The Total Economic Impact™ Of IBM Application Discovery And Delivery Intelligence

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ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

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Benefits And Costs

Application management and developer cost savings:
$2.56 million

New and retained revenue:
$1.31 million

Total investment costs to begin enabling benefits:
$126,000

Executive Summary

IBM's Application Discovery and Delivery Intelligence (ADDI), formerly EZSource, helps its customers with application discovery and delivery, particularly with mainframe applications. ADDI helps map the interconnections between modules, highlighting application changes to improve visibility in the application development processes. IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by implementing ADDI. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of ADDI in their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed a customer with several years of experience using ADDI. The organization, a mainframe-based software services provider, has used ADDI to reduce solution development costs and improve customer service offerings. While a service organization is the focus here, all organizations can find and use examples from this study: Many organizations that support legacy mainframe applications likely face similar issues related to maintaining efficient development, modernizing offerings, and managing customers.

Prior to using ADDI, the interviewed customer found itself with robust, business-critical applications but also an aging pool of experts. Applications were hard to manage, especially if the original developer was not available. Modern interfaces were available but often kept to basic functions since deeper application integration would take much more time for planning, development, and testing. The organization has adopted ADDI into its application development and management processes and is able to deliver agile and improved application services to its customers while reducing development time and costs.

Key Findings

Quantified benefits. The following three-year, risk-adjusted, and quantified benefits are representative of the interviewed company:

› **Application development and management time reduced by 25%.** Standard application development support would take about 10 full-time equivalents (FTEs). With ADDI, the organization can reduce that time by 25% and hire fewer developers for planned expansion.

› **Improved application profitability by 20%.** Beyond cost savings, application development with ADDI has enabled additional revenue. With ADDI, the organization is able to provide better services and application features (including modern interfaces for mainframe applications) to help get updates out more quickly, leading to more sales from existing customers as well as more new customers.

› **At least one major client retained each year with the improved services that include ADDI.** With the services enabled by ADDI, enabling the organization to breathe new life into mainframe applications, several customers thought they would have to migrate their mainframe applications to another platform. But the organization, armed with ADDI, can better plan and deliver application updates to help customers meet their needs with the current mainframe platform.

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ROI
145%

Benefits
$3,878,679

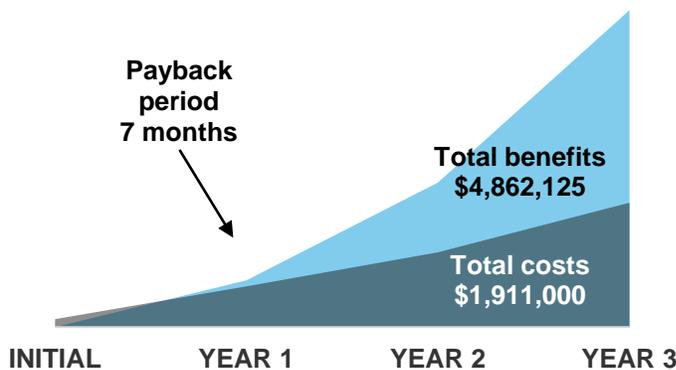**Payback**
6.9 months

Costs
$1,585,232

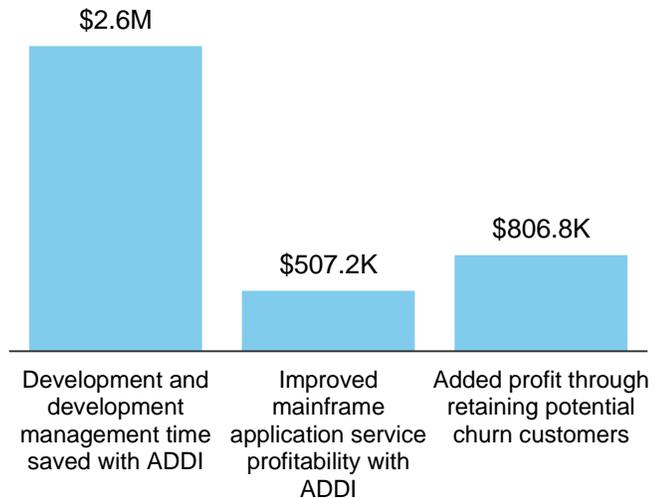**Costs.** The interviewed organization experienced the following risk-adjusted costs:

› **Planning and implementation costs.** The organization envisioned a service where it would host its customers' mainframe applications and provide any support, management, and application development as a service. To build out this service, the organization invested in IT administration and development resources to help implement the solution, and it also dedicated some data center space.

› **Ongoing licensing and resource costs.** As part of its service, the organization has licensed ADDI to manage all application discovery and documentation processes. The organization has also invested in some additional application developer resources to ensure it always has enough capacity to meet demand (though many developers are added to the organization's team as a part of the service contract with its customers).

Forrester's interview and subsequent financial analysis found that the organization experienced a risk-adjusted present value (PV) of benefits of $3.88 million over three years versus a risk-adjusted PV of costs of $1.59 million, adding up to a net present value (NPV) of $2.29 million, an ROI of 145%, and a payback of less than seven months.

Three-Year Financial Summary (Risk-Adjusted)

Payback period 7 months

Total benefits $4,862,125

Total costs $1,911,000

INITIAL   YEAR 1   YEAR 2   YEAR 3

Three-Year, Risk-Adjusted NPV Of Benefits

$2.6M

$507.2K

$806.8K

| Development and development management time saved with ADDI | Improved mainframe application service profitability with ADDI | Added profit through retaining potential churn customers |

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TEI Framework And Methodology

From the information provided in the interview, Forrester has constructed a Total Economic Impact (TEI) framework for those organizations considering implementing IBM ADDI.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that IBM ADDI can have on an organization. Specifically, we:

DUE DILIGENCE
Interviewed IBM stakeholders and Forrester analysts to gather data relative to IBM ADDI.

CUSTOMER INTERVIEW
Interviewed an organization using ADDI to obtain data with respect to costs, benefits, and risks.

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interview using the TEI methodology, and risk-adjusted the financial model based on issues and concerns of the interviewed organization.

CASE STUDY
Employed four fundamental elements of TEI in modeling IBM ADDI's impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

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

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential 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 IBM ADDI.

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.

IBM provided the customer names for the interview but did not participate in the interview.

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The IBM ADDI Customer Journey

BEFORE AND AFTER THE ADDI INVESTMENT

Interviewed Organization

For this study, Forrester conducted an interview with an IBM ADDI customer. This organization is a European technology company that has a significant services business, including a smaller but well-regarded practice focused on mainframe platforms. Forrester interviewed a program manager with this mainframe team.

Key Challenges

The organization was faced with an aging pool of developers who were knowledgeable and interested in the mainframe platform, as well as many customers that, for a variety of reasons, were initiating plans to migrate mainframe applications to another platform (for example, they saw the same aging developer pool and were worried about finding developers, or the costs of managing the mainframe application were rising).

› **Developer costs were rising.** As the average mainframe application developer age was rising, more developers were changing careers or retiring — and a traditional mainframe platform was rarely a focus for new, younger developers.

› **Support costs were rising.** The organization was faced with increased support requests, as its customers were also faced with losing developers who were retiring and expensive to replace (or just hard to find).

› **Mainframe applications were often difficult to modernize**. Web and mobile interfaces were available, but without understanding the whole application and how modules interact, making changes could be risky.

› **Customers were considering a change.** The organization's customers were faced with rising costs, hard-to-find developer resources, aging interfaces, and a clear reality that their legacy applications need to support more mobile and cloud solutions. Many of these customers told the organization that they would (reluctantly) start investigating replatforming their applications to another mainframe solution, or completely redevelop their applications in a more modern language. Customers realized this would be expensive but saw no other option.

Solution Requirements

The interviewed organization looked for a solution that could help breathe new life into mainframe applications for its customers. A solution that could help improve visibility into application modules to better understand interactions and dependencies between them could:

› Enable more productive development and testing processes.

› Reduce the risk of development modifications breaking application functionality.

> "People say that these [mainframe] applications are not modern — in fact, they are very modern and technologically advanced. We help our customers to continue to improve and gain value from their business-critical applications."
>
> — *Program manager, technology company*

The organization saw a future with higher developer costs along with a customer base considering platforms that were perceived to be more modern.

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› Enable more interesting development opportunities that younger developers would pursue.

› Create a business opportunity that the organization could leverage to generate new value for itself and its customers.

Key Results

The interview revealed that key results from the ADDI investment include:

› **Reduced mainframe application development and management time.** With a development and testing environment that includes ADDI, the organization could reliably host and manage more customer applications. The organization could bring on the existing development team (the "institutional memory" expertise in the specific mainframe application development) but could also safely add new developers to the team. ADDI helped everyone better document and understand the application interactions and develop new features and interfaces, with much less ramp-up time.

› **Improved profitability from the mainframe business.** The organization invested in some data center resources that included ADDI. It began taking on the application management and development, and even the customer's existing development team, as a hosted service. Customers could access their critical applications via cloud services while offloading much of the headache of trying to maintain a dedicated application team in house. The organization could pool developer resources, leverage the cost savings opportunities of ADDI, and deliver a solution that was both profitable for the organization and cost effective for customers. As the organization shared initial customer successes, new customers signed on, with more expected in the future.

› **Reduced mainframe customer churn.** In addition to moving customers to the new service, the organization has protected its business with all its existing customers. Customers that considered replatforming or completely redeveloping their applications would mean significant lost business for the organization. While they may not have signed on to the service yet, these customers now have confidence in a mainframe platform road map that can support their applications for the foreseeable future. "Our expertise helps customers keep and even leverage more value from the mainframe applications they know they need," said the program manager at the technology company.

> "Our expertise helps customers keep and even leverage more value from the mainframe applications they know they need."
>
> — *Program manager, technology company*

Key assumptions

- Enterprise organization
- Team of about 10 developers and managers focused on the service at service inception
- 50% operating margin from hosted services

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Financial Analysis

QUANTIFIED BENEFIT AND COST DATA AS APPLIED TO THE INTERVIEWED ORGANIZATION

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Development and development management time saved with ADDI	$494,000	$988,000	$1,729,000	$3,211,000	$2,564,643
Btr	Improved mainframe application service profitability with ADDI	$63,750	$178,500	$401,625	$643,875	$507,222
Ctr	Added profit through retaining potential churn customers	$159,375	$331,500	$516,375	$1,007,250	$806,813
	Total benefits	$717,125	$1,498,000	$2,647,000	$4,862,125	$3,878,679

Reduce Development And Development Management Time And Costs

Mainframe applications are often large, sprawling sets of functions, interfaces, and modules that have been developed over time and can be difficult for newcomers to understand and for even experienced developers to modify without have an impact on some other part of the applications. But on the other hand, they deliver important, business-critical results for many businesses. It's where their critical data and transactions reside. While mainframes are the first platform choice less often than in past years, existing mainframe applications provide significant value to businesses. Therefore, businesses can't just retire them, and redeveloping these applications would be difficult, invasive, and very expensive. Organizations first and foremost want to keep using their mainframe applications while leveraging new mobile and web interfaces and technologies, but even minor updates could become long, difficult, and expensive application development projects.

The organization felt this pain both for itself and for its mainframe customers. The primary source of this pain stemmed from developers not being able to start working with an existing application and understand the style, structure, and intent of lines, segments, and modules of code — because they had not worked with the application for a long time or developed it themselves. For someone new to the application and tasked with writing a new feature, the code can be as hard to understand as *Finnegans Wake.* "Developers can struggle when they have to work in an area they haven't touched for a while. ADDI helps greatly here. A new developer we brought in said these tools make life a lot easier," said the program manager at the technology company.

But the organization can use ADDI to effectively document application interactions and identify dependencies between modules — so now a new developer can much more easily know whether writing a new feature or interface will have an impact on other modules. The organization identified improvements in:

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the organization expects risk-adjusted total benefits to be a PV of more than $3.8 million.

"Developers can struggle when they have to work in an area they haven't touched for a while. ADDI helps greatly here. A new developer we brought in said these tools make life a lot easier."

— *Program manager, technology company*

Benefits include reduced development and application management costs, increased deal size, and retained revenue.

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› **Developer efficiency.** Developers were able to more quickly understand the mainframe application and any data or logic interdependencies. They are able to develop new modules more quickly that need less testing and result in fewer errors.

› **Application management efficiency.** Development managers are able to plan mainframe application needs better. They can find and hire developers, more often meet the needs of application users, and spend less time on support issues.

Mainframe applications included in this analysis are typically large to very large and connect to many systems within a business, so they are not as common as other types of applications. The organization started small in the first year and has planned and expected growth in future years. Inputs that drive this benefit, based on the interviewed organization, include:

› Two managed applications in Year 1, growing to four and seven applications by Year 2 and Year 3.

› Half of these applications are considered "large" (like an enterprise app), and the other half are "normal" (still critical but not as large).

Year 1: two applications managed on the hosted service
Year 2: four apps
Year 3: seven apps

	Reduce Development And Development Management Time And Costs — Calculation Table				
REF.	**METRIC**	**CALC.**	**YEAR 1**	**YEAR 2**	**YEAR 3**
A1	Application managed by the organization		2	4	7
A2	Applications considered "normal" versus "large"		50%		
A3	New modules or change requests per application per year, on average		12		
A4	Average development time to complete a project with ADDI (hours; normal sized)		300		
A5	Average development time to complete a project with ADDI (hours; large sized)		1,000		
A6	Total development and dev management hours per year with ADDI	A1 * A2 * A3 * A4 + A1 * (1-A2) * A3 * A5	15,600	31,200	54,600
A7	Estimated amount of development and dev management time saved with ADDI		25%		
A8	Estimated development and dev management hours per year without ADDI	A6 / (1-A7)	20,800	41,600	72,800
A9	Estimated development and dev management hours saved with ADDI	A8-A6	5,200	10,400	18,200
A10	Average developer hourly salary (fully burdened)		$100		
At	Development and development management time saved with ADDI	A9*A10	$520,000	$1,040,000	$1,820,000
	Risk adjustment	↓5%			
Atr	Development and development management time saved with ADDI (risk-adjusted)		$494,000	$988,000	$1,729,000

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- On average, 12 application feature requests and/or new modules are developed each year per application.

- With ADDI, a normal application requires 300 hours to develop each feature request or module. A large application requires 1,000 hours for each.

- Before ADDI, application development and management time took 25% longer.

- The average developer or developer manager salary is $100 per hour (fully burdened), or about $208,000 per year.

Other development best practices and technology tools have also helped improve development time even more. "We have to be efficient in what we do, to encourage younger people to join our organization," said the program manager at the technology company. To help compensate for any minimization of the impact from other areas, a risk adjustment has been applied, in case any of the inputs or the direct ADDI benefit improvement factor have been overestimated.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted present value of $2.6 million.

Improved Mainframe Application Service Profitability From Better Application Visibility

"ADDI has certainly driven business for us," said the program manager for the technology company. With improved development and management, along with the ability to cost-effectively develop modern web and mobile interfaces for mainframe applications, more businesses are coming to the organization, and existing customers are expanding their use of the organization's services, leading to increased revenue and margin.

The organization has estimated that:

- It could count on $300,000 per year from each application migrated to the hosted service. That grew to $375,000 in Year 1 and is expected to grow to $435,000 in Year 3 based on expected business needs and other external factors.

- It managed two applications in Year 1, four in Year 2, and seven in Year 3 (as listed above).

- It can close larger and more customer contracts at a 25% to 45% improvement.

Since revenue and profit are influenced by many factors, a risk adjustment has been applied, reducing this beneft to allow for overstimated:

- Revenue per project.

- Impact on new revenue from ADDI.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted present value of $507,222.

> "We have to be efficient in what we do, to encourage younger people to join our organization."
>
> — *Program manager, technology company*

> "ADDI has certainly driven business for us."
>
> — *Program manager, technology company*

> Impact risk is the risk that the business or technology needs of the organization may not be met by the investment in ADDI, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

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Sales And Margin Growth From Better Application Visibility — Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
B1	Applications		2	4	7
B2	Revenue per application per year before ADDI		$300,000		
B3	Increase in application hosting project size with ADDI		25%	35%	45%
B4	Revenue per application per year with ADDI		$375,000	$405,000	$435,000
B5	Operating margin on hosted service		50%	50%	50%
Bt	Improved mainframe application service profitability with ADDI	B1 * B2 * B3 * B5	$75,000	$210,000	$472,500
	Risk adjustment	↓15%			
Btr	Improved mainframe application service profitability with ADDI (risk-adjusted)		$63,750	$178,500	$401,625

Retained Revenue And Margin

In addition to helping the organization recruit new and larger customers, the application management and development services based on a solution including ADDI helped some customers change their minds — retaining that revenue and margin for the business. "Our expertise helps customers keep and even leverage more value from the mainframe applications they know they need," said the program manager at the technology company. Some customers were (reluctantly) exploring replatforming or redeveloping their applications, but they now could stay with the organization and have confidence that their mainframe applications would remain useful and flexibile within the business.

Retained Revenue And Margin — Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
C1	New applications added to service each year		2	2	3
C2	Percentage of applications (and clients) potentially lost without ADDI		50%	50%	33%
C3	Applications lost each year without ADDI	C2 * C1	1	1	1
C4	Revenue per hosted application per year		$375,000	$405,000	$435,000
C5	Profit margin on application services		50%	50%	50%
Ct	Added profit through retaining potential churn customers (cumulative)	C * C4 * C5	$187,500	$390,000	$607,500
	Risk adjustment	↓15%			
Ctr	Added profit through retaining potential churn customers (risk-adjusted)		$159,375	$331,500	$516,375

The interviewed organization estimates that of the two to three applications added to the hosted service each year, at least one of those each year was a customer that would have left or never joined the service. However, the customers stays, at the increased revenue level of $375,000 to $435,000 per hosted application.

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As with the previous benefit, a risk adjustment has been applied to more conservatively measure this benefit, to allow for overestimated:

› Revenue per project.

› Impact on new revenue from ADDI.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted present value total of $806,813.

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement ADDI and later realize additional uses and business opportunities.

Based on the reality of the business and the organization's current market, it does not expect brand-new customers to arrive needing hosted mainframe application services. (In other words, the organization doesn't expect customers that aren't already users of mainframe applications, and these users will already be customers of some sort of support or maintenance offering.)

However, with hosted application management and development services that include support for modern interfaces, some new customer growth is possible, especially if the organization invests in new education and marketing efforts. This could lead to benefits based on revenue and margin per new hosted application.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

> Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional Investment. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to so.

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Total Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Dtr	Implementation costs for application service leveraging ADDI	$126,000	$0	$0	$0	$126,000	$126,000
Etr	Ongoing costs for application service leveraging ADDI	$0	$498,750	$525,000	$761,250	$1,785,000	$1,459,232
	Total costs (risk-adjusted)	$126,000	$498,750	$525,000	$761,250	$1,911,000	$1,585,232

Implementation Costs

To kick off its new business offering of hosted mainframe application management and development services, which includes ADDI, the organization required some planning and investment. Data center buildout was minimal (the organization already has data centers, and the required hardware took up very little space). Planning and implementation was a much larger effort, as shown in the cost table. Specifically, intial costs include:

› One thousand to 1,500 total hours of planning, testing and implementation, and training time — including time for planning and training on new processes and tools with each developer. However, as this is part of a new solution offering delivered by the organization, more planning and testing was likely required than if the organization only added ADDI to their development processes.

› About $20,000 in new hardware purchases and setup for the hosted application services, including ADDI.

Implementation projects can face a number of issues and unknowns, suggesting a high risk adjustment. However, as the organziation did not face major unplanned issues related to implemeting ADDI or its service, and its implementation likely required more planning, testing, and training (as part of a customer-facing solution offering), a small risk adjustment has been applied.

For these reasons, Forrester adjusted this cost upward by 5%, for a total implementation cost of $126,000.

> The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the interviewed organization expects risk-adjusted total costs to be a PV of more than $1.6 million.

Upfront costs include planning, implementation and training; annual costs include ADDI licensing and new developer salaries.

Implementation Costs

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
D1	Application service investment		$100,000			
D2	Data center buildout costs		$20,000			
Dt	Investment costs for application service leveraging ADDI	D1+D2	$120,000	$0	$0	$0
	Risk adjustment	↑5%				
Dtr	Investment costs for application service leveraging ADDI (risk-adjusted)		$126,000	$0	$0	$0

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Ongoing ADDI Costs As Part Of Application Services

Ongoing costs associated with using ADDI include the license and any investment in new developer resources. Inputs for these costs include:

› Annual costs were $75,000 to $125,000 per year for ADDI licensing. The rising costs reflect the growth in applications included in the management and development services that include ADDI.

› Two developers were hired at the inception of the service, and one more new developer is expected to be hired in Year 3.

› The organization has many more developers on staff, but they are hired as part of a new application management and hosting contract. In other words, when a customer is migrated from its own application management to the hosted management and development services provided by the organization, some or all of the customer's developer team moves to the organization's full-time development team. The services contract includes provisions for developer time that in essence pays for their salaries, so no new costs are accrued. However, the organization has decided to invest in some new developers, particularly at the start of the service to ensure a solid kickoff and implementation. These developer salaries are included as added investment costs. However, keep in mind that the development savings and revenue benefits far outweigh these costs.

Again, while developer requirements and salary estimates can be much higher than planned, other organizations not building out a full hosted service would be able to mitigate these risks.

To account for this, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted present value of $1,459,232.

> Implementation risk is the risk that a proposed investment in ADDI may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
Ongoing Costs						
E1	ADDI license costs			$75,000	$100,000	$125,000
E2	Total developers on service team			8	12	21
E3	Developers hired as part of application hosting migration			6	10	18
E4	Organization's investment in new development resources	E2 - E3		2	2	3
E5	Annual developer salary			$200,000	$200,000	$200,000
Et	Ongoing costs for application service leveraging ADDI	E4 * E5 + E1	$0	$475,000	$500,000	$725,000
	Risk adjustment	↑5%				
Etr	Ongoing costs for application service leveraging ADDI (risk-adjusted)		$0	$498,750	$525,000	$761,250

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Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)

Legend: Total costs, Total benefits, Cumulative net benefits
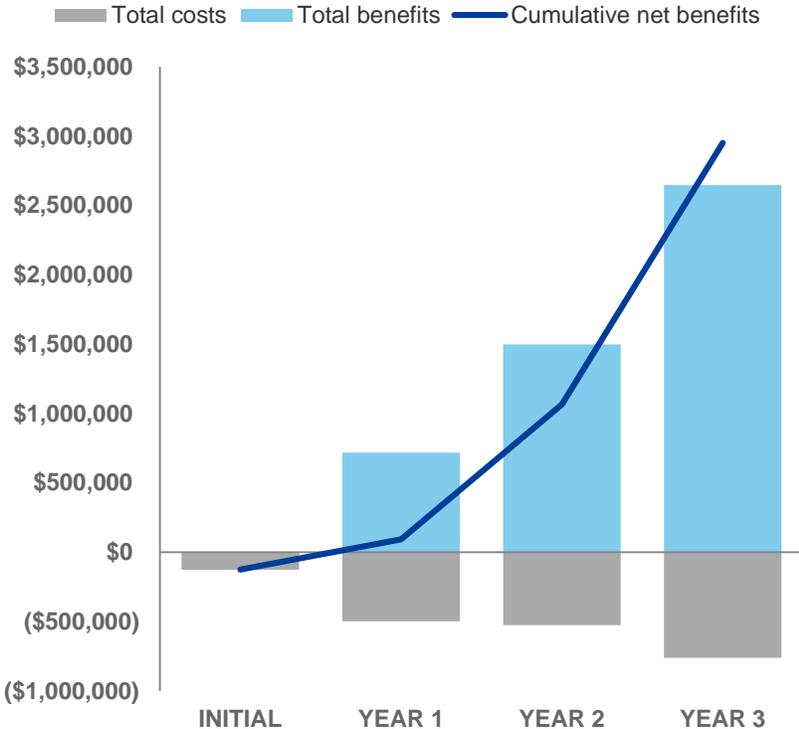
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the interviewed organization's investment in ADDI. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each benefit and cost section.

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	($126,000)	($498,750)	($525,000)	($761,250)	($1,911,000)	($1,585,232)
Total benefits	$0	$717,125	$1,498,000	$2,647,000	$4,862,125	$3,878,679
Net benefits	($126,000)	$218,375	$973,000	$1,885,750	$2,951,125	$2,293,447
ROI						145%
Payback period						6.9 months

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IBM ADDI: Overview

The following information is provided by IBM. Forrester has not validated any claims and does not endorse IBM or its offerings.

Application discovery tools are part of the software life-cycle management process. They can help you transform and support digital and hybrid cloud transformation and assist you in leveraging your time-tested code. With the powerful and innovative combined technology of Application Discovery and Delivery Intelligence, developers can easily scan and identify change management strategies to best understand and implement their digital transformation processes, API economy, hybrid cloud migration (via APIs), and cognitive DevOps. ADDI helps you:

❯ Analyze and understand enterprise application logic and change management.

❯ Speed the development and modernization of applications to the hybrid cloud.

❯ Drive digital transformation with greater efficiency and less risk.
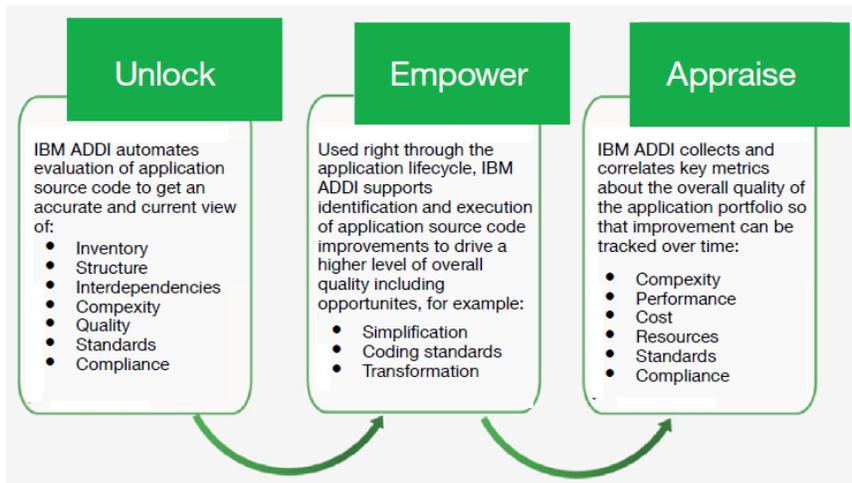
Source: IBM

Appendix A: Total Economic Impact

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.

Total Economic Impact Approach

Benefits represent the value delivered to the business by the product. The TEI methodology places 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.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

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 NPV of cash flows.

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.

RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost

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