The Total Economic Impact Of IBM Datacap Taskmaster Capture

As Used By A Logistics Services Company

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Forrester Consulting
Making Leaders Successful Every Day

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About Forrester Consulting

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Executive Summary

In today's economic climate, organizations are constantly looking for opportunities to increase efficiency and reduce costs. Organizations see the elimination of paper as an area that can yield an immediate return on investment (ROI). Heavily paper-based business processes provide some of the best opportunities for cost reduction and efficiency increases. Information capture can play an integral part in the optimization of business processes, as it speeds the conversion of unstructured information — whether that information is found on paper, in email and fax communications, and in PDF and XML files feeding operational systems. Information capture automatically groups and extracts business-critical information from incoming transactional documents and improves the integration with back-end systems and business processes. Information capture will reduce the amount of paper an organization will handle in the course a normal business day.

In April 2012, IBM commissioned Forrester Consulting to examine the total economic impact (TEI) and potential ROI that enterprises might realize by deploying IBM's Datacap Taskmaster Capture solution. Datacap is a full-featured capture platform that enables an organization to build and implement solutions for automating the digitization of paper documents. Datacap provides technologies for automated document identification, extraction of data by OCR, ICR, OMR and barcodes, automated data validation, an ergonomic GUI for editing and keying from images, and delivery of images and data in a variety of formats to enterprise content management (ECM), enterprise resource planning (ERP), and databases. For a more detailed overview of the Datacap solution, please refer to page 17.

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Datacap on their organizations.

IBM Datacap Taskmaster Capture Enabled A Logistics Services Company To Remain Competitive

This study illustrates the financial impact — what Forrester calls the Total Economic Impact™ (TEI) — of using IBM Datacap Taskmaster Capture solution within a large logistics services organization. Our financial analysis found that the interviewed organization experienced the risk-adjusted ROI, costs, and benefits shown in Table 1. For the clarity of this business case, this analysis focuses on one single Datacap application — i.e., for one specific business application implementation. However, at the time of the interviews, the organization had five additional Datacap applications in production and was rolling out two more — all of them used by different operational business groups.

Table 1

Three-Year Risk-Adjusted ROI[1]

ROI	Payback period	Total benefits (PV)	Total costs (PV)	Net present value
39%	24 months	$12,998,441	($9,364,617)	$3,633,824

Source: Forrester Research, Inc.

- **Benefits.** In conducting in-depth interviews with this existing IBM customer, Forrester found that this company experienced benefits of approximately $13 million over a three-year period. In particular, the company realized:

  > "All in all, the various Datacap applications that we have rolled out have helped us position ourselves to take advantage of automation efficiencies with our customers. Implementing this technology has enabled us to remain competitive in the market." (IT director at the interviewed organization)

  o **Efficiency gains.** Streamlining the business process and consolidating the core team dealing with the data capture of incoming requests into a single location allowed the company to reduce the overall staff by about 30%. More requests can now be handled by fewer staff; fewer documents get lost or misplaced; inquiries can be answered more easily; and the need for any hard copy search and retrieval is decreased. Our analysis indicates that this benefit has a three-year risk-adjusted PV of approximately $11.9 million.

  o **Savings on printing and postage costs.** The company now sends more than 4,000 customer invoices and supporting documents per day via email instead of regular mail. These cost savings have an estimated three-year risk-adjusted PV of approximately $1.1 million.

  o **Improved customer service.** IBM Datacap document processing technology helps the organization accurately route, deliver, and track shipments, assuring that all business processes are met as the services are expedited and delivered in the correct amounts, to the exact location, and on time. The Datacap application thus helped establish a more consistent, streamlined delivery of information that led to an improved user experience. It also enabled the business to remain competitive by utilizing fast retrieval of information that decreased the time needed to address customer requests. The interviewed company considers this a soft benefit and did not have any supporting metrics available, so it has not been quantified in this case study. Nevertheless, internal process improvements can lead to external superior customer service, improving brand loyalty and increasing customer retention rates — which could ultimately lead to higher annual customer value that equals or even exceeds the value from efficiency gains. Readers should therefore determine how much this benefit would be worth in their case.

- **Costs.** To achieve the above benefits, the interviewed company invested approximately $9.4 million over a three-year period. Costs included:

  o **Datacap software costs.** One main component of this application is the Datacap software. These software costs have a three-year risk-adjusted PV of approximately $1.2 million for the interviewed organization.

  o **Datacap implementation costs.** The Datacap solution was fully implemented in seven months using both internal resources and professional services. The corresponding implementation costs have a three-year risk-adjusted PV of approximately $440,000.

  o **Related software and implementation costs.** Besides the Datacap solution, the company had to invest in ECM and email workflow solutions. The resulting software and implementation costs have a three-year risk-adjusted PV of approximately $890,000.

  o **Hosting and storage costs.** The interviewed organization uses its own IT department to host about 75 servers and manage about 5 TB of data storage space. The IT department charges these costs back to the business using internal rates that include the leasing, maintenance, and support of all equipment. For the

interviewed company, these hosting and storage costs have a three-year risk-adjusted PV of approximately $6.3 million.

o   **Internal support and optimization costs.** The interviewed organization created a new team in charge of support and optimizations with regard to all Datacap solutions. The estimated internal labor costs for the Datacap application have a three-year risk-adjusted PV of approximately $500,000.

Figure 1 summarizes the yearly and cumulative cash flow; Figure 2 shows the breakdown of the benefit and cost categories for the interviewed organization.

Figure 1

Three-Year, Risk-Adjusted Cash Flow
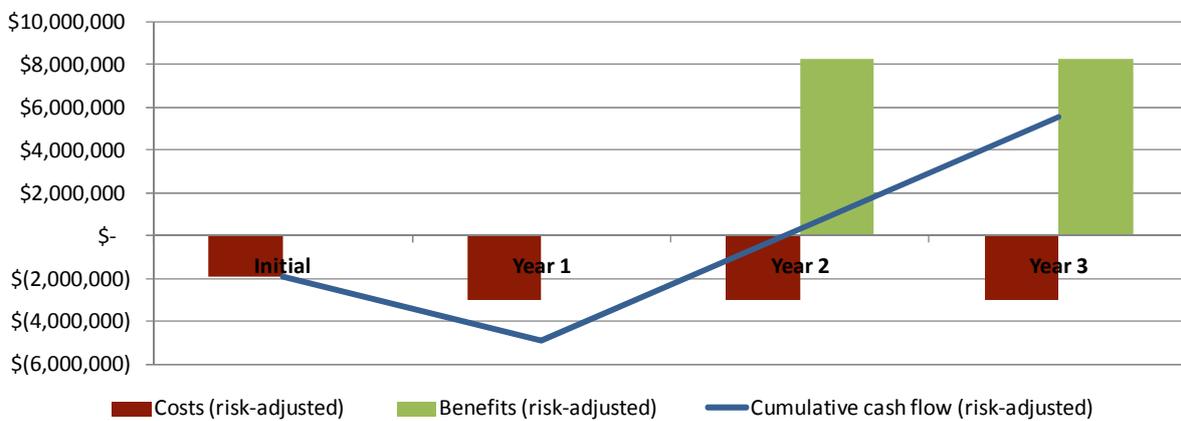
Source: Forrester Research, Inc.

Figure 2

Three-Year, Risk-Adjusted Costs And Benefits

Source: Forrester Research, Inc.

Factors Affecting Benefits And Costs

Table 1 illustrates the risk-adjusted financial results that the interviewed organization achieved. The risk-adjusted values take into account any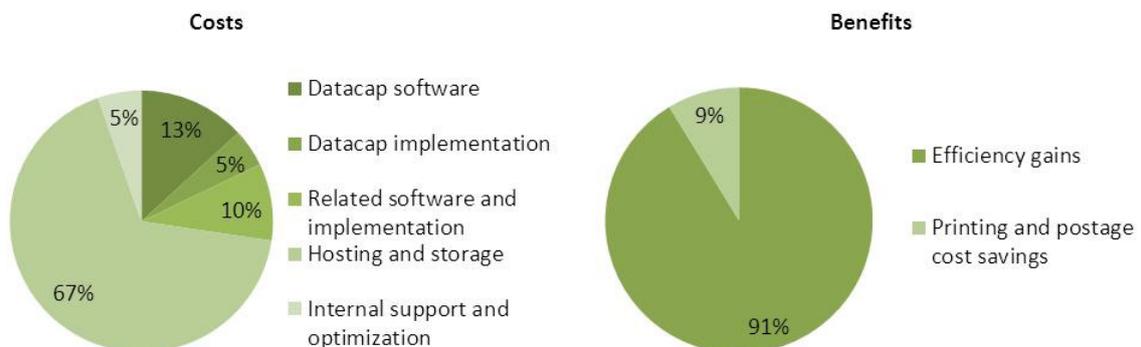 potential uncertainty or variance that exists in estimating the costs and benefits, which produces more conservative estimates. The following factors may affect the financial results that an organization may experience:

- **Number of end users.** The number of end users who rely on business processes streamlined by the new capture solution defines to what extent the optimized business processes have a positive impact on daily operations.

- **Current regulations.** Current regulations might have an impact on the degree to which the usage of paper can be reduced.

Disclosures

The reader should be aware of the following:

- The study is commissioned by IBM and delivered by the Forrester Consulting group.

- Forrester makes no assumptions as to the ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in the Datacap solution.

- IBM reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

- The customer names for the interviews were provided by IBM.

TEI Framework And Methodology

Introduction

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ framework for those organizations considering implementing a Datacap solution. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

Approach And Methodology

Forrester took a multistep approach to evaluate the impact that Datacap can have on an organization (see Figure 3). Specifically, we:

- Interviewed IBM marketing and sales personnel and Forrester analysts to gather data relative to Datacap and the marketplace for information capture solutions.

- Interviewed one organization currently using Datacap to obtain data with respect to costs, benefits, and risks.

- Constructed a financial model representative of the interviews using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interviews.

Figure 3

TEI Approach
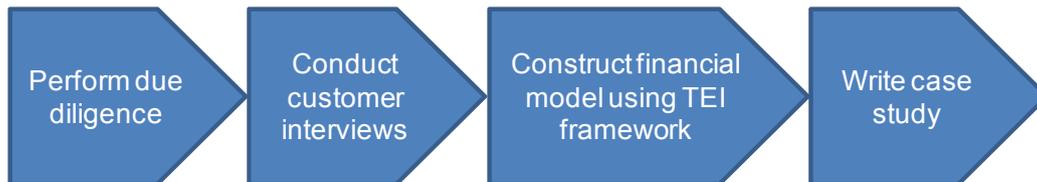
Source: Forrester Research, Inc.

Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves the purpose of providing a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

Analysis

Interview Highlights

One organization, a large logistics services company, was interviewed for this study. The company has been using IBM Datacap Taskmaster Capture in production for more than five years. It started with one Datacap application for one specific business process and then was extended to other operational business units. At the time of the interviews, the organization was running a total of six Datacap applications in production and was in the process of rolling out two more — all for different operational business groups.

The Datacap application that this business case focuses on is used by a customs brokerage group that is responsible for clearing goods through customs barriers for importers. This involves preparing the right types of documents depending on the nature of the goods; calculating taxes, duties, and excises; and facilitating communications between the company's clients and governmental authorities. This Datacap application was developed in late 2009 and has been fully in production since May 2010.

On average, the company has to handle between 700,000 and 800,000 incoming documents per month; and the large majority of requests come as email attachments of different formats.

> *"About 98% of all of the requests that we do come through email. And they come in a variety of different types of document: Word documents, Excel documents, PDFs, TIFFs, and RTFs."* (IT director)

Initially, the application was rolled out on thin clients in 60 different offices across the country, but soon the decision was made to consolidate the efforts in one single location.

> *"Each of the US offices receives emails from its customers and then begins to process its individual customers' documents locally. By moving this to a consolidated place, all the requests can now be automatically processed through the Datacap solution and be on the staff's desk the same day. We took actions that were being repeated in the field and consolidated them into one. It now has become more of an assembly-line process."* (IT director)

Due to this consolidation, the company gained efficiency and was able to reduce the overall number of staff by 30%. But the organization also realized savings on printing, storage, and postage costs.

> *"What made another huge difference is the savings on printing and postage costs. All the documents are now electronic and we can send our invoices to our customers via email."* (IT director)

Overall, the Datacap solutions enabled the business to remain competitive.

> *"All in all, the different Datacap applications that we have rolled out have helped position us to take advantage of the automation efficiencies with our customers. The implementation of this technology has enabled us to remain competitive in the market."* (IT director)

In the future, the company is looking for more automated data extractions and intends to realize more savings from becoming a truly paperless organization.

> *"We are required to keep all documents for about 10 years. We are not yet classified as a paperless company, but that's the overall goal. With this project, we took the first step in this direction; the potential storage cost savings are significant."* (IT director)

Framework Assumptions

Table 2 provides the salary assumptions that Forrester used in this analysis.

Table 2

Model Assumptions

Ref.	Metric	Value
A1	Average fully loaded annual salary rate (IT professional)	$100,000
A2	Average fully loaded annual salary rate (business staff)	$40,000

Source: Forrester Research, Inc.

The discount rate used in the PV and NPV calculations is 10% and time horizon used for the financial modeling is three years. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are

urged to consult with their respective company's finance department to determine the most appropriate discount rate to use within their own organizations.

Important note: While the interviewed organization is running several applications based on Datacap, this business case only focuses on one of those implementations.

Costs

This section describes and lists the incremental costs over three years incurred by the interviewed organization for deploying and maintaining an application based on Datacap.

Datacap Software Costs

The Datacap license and associated annual software maintenance costs related to the application are indicated in Table 3.

Table 3

Datacap Software Costs

Ref.	Costs	Value/ calculation	Initial	Year 1	Year 2	Year 3	Total
B1	Datacap license fees		$600,000				
B2	Datacap annual maintenance fees			$250,000	$250,000	$250,000	
B3	Datacap software costs	B1+B2	$600,000	$250,000	$250,000	$250,000	$1,350,000

Source: Forrester Research, Inc.

Datacap Implementation Costs

Table 4 shows the initial implementation costs related to the Datacap solution. The interviewed organization paid $200,000 in professional services fees; the equivalent of four full-time in-house resources worked on the project for about seven months, from initial requirements gathering to full rollout.

Table 4

Datacap Implementation Costs

Ref.	Costs	Value/ calculation	Initial	Year 1	Year 2	Year 3	Total
C1	Professional services		$200,000				
C2	Number of staff	4					
C3	Duration of project in months	7					
C4	Average fully loaded monthly salary rate (IT professional)	$8,300 (=A1/12)					
C5	Internal labor costs	C2*C3*C4	$232,400				
C6	Datacap implementation costs	C1+C5	$432,400	$0	$0	$0	$432,400

Source: Forrester Research, Inc.

Related Software And Implementation Costs

The Datacap solution that the interviewed organization implemented not only relies on the Datacap solution, but also requires ECM and email workflow solutions. Table 5 indicates the equivalent software license fees, implementation costs, and incremental annual software maintenance costs.

Table 5

Related Software And Implementation Costs

Ref.	Costs	Value/ calculation	Initial	Year 1	Year 2	Year 3	Total
D1	ECM license costs		$100,000				
D2	ECM implementation costs		$500,000				
D3	Email workflow solution		$200,000				
D4	Annual maintenance fees			$20,000	$20,000	$20,000	
D5	Related software and implementation costs	D1+D2+D3+D4	$800,000	$20,000	$20,000	$20,000	$860,000

Source: Forrester Research, Inc.

Hosting And Storage Costs

The business solution runs on a total of about 75 servers (25 Datacap Taskmaster Capture and 50 IBM ECM servers) and uses around 5 TB of storage space. The internal IT department leases, maintains, and supports these servers. The internal hosting charges and incremental storage costs for the interviewed organization are indicated in Table 6. Readers are encouraged to determine what hosting and storage prices would apply to their organizations.

Table 6

Hosting And Storage Costs

Ref.	Costs	Value/ calculation	Initial	Year 1	Year 2	Year 3	Total
E1	Monthly hosting charges	$160,000					
E2	Monthly storage costs	$49,000					
E3	Hosting and storage costs	(E1+E2)*12	$0	$2,508,000	$2,508,000	$2,508,000	$7,524,000

Source: Forrester Research, Inc.

Internal Support And Optimization

The interviewed organization created a team of six full-time employees whose primary goal is to support and optimize the various ECM applications. This analysis assumes that the part related to this application is worth $200,000 per year.

Total Costs

Table 7 summarizes the incremental non risk-adjusted costs incurred by the interviewed organization for deploying and maintaining this application. In total, the interviewed organization spent approximately $10.8 million over three years.

Table 7

Total Costs (Non-Risk-Adjusted)

Ref.	Costs	Initial	Year 1	Year 2	Year 3	Total
F1	Datacap software costs	$600,000	$250,000	$250,000	$250,000	$1,350,000
F2	Datacap implementation costs	$432,400	$0	$0	$0	$432,400
F3	Related software and implementation costs	$800,000	$20,000	$20,000	$20,000	$860,000
F4	Hosting and storage costs	$0	$2,508,000	$2,508,000	$2,508,000	$7,524,000
F5	Internal support and optimization	$0	$200,000	$200,000	$200,000	$600,000
F6	**Total costs**	**$1,832,400**	**$2,978,000**	**$2,978,000**	**$2,978,000**	**$10,766,400**

Source: Forrester Research, Inc.

Benefits

The interviewed organization reported quantifiable benefits in terms of efficiency gains due to processes improvements and printing and postage cost savings. These benefit categories are discussed below.

Streamlined And Consolidated Process

Streamlining the business process and consolidating the core team dealing with the data capture of incoming requests into one single location enabled the company to reduce the overall number of staff by about 30%.

To take into account the ramp-up phase, during which the organization starts using the new solution and finalizes the internal reorganization, no benefits are included in Year 1. This benefit has a total three-year, non-risk-adjusted value of $16 million, as indicated in Table 8.

Table 8

Streamlined And Consolidated Process

Ref.	Metric	Value/ calculation	Year 1	Year 2	Year 3	Total
G1	Number of FTEs	200				
G2	Average fully loaded annual salary rate (clearing agent)	$40,000				
G3	First-year ramp-up		0%			
G4	Streamlined and consolidated process	G1*G2 (*G3 for Year 1)	$0	$8,000,000	$8,000,000	$16,000,000

Source: Forrester Research, Inc.

Printing And Postage Cost Savings

Due to the fact that all documents are now available in electronic format, the company is now able to send its invoices, including all supporting documentation, to its customers via email. On average, the interviewed organization sends 4,200 invoices per day. Our analysis conservatively estimates printing and postage cost savings of $0.50 per invoice.

To take into account the ramp-up phase during which the organization starts using the new solution, no benefits are included in Year 1. This benefit has a total three-year, non-risk-adjusted value of $1.5 million, as indicated in Table 9.

Table 9

Printing And Postage Cost Savings

Ref.	Metric	Value/ calculation	Year 1	Year 2	Year 3	Total
H1	Average number of invoices per day	4,200				
H2	Average number of invoices per year	H1*365	1,528,800	1,528,800	1,528,800	
H3	Printing and postage cost per invoice	$0.50				
H4	First-year ramp-up		0%			
H5	Printing and postage cost savings	H2*H3 (*H4 for Year 1)	$0	$764,400	$764,400	$1,528,800

Source: Forrester Research, Inc.

Total Benefits

The interviewed organization achieved total benefits of approximately $17.5 million over the three-year period. Table 10 shows the total non-risk-adjusted benefits that were quantifiable for this study.

Table 10

Total Benefits (Non-Risk-Adjusted)

Ref.	Benefits	Year 1	Year 2	Year 3	Total
I1	Streamlined and consolidated process	$0	$8,000,000	$8,000,000	$16,000,000
I2	Printing and postage cost savings	$0	$764,400	$764,400	$1,528,800
I3	**Total benefits**	**$0**	**$14,764,400**	**$14,764,400**	**$17,528,000**

Source: Forrester Research, Inc.

Flexibility

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some future additional investment. This provides an organization with the "right" or ability to engage in future initiatives, but not the obligation to do so. There are multiple scenarios in which a customer might choose to deploy data capture capabilities and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

While data for calculating the monetary value of concrete flexibility options was not available at the time of publication, the interviewed customer highlighted that data capture for the customs brokerage group bears more potential benefits for the company in the future. The company is particularly looking at:

- **Reduction of physical storage space.** Government regulations still require the company to keep paper records of all documents. On average, the company has to store about 1.5 million documents per month. This project is considered the first step toward becoming a paperless company and should result in storage cost savings.

- **More automated data captures.** Due to the variability of incoming documents, the data that is automatically captured today is very limited. The company intends to make more use of these capabilities in the future.

Risk

Forrester defines two types of risk associated with this analysis: implementation risk and impact risk. "Implementation risk" is the risk that a proposed investment in Datacap may deviate from the original or expected requirements, resulting in higher costs than anticipated. "Impact risk" refers to the risk that the business or technology needs of the organization may not be met by the investment in Datacap, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing investment and impact risk by directly adjusting the financial estimates results in more meaningful and accurate estimates and a more accurate projection of ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as "realistic" expectations , as they represent the expected values considering risk.

The following implementation risks that affect costs have been identified as part of this analysis:

- The original software licenses were contracted with Datacap, but the indicated license fees and maintenance costs are based on equivalent IBM pricing information and might be higher than originally estimated.

- The amount of internal effort required to implement the solution depends on the complexity of the company's processes and environment and might be higher than originally estimated.

- The share of ECM software license and maintenance costs that can be attributed to this application are based on assumptions and might be higher than originally estimated.

- The share of hosting charges that are can be attributed to this application are based on assumptions and might be higher than originally estimated.

- The share of support and optimization costs that can be attributed to this application are based on assumptions and might be higher than originally estimated.

The following impact risks that affect benefits have been identified as part of the analysis:

- The savings with regard to reduced or redeployed staff depends on the ability of the organization to reduce or reallocate these resources efficiently.

- The amount of postage and printing cost savings depends on the amount of invoices that can be sent by email and might be lower than originally estimated.

Table 11 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur within the current environment. The risk-adjusted value is the mean of the distribution of those points.

Table 11

Cost And Benefit Risk Adjustments

Costs	Low	Most likely	High	Mean
Datacap software costs	98%	100%	105%	101%
Datacap implementation costs	98%	100%	105%	101%
Related software and implementation costs	100%	100%	115%	105%
Hosting and storage costs	98%	100%	105%	101%
Internal support and optimization	98%	100%	105%	101%
Benefits	**Low**	**Most likely**	**High**	**Mean**
Streamlined and consolidated process	80%	100%	103%	94%
Printing and postage cost savings	80%	100%	103%	94%

Source: Forrester Research, Inc.

Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Costs and Benefits sections can be used to determine the ROI, NPV, and payback period for the organization's investment in the application based on the IBM Datacap Taskmaster Capture solution. These are shown in Table 12.

Table 12

Cash Flow: Non-Risk-Adjusted

Cash flow: Original estimates						PV
	Initial	Year 1	Year 2	Year 3	Total	
Costs	($1,832,400)	($2,978,000)	($2,978,000)	($2,978,000)	($10,766,400)	($9,238,245)
Benefits	$0	$0	$8,764,400	$8,764,400	$17,528,800	$13,828,129
Total	($1,832,400)	($2,978,000)	$5,786,400	$5,786,400	$6,762,400	$4,589,884
ROI	50%					
Payback period	23 months					

Source: Forrester Research, Inc.

Table 13 shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk adjustment values from Table 11 in the Risks section to the cost and benefit numbers in Tables 7 and 10.

Table 13

Cash Flow : Risk-Adjusted

Cash flow: Risk-adjusted estimates						PV
	Initial	Year 1	Year 2	Year 3	Total	
Costs	($1,882,724)	($3,008,580)	($3,008,580)	($3,008,580)	($10,908,464)	($9,364,617)
Benefits	$0	$0	$8,238,536	$8,238,536	$16,477,072	$12,998,441
Total	($1,882,724)	($3,008,580)	$5,229,956	$5,229,956	$5,568,608	$3,633,824
ROI	39%					
Payback period	24 months					

Source: Forrester Research, Inc.

IBM Datacap Taskmaster Capture: Overview

According to IBM, Datacap Taskmaster Capture is used in a wide variety of industries, including financial services, insurance, corporate accounts payable, government, healthcare, transportation, and publishing. Customer applications capture mortgage documents, applications, invoices, tax returns, tax documents, public safety documents, registrations, custom documents, broker orders, and other documents. Datacap enables organizations to quickly and easily capture and extract key information from documents and convert the documents to images that are stored electronically. Datacap features include:

- **A complete end-to-end capture solution.** Datacap reduces labor and paper costs while increasing data accuracy and accelerating document processing by automating the capture of documents from scanners, multifunction printer (MFP) devices, email and other electronic attachments, as well as previously scanned images in local or network folders. Direct integration with IBM's ECM repositories, including FileNet Content Manager, IBM Content Manager, FileNet Image Services, and IBM Content Manager OnDemand, provides a complete platform for centralized, departmental, and distributed capture for the enterprise. Datacap can also be used with non-IBM repositories, including OpenText LiveLink, EMC Documentum, and Microsoft SharePoint.

- **Simplified packaging.** Datacap offers several comprehensive packages to address companies' capture requirements. The base capture package provides all of the necessary client, server, and image processing, document classification, and recognition engines necessary for automatic capture of machine print, hand print, optical marks such as checkboxes and barcode data from any document type with delivery to ECM repositories. Another package provides preconfigured support for capture of accounts payable invoices. Streamlining capture for these applications provides customers with significant cost savings, reduced errors, and faster processing.

- **Rules-based architecture.** Datacap's unique rules-driven architecture provides control over the entire capture process, from scanning and image processing to validation and formatting for export. Other capture products only provide validation rules. With Datacap, every capture processing step may be customized to meet business requirements. And with deployment across centralized thick clients and remote thin clients, customers are provided implementation flexibility that can help increase efficiency, speed input, and reduce the costs of shipping.

- **Scalable to support high document volumes.** Datacap provides a true client/server architecture that provides multiple approaches to achieve scalability, which can be used in various combinations. Features such as automatic document identification and automatic indexing support high volume scanning, quickly delivering information to imaging and content management systems. The Rulerunner service provides core capture capabilities decoupled from the Taskmaster capture platform. As volumes increase, scaling becomes easier through the use of additional Rulerunner services to handle increased workloads. Distributed capture further enables scaling by adding remote capture locations.

Appendix A: Total Economic Impact™ Overview

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services

to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the form of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections, and 2) the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as "triangular distribution" to the values entered. At minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprisewide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix B: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organization to determine the most appropriate discount rate to use in their own environment.

Net present value (NPV): The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

Present value (PV): The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate (shown in Framework Assumptions section) at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Table [Example]
Example Table

Ref.	Category	Calculation	Initial cost	Year 1	Year 2	Year 3	Total

Source: Forrester Research, Inc.

Appendix C: Related Forrester Research

"Capture If You Can," Forrester Research, Inc., March 18, 2010.

Appendix D: Endnotes

[1] Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information on risk, please see page 13.