).

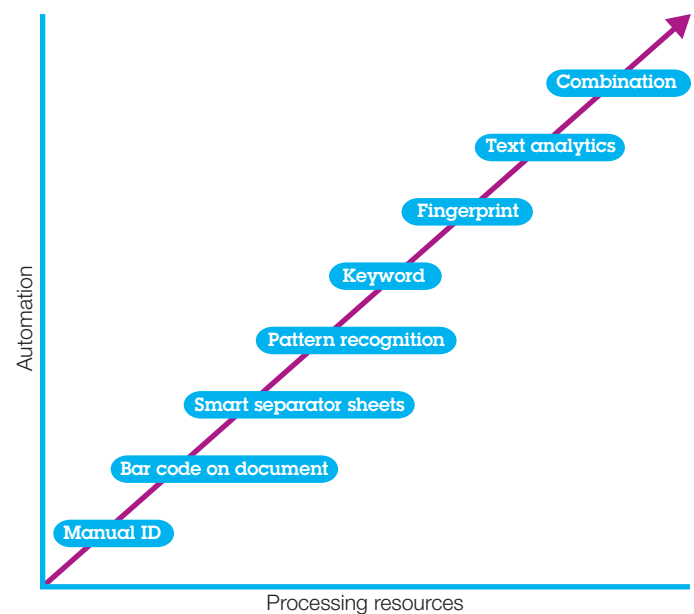


Figure 4: Select an intelligent imaging system that offers a comprehensive spectrum of classification techniques, from simple bar codes to text analytics.

## Pitfalls to avoid

### Failure is an option, so plan accordingly

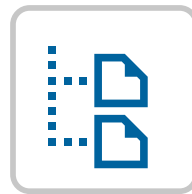
Why do projects fail? Some are doomed from the start because of gaps in the vendor selection process, while others stall simply because the project was not properly managed. Let's look at some common issues.

### Understand your documents

In document classification and data extraction, the details matter. Font sizes, paper quality, color, bar code placement, folds, dog-eared corners, blotches and wrinkles all affect what you can do with paper documents. But remember who is filling them in and what writing implements they're using, as well as how much variability there is in the layouts, the printers used or even the color of the ink. Successful production imaging projects know what to expect—in advance—and plan for it.

### Capturing documents is easy—but connecting to all your systems is not

Scanning a document or capturing one from a fax or email server is just a start. Document capture is a multistep process, often involving multiple systems for validating data as well as multiple formats for delivering data. Because document capture does not operate in isolation, you must line up the right resources who have access to or control over the IT enterprise, as well as the skills needed to connect to the line of business.



Document capture is a multistep process, often involving multiple systems for validating data as well as multiple formats for delivering data.

### Extract the right information the first time

When a document is indexed correctly, it can be easy to find. The inverse is that organizations can wind up with a repository full of documents that cannot be retrieved. History has shown that it is well worth the effort up front to make sure the data you need to locate a document is designed for automated capture.

### Get the categories right and the indexes can follow

Misclassification is one of the biggest sources of dissatisfaction, especially if documents become difficult to locate or they are sent to the wrong process. With too many document categories, it becomes a burden to add a new document. With too few categories, users may have to search through too many similar document types to find the one they need. Get the categories right, and you have built the foundation for a long-lasting solution.



## What success looks like

### Hint: You can measure it

The success of an intelligent imaging solution can be measured in terms of money saved, improved customer satisfaction, better patient outcomes, higher citizen ratings and better employee morale—improvements for whomever the system is serving.

How does intelligent imaging save money? First, it helps reduce the amount of time organizations need to receive, input, retrieve and dispose of inbound documents.

For example, if your team is still doing manual data entry, with automatic classification and data extraction (using OCR), the amount of time per document could possibly decrease by half. That means operators should be able to process twice as many documents in a day as in the past, let the volume rise with no increase in staffing, or allow the staff to be redeployed. Whatever the case, operational costs should fall dramatically.

Perhaps more difficult to measure, but no less important, are the soft benefits of increased customer satisfaction and responsiveness. Consider the factors that cause customer dissatisfaction: Can they be addressed by better responsiveness or more accurate handling of the information in the documents they are providing? If so, then you have discovered where customer satisfaction benefits are hidden, waiting to be unlocked by an intelligent imaging solution.

### Success is a moving target

The world doesn't stand still, and neither do your customers. For this reason, it's best to assume that the implementation of an intelligent imaging solution is never completely final (see Figure 5). Documents get redesigned, business rules change and new offers create new business processes. For these reasons, organizations need flexible solutions that let them continue to make refinements, add more document types and enable new users—as well as support ways to boost performance and extend value to other areas of the enterprise.

Activity	Typical duration	What happens	Customer tasks
Requirements gathering	7–14 days	Discovery of the client's requirements, document types and volumes, input devices, available databases, IT environment, compliance issues, target systems, business rules and the overall objectives for the solution	<ul style="list-style-type: none"> <li>Provide multiple samples of each document type</li> <li>Determine document fields to be captured, data types, validations and external lookups available</li> <li>Create workflow for each document type (including error handling, notifications, routing)</li> </ul>
Develop the design document	1–2 weeks	Creation of a document that lists the customer's objectives, document types, data types, target systems, associated databases, regulations and compliance	Communicate expected results; review, accept and agree
Application development	8–12 weeks	Configuration of the system to execute the processes stipulated by the design document	
Off-site testing	1–2 weeks	<ul style="list-style-type: none"> <li>Tests with the customer's documents, field maps, validations and export formats</li> <li>Running the expected volume of batches through the system</li> <li>Adjustments to achieve desired functionality and performance</li> </ul>	
Preparing the IT environment	Can be done in advance	Preparation for on-site implementation after testing is complete	<ul style="list-style-type: none"> <li>Set up the proper hardware to host the solution</li> <li>Locate and prepare the databases</li> <li>Make sure proper IT personnel are available and ready to assist</li> </ul>
Implementation and testing	Variable	Installation of the application in the customer's environment, including another wave of testing	
User acceptance training	2–6 weeks	Hand off of controls to the end user and resolution of remaining issues	Make sure the system administrator and IT team do their own testing to ensure that the agreed-upon goals and benchmarks are met
User training	2 days–1 week		Train users to navigate the interfaces, master the functionality of the verify screens and handle exceptions
Go live			

Figure 5: A typical timeline for design and implementation of a document imaging system.

## Payback time

### A do-it-yourself guide

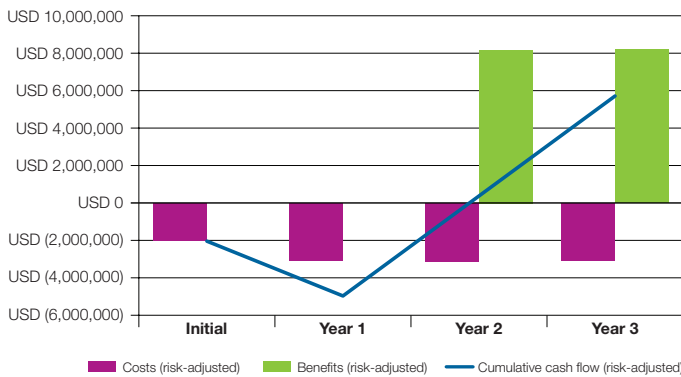
Intelligent imaging solutions can help your organization reduce costs (Figure 6) and build strategic value in several ways. To perform a cost-savings analysis, start by benchmarking your current process (Figure 7).

If, for example, it currently takes 12 full-time equivalent (FTE) employees to input documents, and you can achieve a 50 percent improvement in productivity through advanced document capture, then 6 of the 12 FTEs can be redeployed to more valuable tasks in the organization.



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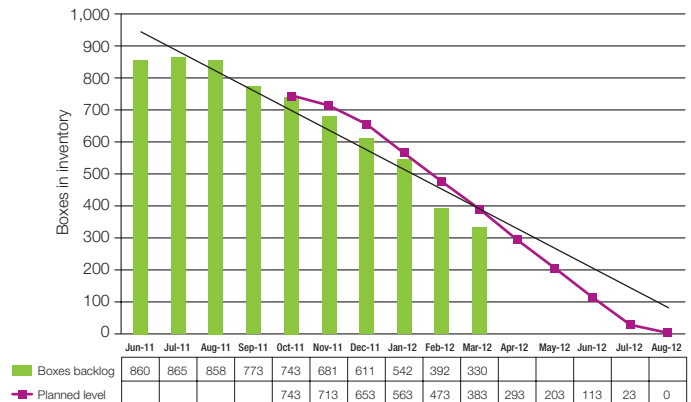
### Three-year, risk-adjusted cash flow



Source: "The Total Economic Impact Of IBM Datacap Taskmaster Capture," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2012.

Figure 6: Forrester Consulting performed a detailed ROI analysis of a large intelligent imaging solution and demonstrated the yearly and cumulative cash flow for the interviewed organization.

### DL application scanning backlog reduction plan



Source: State of Tennessee Department of Safety, April 2012.

Figure 7: An IBM client did its own measurement of how an intelligent imaging solution was progressing toward the goal of eliminating boxes of stored documents.

Figures 8 and 9 display a quick ROI calculator (<http://tinyurl.com/ckoqx23>), created by the IBM Business Value Assessment team, that you can access online to get a baseline understanding of potential cost savings. It takes into consideration virtually all of the costs associated with capturing, moving and storing documents. Two spreadsheets help gather the key details: organizational outlay and costs (Figure 8) and standard assumptions based on known industry data (Figure 9).

### Organizational costs

\$500,000	Initial SW investment
\$250,000	Year 1 services investment
12,000	Documents captured per day (includes ALL sources: paper, fax and email)
4.1	Average pages per document
5%	Projected yearly increase in documents captured
Y	Currently indexing using key from paper or image <Y/N>?
Y	Currently entering data into business system using key from paper or image <Y/N>?
Y	Currently using separator sheets in document prep <Y/N>?
\$26,860	Average yearly capture worker compensation
40	Current document prep staff (if multiple shifts, include total for ALL shifts)
5	Current scan operator staff (if multiple shifts, include total for ALL shifts)
25	Current document index entry staff (if multiple shifts, include total for ALL shifts)
15	Current business system data entry staff (if multiple shifts, include total for ALL shifts)
\$125,000	Current capture solution yearly maintenance expense
\$500,000	Projected current capture solution add-on license expense (volume upcharge, new capabilities)
2	Year of projected current capture solution add-on license expense (1-5)
75%	Projected increase in current capture solution yearly maintenance expense based on add-on licenses

Figure 8: Part one of the calculator gathers organizational costs.

### Standard assumptions

Dollar (\$)	Currency symbol
20%	Subsequent years SW S&S rate
250	Workdays per year
\$0.05	Costs per separator page
33%	Expected percentage improvement - document prep
20%	Expected percentage improvement - scanning
50%	Expected percentage improvement - document indexing
50%	Expected percentage improvement - business system data entry
5%	Yearly knowledge worker compensation increase
10%	Cost of funds/discount rate

Figure 9: Part two of the calculator applies industry-standard assumptions.

If you are replacing an existing capture system, the bottom three line items of Figure 8 take into account the costs of per-click-based or per-image-based pricing over a period of time. You may be surprised to learn that there are still solutions that charge by the number of documents processed.

This calculator demonstrates how selecting a more predictable user-based intelligent imaging solution can deliver exponential cost savings compared with volume-based pricing, especially as volumes rise.

After the numbers are entered, the calculator turns out a five-year return on investment (ROI) analysis based on document and page volumes, as well as reduced headcount and other labor reductions. You should not invest in an intelligent imaging system until you have performed this simple exercise. An IBM consultant can help you quickly fill in the tool and see the results.

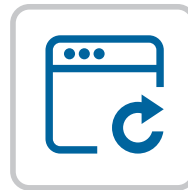
## Intelligent imaging use cases

### Proven models from best-in-class organizations

Forward-thinking organizations around the world have implemented variations on intelligent imaging solutions and evolved them into highly nuanced systems for customer engagement. Consider a few common applications and the benefits they provide.

**Accounts payable processing:** Intelligent imaging systems enabled a major aerospace manufacturer to input invoices from scans, faxes and emails; identify the vendor from a list of 55,000; extract data fields; match line items against purchase orders in SAP; and retain the invoice image for legal compliance—with a 75 percent reduction in staffing.

**Loan origination:** One of the largest banks in North America uses intelligent imaging to support the input and classification of all documents required for a loan approval, through any device at any location. The solution helps ensure that all documents are accurate and in good order, keeps them in the repository for the legal requirement and integrates with underwriting systems to support the approval process. As a result, the bank has one of the fastest, most cost-effective loan approval processes in the industry.



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**Claims processing:** Insurance companies make a key promise to their customers: to pay claims quickly and accurately. Numerous North American health insurance payers have installed intelligent imaging systems to process medical and insurance claims, prepare data for adjudication and retain claims for whatever period is specified by law. As a result, many have cut processing time and costs in half.

**Government tax return processing:** State and federal governments around the world use intelligent imaging to quickly and accurately intake tax returns and supporting documents for rapid processing and delivery to mainframe applications. Even with very high volumes during tax season, these systems have raised accuracy and dramatically reduced costs.



**Bank branch automation:** Intelligent imaging solutions help one bank in Romania accelerate document input from dispersed branch locations with easy distributed capture. This solution eliminates document shipment—but more important, it keeps branch personnel focused on customer responsiveness rather than document administration.

**Healthcare patient financial services:** Intelligent imaging transforms healthcare providers by connecting incoming documents—from the registration desk through patient discharge. One large North American healthcare provider has enhanced customer service through improved management of its claims and explanation of benefits (EOB) processing, and is delivering better patient care by making sure caregivers have access to the data they need when they need it.

**Customs document processing:** Intelligent imaging enables one North American logistics services company to receive scanned, faxed and emailed documents from all over the world; process them quickly; and deliver customs paperwork to customs agents rapidly and accurately, thereby improving customer satisfaction and reducing cost.

**Government safety department:** Intelligent imaging is helping one US state process driver's license applications, vehicle registrations and handgun permits faster and more accurately than ever before, with self-service kiosks in each location and fewer people behind the scenes doing tedious paper processing.



**Other use cases:** Intelligent imaging also presents new solutions for court systems, oil and gas exploration, property management, correspondence management, utility companies, commercial real estate, retail, human resources, contracts management and other document-centric processes.

## IBM sets the standard

### Integrated solutions for intelligent imaging

IBM delivers best-in-class, tightly integrated content engagement technologies that offer something for virtually every department in the organization. Operations executives get process efficiencies, finance executives realize greater ROI, sales and marketing representatives can better understand the potential benefits of enhanced analytics capabilities, and customer service leaders can gain the value of having immediate access to document images when customers are on the line.



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**IBM® Datacap Taskmaster Capture** software provides highly scalable, configurable advanced capture that supports multichannel inputs and outputs. Organizations around the world use Datacap as a universal capture portal that can transform document images from virtually any device (mobile devices, scanners, multifunction devices or fax machines) into digital data with support for dozens of languages. After documents have been converted, Datacap routes data and images to the target systems required to deliver customer satisfaction and support legal compliance.

In this way, Datacap is the on-ramp to the comprehensive IBM portfolio of smarter content solutions, including world-class imaging platforms, business process and case management solutions, social business, content analytics and information lifecycle governance.

**IBM Production Imaging Edition** software is a comprehensive production-strength intelligent imaging solution that includes Datacap, the IBM FileNet® Content Manager repository, a flexible document-centric workflow and a powerful viewing interface in a single purchase.





Software is helping build a smarter planet, giving organizations more opportunities to realize their potential and break new ground.

## Why IBM?

Software is helping build a smarter planet, giving organizations more opportunities to realize their potential and break new ground. To achieve such goals, businesses need software that is fueled by expertise, built for change and ready for work. IBM enterprise content management (ECM) solutions can help.

The comprehensive IBM ECM portfolio—including industry solutions from IBM Business Partners—helps businesses manage unstructured content, optimize business processes and address complex compliance requirements. Deep ECM capabilities also support an information agenda—the IBM approach to using information as a strategic asset through better business and IT alignment.

## About IBM ECM software

IBM ECM software enables the world's top companies to make better decisions, faster. By gaining control of unstructured information, companies can access information, collaborate and influence business decisions in new ways—making content a first-class source of insight. With industry-specific IBM ECM solutions, companies can capture, manage and share content throughout its lifecycle, helping ensure compliance, reduce costs and maximize productivity. The IBM ECM portfolio includes a wide array of capabilities that integrate with existing systems to help organizations maximize the value of information, including document capture and imaging, social content management, advanced case management, information lifecycle governance and content analytics. More than 13,000 global companies, organizations and government organizations rely on IBM ECM software to improve performance and remain competitive through innovation.

## For more information

To learn more about smarter content solutions from IBM, contact your IBM representative or IBM Business Partner, or visit:

[ibm.com/software/ecm/datacap](http://ibm.com/software/ecm/datacap)





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<sup>1,2</sup> AIIM, "*The Paper Free Office - dream or reality?*", 2012. © AIIM 2012, [www.aiim.org](http://www.aiim.org)

<sup>3</sup> "*The Total Economic Impact Of IBM Datacap Taskmaster Capture*," a commissioned study conducted by Forrester Consulting on behalf of IBM, September 2012.



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