

A Forrester Total Economic Impact™
Study Commissioned By IBM
March 2019

The Total Economic Impact™ Of The IBM Automation Platform For Digital Business

Cost Savings And Business Benefits
Enabled By IBM's Automation Platform

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ABOUT FORRESTER CONSULTING

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Executive Summary

IBM commissioned Forrester Consulting to examine the potential ROI enterprises may realize by implementing the IBM Automation Platform for Digital Business. The purpose of this Total Economic Impact (TEI) study is to provide readers with a framework to evaluate the potential financial impact of the IBM Automation Platform for Digital Business on their organizations.

ABOUT THE EVALUATED SOLUTION

The IBM Automation Platform for Digital Business is an integrated set of flexible capabilities designed to help organizations automate work at speed and scale. Capabilities include:

- › Using bots to automate human tasks.
- › Sharing, managing, and collaborating on content.
- › Designing and managing start-to-finish workflows.
- › Automating decisions with business rules.
- › Capturing, classifying, and extracting data from content.

Organizations that leverage IBM platform capabilities can see improvements such as task-time savings, error reduction, and faster and higher quality customer interactions.

ABOUT THE BUSINESS NEED AND IMPACT

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed a US bank, an IBM Automation Platform for Digital Business customer with several years of experience using IBM applications and services including Business Automation Workflow, Operational Decision Manager, and Blueworks Live.

Prior to using the IBM Automation Platform for Digital Business, the interviewed customer saw significant opportunities to improve critical customer and employee experiences. For example:

- › The bank wanted to improve the time it took to process loan applications — final steps like account setup and loan funding were especially time-consuming, and often took so long that potential customers would give up waiting and leave for other loan providers.
- › The bank wanted to improve its employee onboarding — new employees often started work without a badge, desk, laptop, or other necessary equipment, impacting training and productivity.

Using the IBM automation platform, the bank has automated dozens of workflows and processes throughout the organization, including loan application reviews and approvals, employee onboarding, and new account processing.

The bank has also been able to avoid considerable costs by standardizing lines of business on the IBM automation platform, reducing or retiring legacy tools and avoiding research and implementation costs that individual lines of business used to spend on researching and integrating a new automation solution. Platform standardization is expected to open the door for even more automation efforts. Having already invested in the IBM Automation Platform for Digital Business, more business managers and

Key Benefits



Loan approval productivity:
\$8.3 million



New loan interest income:
\$10.9 million



Legacy platform cost avoidance:
\$1.2 million



Employee onboarding efficiency:
\$2.5 million



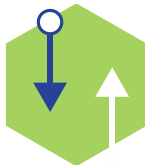
ROI
675%



Benefits PV
\$23.9 million



NPV
\$20.8 million



Payback
<6 months

leaders can extend the platform to their needs without having to start from scratch.

Key Findings

THE TOTAL ECONOMIC IMPACT OF IBM AUTOMATION PLATFORM FOR DIGITAL BUSINESS.

Forrester's interview with an existing IBM automation platform customer in the banking industry and subsequent financial analysis found that the interviewed organization experienced benefits of nearly \$23.9 million over three years versus costs of \$3.1 million, adding up to a net present value (NPV) of \$20.8M, an ROI of 675%, and a payback on upfront costs of less than six months from the time of going live.

Quantified benefits. With the IBM Automation Platform for Digital Business, the interviewed organization experienced the following risk-adjusted present value (PV) quantified benefits over the three-year analysis period.

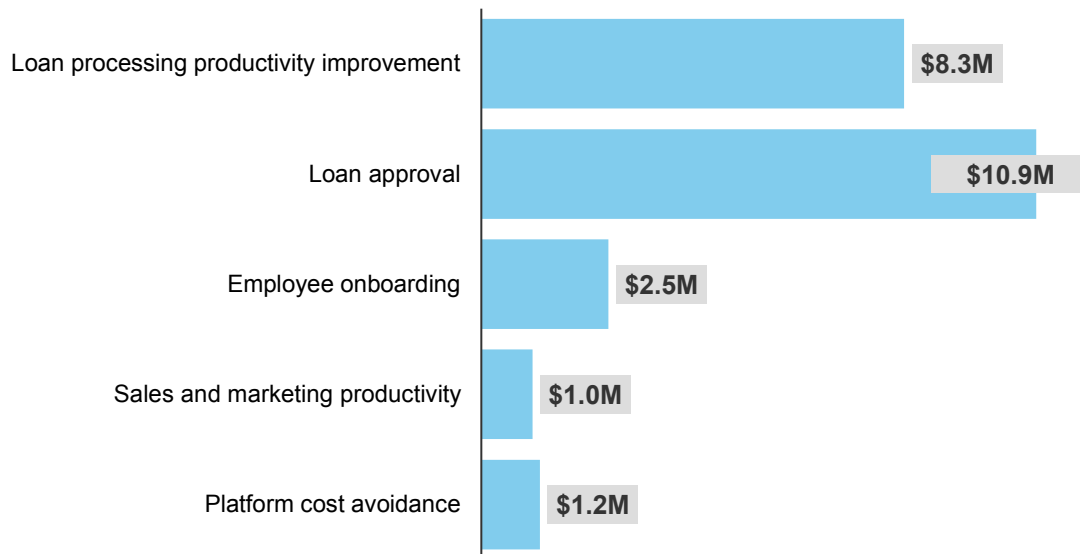
LOAN PROCESSING EXPERIENCE

- › **Loan processes are much quicker and require fewer manual steps, as 80% of loan applications are now able to be automatically managed.** With the Operational Decision Manager, the bank was able to streamline loan processing, automate loan completion tasks, and flag applications that require additional information or consideration. The bank is able to process loans automatically for 80% of loan applications. Loans that still require manual review are given more care and consideration, and the organization is still able to provide an answer to customers more quickly than before. This adds up to hundreds of thousands of hours saved each year, for an estimated productivity benefit of more than \$8.3 million.
- › **Faster loan setup means fewer abandoned applications and more opportunities.** Approvals total about 1.75 million new loans per year, and just a 1% improvement in approvals when fewer applicants give up and go elsewhere is estimated to add up to more than \$10.9 million in new interest income.

LEGACY PLATFORM COST AVOIDANCE

- › **For IT, standardizing business automation and workflow platform has meant significant technology cost avoidance.** This has been achieved by retiring legacy systems and avoiding time-consuming research and implementation time for new solutions. The bank has automated more than 50 business processes on the IBM Automation Platform for Digital Business. Setting and communicating automation platform standardization across the organization has allowed the bank to avoid spending time and money on research and implementation for one department or another — as well as the time and cost of integrating as many as 10 disparate automation systems together — adding up to nearly \$1.2 million.

Benefits (Three-Year)



EMPLOYEE ONBOARDING EXPERIENCE

- › **New employees are more often ready for work on day one, improving ramp-up time.** Before, roughly a quarter of an average annual total of 10,000 new employees would arrive for their first day of work with some tasks still incomplete, such as no network account set up, no badge provided, no desk or laptop allocated — sometimes this would be more than one employee. With about 10,000 new hires each year, and delays that average about four days (but could be much longer), this issue led to significant impacts to employee onboarding efforts. With workflow tools in the IBM Automation Platform for Digital Business, the organization could ensure that all the right reminders and requests were submitted — that issues were escalated as necessary — to ensure employees would be ready at day one and be able to reach full productivity that much more quickly. This improvement is estimated to add up to more than \$2.5 million for the bank.

SALES AND MARKETING EFFICIENCY

- › Events at locations such as colleges can help educate new bankers. Registering new accountholders is more efficient, **saving an estimated 30 minutes per new account in avoided rekeying and error handling time.** The bank conducts events at college campuses and other locations to provide banking education and to bring in first-time bankers. Before this was mostly a paper process — students would fill out an application and bank employees would rekey the information into the correct systems when back in the office, also dealing with any errors that might crop up from typing errors. With the IBM Automation Platform for Digital Business, this process is now completed via a tablet app that initiates the correct back-end processes automatically and is quick to complete account setup, adding up to more than \$1 million in improved productivity for the bank.

UNQUANTIFIED BENEFITS

The interviewed organization has enabled additional benefits, which are harder to quantify or have not yet been quantified, for this study:

- › **More new accounts opened as a result of events at colleges and other locations.** At these events, customer service is even more important than employee efficiency. The bank now provides a simpler, more modern process that helps college students and other consumers get information and provide them a faster and more convenient account setup process. This has enabled more new customers, meaning more new accounts and new interest income for the bank.
- › **Employee job satisfaction.** The bank's focus on automation has helped reduce repetitive and simple tasks, allowing employees to focus on areas where they can provide more value, which can help make their jobs more enjoyable — even from day one. With better employee onboarding, new employees aren't immediately faced with frustration and disappointment. And loan reviewers aren't wasting time reviewing obvious approvals, rather they can now focus on helping potential customers with more complex applications navigate the loan process. This focus on automation can help reduce employee turnover and lower recruiting, hiring, and training costs.
- › **Many other business processes have also already been automated.** The bank has already implemented automation across 50 processes so far (with more to come), including processes related to retail banking, asset management, ACH transactions, and managing foreign checks. Some automations provide simple task efficiencies and others are more involved, but all deliver some amount of productivity, cost savings, and/or revenue benefit. "It's safe to say we're using this just about everywhere," said the BPM manager at the bank.

Costs. The interviewed organization experienced the following risk-adjusted PV costs over the three-year analysis:

- › **Initial purchase, planning, and implementation costs.** IBM software, server hardware, and bank implementation resource time add up to about \$1.95 million.
- › **Ongoing resource costs.** Annual costs include IBM licensing and services, some third-party help to fine-tune automated workflows, and internal resource time spent creating, monitoring, and managing automated process rules and procedures. These add up to about \$486,000 in Year 1 and \$444,000 in years 2 and 3.

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

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 the IBM Automation Platform for Digital Business.

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 the IBM Automation Platform for Digital Business can have on an organization:



DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data related to the Automation Platform for Digital Business.



CUSTOMER INTERVIEW

Interviewed one organization using the IBM Automation Platform for Digital Business 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 the IBM Automation Platform for Digital Business: 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.

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 the IBM Automation Platform for Digital Business.

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 interviews but did not participate in the interviews.

IBM Automation Platform For Digital Business Customer Journey

BEFORE AND AFTER THE AUTOMATION INVESTMENT

INTERVIEWED ORGANIZATION

For this study, Forrester interviewed an IBM Automation Platform for Digital Business customer that is:

- › Based in the United States.
- › In the banking industry.
- › Focused on both consumer and business banking services.
- › A large enterprise with more than 50,000 employees.

Key Challenges

Before implementing the IBM Automation Platform for Digital Business, the organization saw several issues or opportunities they hoped to address with a new automation solution, including:

- › **Loan processing processes could be faster, and there were too many abandoned loan applications.** Every loan application was reviewed and inefficient validation. The BPM manager at the bank reported: “It was very paper-based. You had to manually validate things like matching the date and the paperwork. And if it’s not correct, then they had to re-sign.” Most banks continue to struggle with manual steps in loan automation and advancing the goal of implementing straight-through processing to delight customers.
- › **Employee setup processes were often incomplete for a new employee’s first day, stretching out training time.** Each step to bring on a new employee — like setting up a network badge or creating an HR record — were all separate process. The BPM manager continued, “It was all being done manually and when you do anything manually, it’s going to take time because there’s probably a lot more paper moving around and you’re going to make errors.”
- › **IT recognized there were several workflow solutions already in place, and more potentially on the way, which was already expensive and would drive costs higher.** Every new automation initiative meant a new request-for-proposal, review, proof-of-concept, and more. Process automation thrives on standards that allow a common approach to development, integration, security, compliance, training, and deployment across legacy systems and organizational boundaries. Cost and complexity come down as architectural standards come to bear.

“It was all being done manually and when you do anything manually, it’s going to take time because there’s probably a lot more paper moving around and you’re going to make errors.”

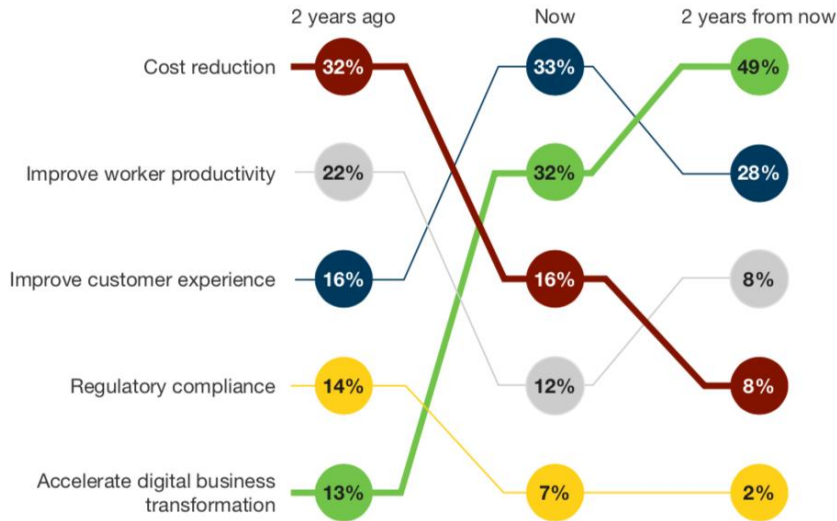
BPM manager, bank



Forrester’s “The Growing Importance Of Process To Digital Transformation” report highlights the key drivers leading to process improvement initiatives today — as well as two years ago and expected two years into the future.¹ While cost savings and employee efficiency are important, these priorities are diminishing in favor of improving customer experience and enabling business transformation.

For the bank, its focus on the loan application process checked the boxes for all the drivers below, but most importantly it improved customer

experience and transformed its business of providing loans into a fast and scalable service.



Solution Requirements

The interviewed organization searched for a solution that could:

- › Speed up the loan application process and avoid abandoned applications.
- › Ensure setup processes were complete before an employee started their first day.
- › Scale to be able to expand process and workflow automation to new and existing tasks and processes.
- › Simplify process automation planning, integration, and training across many teams and departments that all want to implement process automation.
- › Standardize on one platform to help reduce costs for the organization.

The bank chose the IBM Automation Platform for Digital Business (based on these requirements) and began implementation several years ago, starting with loan automation and adding employee onboarding and other processes year by year — adding up to the 50 total business processes implemented today.

Note: To more clearly show the before-and-after business case, this study focuses on the processes and workflows that are most impactful and strategically important for the bank. Other processes are not detailed because they are simpler, smaller, or are not measured as a financial benefit or cost savings at this time.

Additionally, as detailed per-workflow implementation costs are not available, and to allow that planning and implementation will differ for simpler processes versus more complicated workflows, a combined implementation and ongoing cost is provided as if all impactful and important processes were implemented at the same time (“Year 1” in this analysis).

Readers can use this information for their own business case analysis by staggering the start of specific process automation projects and benefits into Year 2, Year 3, or later. Similarly, costs can be spread out in later years based on the complexity of each process automation project.

Key Results

The interview revealed that key results from the bank's investment in the IBM Automation Platform for Digital Business include:

- › **A more efficient loan application process.** With the Operational Decision Manager, the bank was able to set up workflows that enable faster approval of 80% of all loan requests. "Some loan approval processes were taking days, sometimes four to 10 days depending on the exceptions; now 80% of our loan applications flow straight through and are done in seconds," said the bank's BPM manager. This dramatically improved customer experience and moved the bank along the path to digital transformation.
- › **More loan accounts opened.** A more efficient loan process doesn't just save employees' time, it makes for a faster, more convenient, and even enjoyable process for customers as well, when they are able to fill out the application online, avoid follow-up questions to resolve rekeying errors, and most of the time get quick answer. This helps to reduce abandoned loan applications (where the applicant gives up and goes to another bank or loan servicer), meaning more loans are opened, more revenue and income opportunities are enabled for the bank, and more customers are more satisfied in the loan process. "We want to drive towards better quality," continued the BPM manager.
- › **On-time employee onboarding.** The Business Automation Workflow helps connect various systems and set up automated workflows for repeated processes. New employees need to have a lot of things set up before their first day, and there are thousands of new employees each year. They all need a desk, a keycard, network access, software licenses, and payroll and healthcare insurance set up — most of which require access to different systems. "There are times that a workflow crosses systems — a little bit happens here, a little bit happens over there — and in a case like that, the Business Automation Workflow can be the thing that ties the whole process together," said the BPM manager at the bank.
- › **New user experience models opened new business opportunities.** The process of visiting college campuses and other locations to sign up first-time banking accounts was previously paper-based and cumbersome. With the Business Automation Workflow, the bank set up a tablet-based application form that when submitted would initiate all the necessary steps to open a new account, providing customers a faster result. The BPM manager explained, "It was all being done manually and when you do anything manually, it's going to take time because you're moving the paper around and you're going to have people make errors."
- › **Standardizing on the IBM Automation Platform for Digital Business has helped avoid legacy solution costs.** IBM's comprehensive, standard platform helps the bank manage all task and workflow automation — from loans to employee onboarding to everything in between. This means new automations can be implemented without having to research a new system because a department has a specific need, or the standard platform wasn't communicated across the whole organization. The BPM manager continued, "Now that we have one standard platform we can always start building on that, versus every project having to go out and figure out how we're going to do things and go through all the full analysis of every vendor," said the BPM manager at the bank.

"Some loan approval processes were taking days, sometimes four to 10 days depending on the exceptions; now 80% of our loan applications flow straight through and are done in seconds."

BPM manager, bank



"We want to drive towards better quality."

BPM manager, bank



"There are times that a workflow crosses systems — a little bit happens here, a little bit happens over there — and in a case like that, the Business Automation Workflow can be the thing that ties the whole process together."

BPM manager, bank



Analysis Of Benefits

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Loan processing productivity	\$3,200,000	\$3,360,000	\$3,528,000	\$10,088,000	\$8,336,589
Btr	New approved loans	\$4,200,000	\$4,410,000	\$4,630,500	\$13,240,500	\$10,941,773
Ctr	Employee onboarding efficiency	\$1,008,000	\$1,008,000	\$1,008,000	\$3,024,000	\$2,506,747
Dtr	Event marketing productivity	\$405,000	\$405,000	\$405,000	\$1,215,000	\$1,007,175
Etr	Platform cost avoidance	\$464,000	\$464,000	\$464,000	\$1,392,000	\$1,153,899
Total benefits (risk-adjusted)		\$9,277,000	\$9,647,000	\$10,035,500	\$28,959,500	\$23,946,183

Loan Processing Productivity

The bank has millions of current customers and estimates it receives about 2 million new loan applications each year.

BEFORE LOAN PROCESSING AUTOMATION

Before the IBM Automation Platform for Digital Business every application included a lot more paper and at least some manual review and approval, regardless of whether it was an application from an obviously qualified applicant that met all minimum requirements or one that required more consideration.

Each application review:

- › Took significant time to complete.
- › Added to a steady backlog, which meant that every loan application included some wait time.
- › Opened the bank up to the risk of being accused of bias or preferential treatment to some applicants when every loan is manually reviewed.

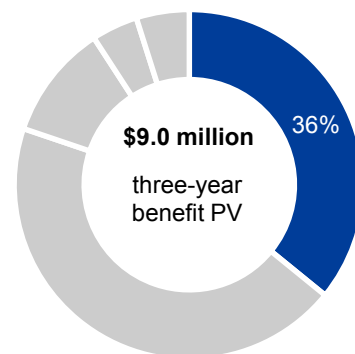
AFTER LOAN PROCESSING AUTOMATION

Increasing the role of automation to be a more important part of the loan application process — even for simple application reviews that fully take over the process — saved considerable time, improved customer interactions, and reduced the risk of review bias and other complaints.

For example:

- › With the Operational Decision Manager, the bank was able to collect standard rules in one, well-managed place.
- › Rules were no longer part of a person's checklist, or buried in application code, but a managed list accessible to business managers for review and adjustment.
- › IT and business managers are both able to view and/or update the loan processing workflow, application decisioning, and integration with other applications.

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 interviewed organization expects risk-adjusted total benefits to be a PV of more than \$23.9 million.



Loan processing productivity: 36% of total benefits

Today, 80% of all loan applications are quickly approved, as applicants that meet all necessary criteria do not require further manual processing and can be processed automatically. Other applications (including any that might have been automatically rejected) are moved to a manual review queue for additional consideration and follow-up. Even for applications that require some manual review, the automated workflow takes care of many tasks, including: automatic account generation, loan funding, and account holder communication.



Today, 80% of all loan applications do not require further review and are approved automatically.

Automation enables manual loan review productivity, a key benefit for the bank. The bank estimates:

- › A manual loan review before automation took 10 minutes on average, and all 2 million applications were reviewed.
- › The bank estimates that the number of applications processed will grow by 10% each year. Improved automation both allows employees more time to spend on additional applications, and is an additional value criteria that help more potential customers select this bank over others.
- › Today, a detailed manual review is only done for 20% of all applications; each of these 400,000 reviews are expected to take longer than before, on average, since these are the applications that require extra consideration because these are all the complicated or questionable loan requests. Loan reviewers now have less backlog and more time to spend on reviewing and providing more time and quality to each request.
- › An average loan reviewer hourly rate of \$20 is estimated.

Loan Processing Productivity: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
A1	Loans processed		2,000,000	2,100,000	2,205,000
A2	Loans manually reviewed before		2,000,000	2,100,000	2,205,000
A3	Loans manually reviewed today		400,000	420,000	441,000
A4	Time to manually process a loan before (average minutes)		10	10	10
A5	Time to manually process a loan today (average minutes)		20	20	20
A6	Total hours saved each year	$(A2 \cdot A4 - A3 \cdot A5) / 60$	200,000	210,000	220,500
A7	Average loan reviewer hourly rate		\$20	\$20	\$20
At	Loan review automation and efficiency improvements	$A6 \cdot A7$	\$4,000,000	\$4,200,000	\$4,410,000
	Risk adjustment	↓15%			
Atr	Loan review automation and efficiency improvements (risk-adjusted)		\$3,400,000	\$3,360,000	\$3,528,000

The calculation of the value of loan review employee productivity includes:

- › Adding up the total time spent on loan reviews before automation. And subtracting from that, the time spent on loan reviews today.

- › The 200,000 hours reflects the reallocation of some of the team’s efforts to more valuable resources such as customer service and support, and also being able to avoid some rehires otherwise needed due to natural team attrition after promotions or career changes.

Another standard part of the Forrester TEI analysis is risk adjustment due to over- or under-estimation and/or input metrics that may be highly volatile. For the bank, loan business is relatively standard, but productivity time savings may still be overestimated. To account for this, Forrester adjusted this benefit downward by 20%, yielding a three-year risk-adjusted total PV of more than \$8.3 million.

New Approved Loans

Along with employee productivity, automating the loan review process provides customers and potential loan account holders a much faster and easier process, which can help lead to greater customer satisfaction and more closed loans.

BEFORE LOAN APPLICATION AUTOMATION

Before the bank fully automated its loan application workflow:

- › Every loan included some level of manual review — as described above.
- › Applicants had to wait for completion, especially for more complex applications that required more time and follow-up — often less than two days but sometimes a week or even more.
- › Given the variety of options available to borrowers, many would give up and go to another bank that would hopefully provide a faster response.

Those abandoned applications added up to a significant lost revenue opportunity for the bank. The bank estimates:

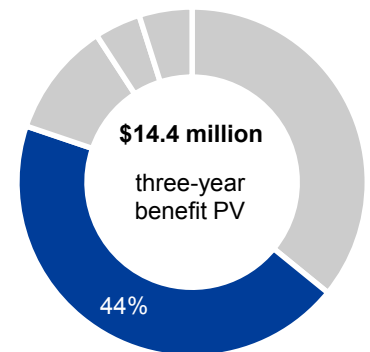
- › There were 1.75 million loans approved in the first year before workflow automation (of the 2 million total loan applications processed).
- › The bank estimates 10% growth in the second and third years.
- › With workflow automation and fast loan applications for 80% of loan applicants enabled by the IBM automation platform, it is estimated that this contributes to an additional 1% of loan applications that are now approved.
- › Fast approval is a significant contributor to an increase in loan applications. The bank has also implemented improved marketing and sales campaigns and best practices that have also contributed. Thus, of the 17,500 new approved loans, 75% are estimated to be significantly a result of workflow automation.
- › Additionally, the average loan size is estimated to be \$15,000, and the bank realizes an operating income rate of 2% on loan volume.

AFTER LOAN APPLICATION AUTOMATION

With the IBM Automation Platform for Digital Business:

- › Many loans applications are processed immediately.

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



New loan interest income: **44%** of total benefits



At least 1% more loans are closed due to faster review and automated approvals.

- › All loans are processed more quickly.

“If you get it approved in seconds, it won’t become an abandoned loan; but if it takes you two weeks, then it could,” said the BPM manager at the bank.

As the speed of loan application processing may be improved by a broad variety of improvement efforts, and loan sizes can vary greatly, Forrester adjusted this benefit downward by 20%, yielding a three-year risk-adjusted total PV of more than \$10.9 million.

“If you get it approved in seconds, it won’t become an abandoned loan; but if it takes you two weeks, then it could.”

BPM manager, bank



Interest Income From New Approved Loans: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
B1	Loans approved before		1,750,000	1,837,500	1,929,375
B2	Increase in completed loan applications with more automated reviews (e.g., decrease in abandoned/cancelled applications)		1%	1%	1%
B3	Additional loans approved	B1*B2	17,500	18,375	19,294
B4	Average loan size		\$15,000	\$15,000	\$15,000
B6	Average operating income from loan volume		2%	2%	2%
Bt	Total new interest income due to loan decision automation	B3*B4*B5	\$5,250,000	\$5,512,500	\$5,788,125
	Risk adjustment	↓20%			
Btr	Total new interest income due to loan decision automation (risk-adjusted)		\$4,200,000	\$4,410,000	\$4,630,500

Platform Cost Avoidance

The bank’s standardization on the IBM Automation Platform for Digital Business has led to cost savings from retired legacy systems, as well as significant cost avoidance enabled as a result of no longer having to research and implement a department-specific solution.

BEFORE LEGACY PLATFORM CONSOLIDATION

Before the bank standardized on the IBM Automation Platform for Digital Business, automating a specific department process was a very daunting prospect, as:

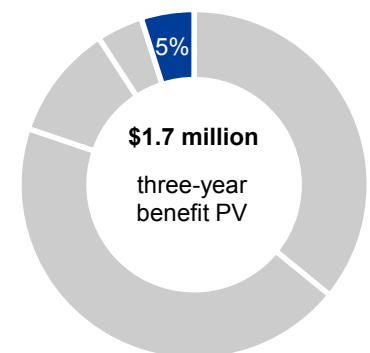
- › There was no platform the organization could always rely on.
- › Other departments with their own automation initiatives had chosen solution-specific applications that often wouldn’t be as good a solution fit for other departments.

“Before, it was homegrown applications, ad hoc rule management, and other manual processes,” said the BPM manager at the bank.

AFTER PLATFORM CONSOLIDATION WITH IBM’S AUTOMATION PLATFORM

On the IBM Automation Platform for Digital Business, the bank has standardized:

- › Workflow and task automation with Business Automation Workflow.



**Platform cost avoidance:
5% of total benefits**

- › Decisioning applications on Operational Decision Manager.
- › Provided business access to process models and rules via Blueworks Live.

“We have one standard platform we can keep building on, versus having to figure out every project with analysis of every vendor,” said the BPM manager at the bank. And a central team helps coordinate these efforts.

The bank estimates:

- › Implementing the three key workflows detailed above would have each required exploration, planning, and deployment phases, plus ongoing licensing and support, adding up to at least \$500,000 each year.
- › Every business manager looking to automate a workflow would need to conduct research to determine whether one of the solutions already in place could be used or if a new solution would need to be brought in, which could add up to \$80,000 or more in ongoing internal resource and outside service provider costs.

“We have one standard platform we can keep building on.”

BPM manager, bank



Platform Cost Avoidance: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
C1	Cost of managing new workflows		\$80,000	\$80,000	\$80,000
C2	Cost of managing and supporting previous platforms		\$500,000	\$500,000	\$500,000
Ct	Avoided platform costs	C1+C2	\$580,000	\$580,000	\$580,000
	Risk adjustment	↓20%			
Ctr	Avoided platform costs (risk-adjusted)		\$464,000	\$464,000	\$464,000

With the IBM Automation Platform for Digital Business, the bank can avoid investment in individual automation initiatives that would require significant time and costs spent on:

- › Searching for vendors that offer the right solution.
- › Gathering requirements to create a request for information (RFI) to send out to vendors.
- › Forming a committee to narrow down RFIs to a list of finalists.
- › Creating criteria and bringing in each vendor to perform a proof of concept (POC).
- › Issuing RFPs and selecting a vendor.
- › Negotiating pricing with vendor, finalizing an agreement, and then starting the procurement process.
- › Planning for integration with existing environments.

And automated workflows managed with new solutions would include further time and cost related to:

- › Working to identify issues or risks with corporate standards, software vulnerabilities, and document anything that needs remediation.
- › Standing up environments (research, development, testing, quality assurance, and production to name a few environments necessary).
- › Hiring consultants to help with the first project and learn best practices.

Since platform purchase, integration, and other costs may vary greatly,



Automation efforts before were ad hoc and decentralized.

The organization would have ended up with at least 10 different platforms without standardization.

Forrester adjusted this benefit downward by 20%, yielding a three-year risk-adjusted total PV of nearly \$1.2 million.

Employee Onboarding Efficiency And Reliability

The bank also looked at employee onboarding as another regularly occurring process that could benefit from workflow efficiency and automation. The organization brings on 10,000 or more new employee hires each year — and many have gone through the challenge of incomplete ramp-up processes and procedures.

BEFORE EMPLOYEE ONBOARDING AUTOMATION

Without workflow automation, on day one, a new employee might arrive to find:

- › Their badge wasn't provided.
- › They didn't have a network account.
- › They didn't have a desk or a laptop.
- › An HR packet was not ready. All of these (and more) are steps that the bank (and most any organization) must take to get ready to bring on a new employee — and most of these steps need to be coordinated with different people in different departments using different systems.

Delays in any of these steps mean new employees have to wait for everything to be completed. The bank estimates that, before workflow automation, 25% of new hires found some part of their onboarding process was missing or incomplete.

Thus, training conducted without a workspace or a laptop may require rework, meetings may be postponed, and new employees may work slowly or, in the worst case, have to sit around and wait for something to happen. "Sometimes it would take a week before they have everything, and they can start actual work to complete their employee orientation," said the BPM manager at the bank.

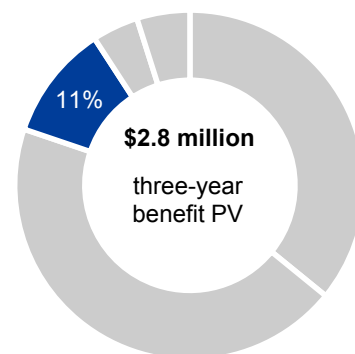
Inefficiencies such as these mean that full employee onboarding is delayed, as is the time it takes to reach full productivity. Everyone else is affected as well, as IT has to drop everything to get a network account set up, colleagues have to rearrange workspaces to make temporary room, and managers have to spend time trying to get everything fixed.

AFTER EMPLOYEE ONBOARDING AUTOMATION

With the IBM Automation Platform for Digital Business, particularly Business Automation Workflow, the bank can coordinate all these tasks into a single workflow that can be initiated by a manager or HR when a new employee is ready to join. This includes automated steps like:

- › Creating a network account or a record in the HR system.
- › Emailing the team in charge of keycard creation and workspace provisioning, and confirming keycard creation.
- › Approving network access.
- › Setting up a work laptop and delivering it to their new desk.

The bank estimates it hires 10,000 new employees each year, and estimates:



Employee onboarding efficiency: **11%** of total benefits



Employee onboarding issues can cause delays of four days or more. Automation can significantly help avoid issues across 10,000 new hires each year.

- › Before workflow automation, 25% of these hires found some part of their onboarding process was missing or incomplete, as mentioned above.
- › Delays caused by incomplete employee onboarding results in an average of four days of wasted time (considering the total time taken by the new employee, their manager, and everyone else involved in a rushed onboarding).
- › A broad average hourly salary of \$35 has been used, given that this issue might happen to anyone, e.g., tellers, managers, or other employees.
- › And as part of all broad productivity improvement benefits, Forrester TEI analyses assume that not every hour saved will be used for other things — perhaps a cup of coffee, chatting with colleagues, other tasks, or going home on time. All of these are valuable and important for things like employee work/life balance, but they are not included in this direct productivity metric. Thus, a 50% realization rate is applied.

Employee Onboarding Efficiency: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
D1	Employees hired each year		10,000	10,000	10,000
D2	Percentage of new hires with unfinished start-up		25%	25%	25%
D3	Delay duration hours (before full productivity)		4	4	4
D4	Average employee bank salary		\$35	\$35	\$35
D5	Percentage of delays eliminated with automated employee onboarding		80%	80%	80%
D6	Standard productivity realization rate		50%	50%	50%
Dt	Avoided employee onboarding costs	$D1 \cdot D2 \cdot D3 \cdot 8 \cdot D4 \cdot D5 \cdot D6$	\$1,120,000	\$1,120,000	\$1,120,000
	Risk adjustment	↓10%			
Dtr	Avoided employee onboarding costs (risk-adjusted)		\$1,008,000	\$1,008,000	\$1,008,000

With the IBM Automation Platform for Digital Business platform, the bank estimates that 80% of issues are eliminated with workflow automation.

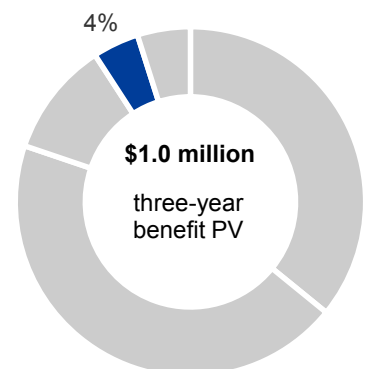
Mentioned above, the provided employee salary is a broad estimate used in a process that might involve managers or many information worker roles. To account for this, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of more than \$2.5 million.

More Effective Marketing Events

The bank conducts a number of events at college campuses and other locations, to help educate young adults about banking, and help them open what for many is their first checking or savings account.

BEFORE AUTOMATION

For new account applications gathered at events such as on college campuses, bank employees would:



More effective marketing events: 4% of total benefits

- › Collect applications filled out by hand.
- › Key in the information and start the account creation process once they were back in the office.

This was time-consuming and allowed for easy errors to crop up when trying to read and retype handwritten information. The bank felt it was wasted time not only in rekeying account details, but also in the extra time spent remediating the many errors that occurred.

“You can sign up right there and that kicks off an automatic process.”

BPM manager, bank



AFTER AUTOMATION

With Business Automation Workflow connected to a web-based front end, employees can now come to college events and other locations armed with tablets that students can fill out themselves. “You can sign up right there and that kicks off an automatic process,” said the BPM manager at the bank. That information goes directly to the bank’s systems, to initiate the account creation process that includes account opening, account holder communication, and other tasks.

The bank estimates:

- › One thousand college or other types of events take place each year, where on average 40 new accounts are opened at each event.
- › Before automation it took on average about 30 minutes to both key in account information as well as deal with any issues, questions, or errors.
- › With workflow automation, 75% of this time is saved — some time is still spent answering questions and dealing with any data entry issues a student may have made.
- › Event staff salaries are estimated to be \$30 per hour (as they are likely junior or entry-level marketing and sales employees).

The number of events each year and the number of new accounts at each event may vary greatly. To allow for possible over-estimation, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of more than \$1 million.



Event marketers can complete new application sign-ups 75% more quickly, leading to more accounts opened.

More Effective Marketing Events: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
E1	Number of events each year		1,000	1,000	1,000
E2	Number of accounts opened per event		40	40	40
E3	Follow up time required per manually entered account (minutes)		30	30	30
E4	Percentage of time avoided with IBM automation solutions		75%	75%	75%
E5	Average hourly salary for employees making onsite visits		\$30	\$30	\$30
Et	Improved onsite marketing productivity	$E1 * E2 * E3 / 60 * E4 * E5$	\$450,000	\$450,000	\$450,000
	Risk adjustment	↓10%			
Etr	Improved onsite marketing productivity (risk-adjusted)		\$405,000	\$405,000	\$405,000

Unquantified Benefits

This analysis estimates the benefits and costs that the IBM Automation Platform for Digital Business has enabled for the bank.

EFFICIENCIES AND OTHER BENEFITS FROM ADDITIONAL AUTOMATION PROCESSES

The quantified benefits highlighted above focus on the top workflows and processes that have been improved with automation, but there are many other workflows and processes that the bank has improved with automation and decisioning. They are not included above as they are either smaller, more focused workflows, and/or have not been measured to the necessary detail yet. Other processes the bank has already automated include:

- › Expense reporting.
- › Several common IT tasks such as account setups and closings.
- › Other loan service integrations, such as with car loans.

These are estimated to deliver even more benefits to the bank (though note that considering additional process benefits should also include some additional investment costs to expand the platform, though certainly at a lower investment cost than before IBM automation solutions).

ADDITIONAL LEGACY PLATFORM COST SAVINGS

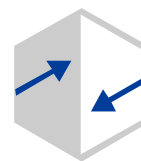
The bank has also reduced or completely eliminated legacy platform costs for the many other processes the bank has now automated with the IBM Automation Platform for Digital Business — as well as the cost of manually completing work for processes that were too expensive to automate before, but have now been automated or are planned for automation soon.

EMPLOYEE JOB SATISFACTION

Employees are able to focus their daily work on areas where they can provide more value, instead of on simple repetitive tasks, which can help make their jobs more enjoyable. Even at day one, with better employee onboarding, new employees aren't immediately frustrated and bored waiting for a delayed onboarding task to be completed. Loan reviewers aren't spending time reviewing obvious approvals, but can focus on helping potential customers with more complex applications navigate the loan process. These examples highlight just two of many areas where automation can help employees provide more value and quality. This can help improve job satisfaction, which can lead to reduced employee turnover and lower recruiting, hiring, and training costs.

Flexibility

Part of Forrester's TEI methodology looks at the future options available to an organization now that it has completed initial investment and has already enabled benefits. In other words, the initial investment in the IBM Automation Platform for Digital Business may be complete, but the bank will continue efforts to identify new opportunities for growth efficiency. There are multiple scenarios in which a customer might choose to



The bank has implemented automation for dozens of workflows and tasks, delivering even greater value.

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 do so.

implement, and the value and measurement of flexibility is clearly unique to each customer.

FUTURE EXPECTED FLEXIBILITY BENEFITS FOR THE BANK

The bank's strategy for continued improvement will include a significant focus on automation. "We're going to go and attack new processes and do a continuous process improvement cycle," said the BPM manager at the bank. As part of this continuous improvement initiative, the bank plans to continue adding more automation to find new areas where they can:

- › Work on automation processes that can help automate even more than the current 80% of loans automatically approved.
- › Speed up more tasks.
- › Make more workflows more efficient.
- › Help streamline more decision-making steps.

While automating more loan applications would require new business data and rules (and likely management and executive buy-in), the IBM Automation Platform for Digital Business can already support automating the workflow for more loan approvals as the bank gains more data and insights to be able to set specific loan approval rules.

And all these improvement benefits would be measured based on the specific processes impacted, and would also include some added investment costs to expand the platform. However, regarding platform cost savings, the bank's standardization on the IBM Automation Platform for Digital Business will help enable new automation initiatives to be added without the significant expense of deploying and customizing a new automation solution. Thereby helping the bank unlock many more future opportunities than it expected to on its old platform.

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



Standardization on the IBM Automation Platform for Digital Business will help enable new automation initiatives to be added without the significant expense of deploying and customizing a new automation solution.

Analysis Of Costs

QUANTIFIED COST DATA

Total Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Ftr	Upfront costs	\$1,947,750	\$0	\$0	\$0	\$1,947,750	\$1,947,750
Gtr	Ongoing costs	\$0	\$486,150	\$444,150	\$444,150	\$1,374,450	\$1,142,717
	Total costs (risk-adjusted)	\$1,947,750	\$486,150	\$444,150	\$444,150	\$3,322,200	\$3,090,467

Upfront Costs

The bank spent about 12 months planning and implementing the three automated workflows described in the Benefits section.

Implementation costs included:

- › The IBM Automation Platform for Digital Business software purchase costs, at the scale necessary to cover the three workflows, estimated to be about \$470,000.
- › Server and other hardware costs required to deploy and connect the IBM automation platform with other systems. While hardware options can vary greatly, for the bank this is estimates to also be about \$470,000.
- › Services to assist with platform deployment, application implementation, and workflow testing and tuning — estimated to be about \$540,000.

Again, a small risk adjustment has been added to allow for any under-estimation of costs. Forrester adjusted these costs upward by 5%, yielding a three-year risk-adjusted total PV of about \$1.9 million.

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 about \$2.9 million.



Total implementation and deployment time: 12 months

Upfront Costs: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
F1	Software costs		\$470,000			
F2	Hardware costs		\$470,000			
F3	Implementation duration (months)		12			
F4	Employees included in implementation (FTE)		5			
F5	Average employee salary		\$75,000			
F6	Third-party implementation assistance		\$540,000			
Ft	Upfront costs	$F1+F2+(F3*F4*F5*F4*F5/12)+F6$	\$1,855,000	\$0	\$0	\$0
	Risk adjustment	↑5%				
Ftr	Upfront costs (risk-adjusted)		\$1,947,750	\$0	\$0	\$0

Ongoing Costs

Annual costs include three main categories:

- › IBM licensing renewal costs of about \$118,000 per year.
- › Additional IBM services to help manage and tune workflows automated on the platform, estimated at \$120,000 in Year 1, decreasing to \$80,000 in years 2 and 3.
- › Internal resource time and cost to manage workflows, update rules, and etc., estimated to total \$225,000 per year.

Given a small risk of under-estimation, Forrester adjusted these costs upward by 5%, yielding a three-year risk-adjusted total PV of about \$1.1 million.

Implementation risk is the risk that a proposed investment 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.

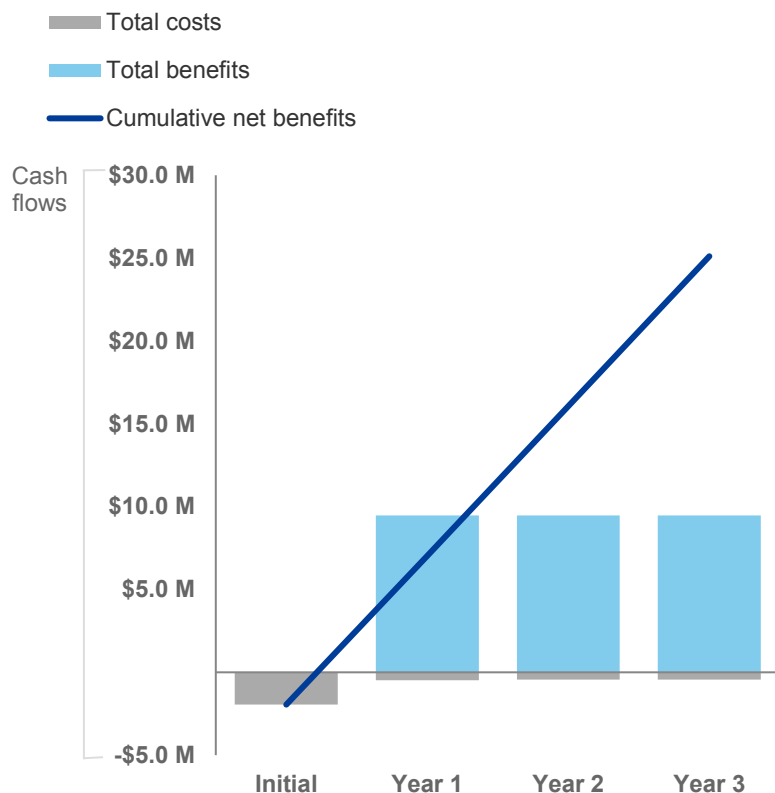
Ongoing Costs: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
G1	IBM licensing			\$118,000	\$118,000	\$118,000
G2	Internal resource management			\$225,000	\$225,000	\$225,000
G3	Third-party resource assistance			\$120,000	\$80,000	\$80,000
Gt	Ongoing costs	G1+G2+G3	\$0	\$463,000	\$423,000	\$423,000
	Risk adjustment	↑5%				
Gtr	Ongoing costs (risk-adjusted)		\$0	\$486,150	\$444,150	\$444,150

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



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. 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	(\$1,947,750)	(\$486,150)	(\$444,150)	(\$444,150)	(\$3,322,200)	(\$3,090,467)
Total benefits	\$0	\$9,277,000	\$9,647,000	\$10,035,500	\$28,959,500	\$23,946,183
Net benefits	(\$1,947,750)	\$8,790,850	\$9,202,850	\$9,591,350	\$25,637,300	\$20,855,716
ROI						675%
Payback period						<6 months

IBM Automation Platform For Digital Business: Overview

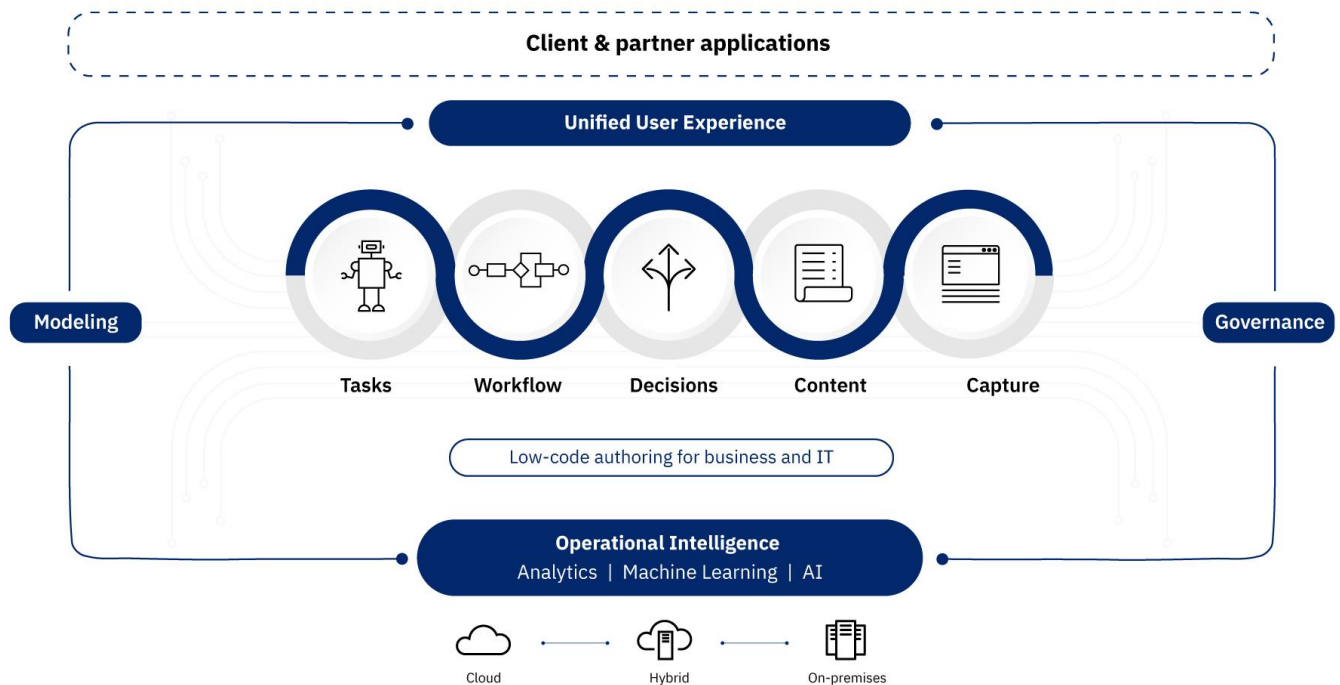
The following information is provided by IBM. Forrester has not validated any claims and does not endorse IBM or its offerings.

WHAT IBM OFFERS

IBM offers an automation platform built on a common analytics layer that gives you insights into your operational data and productivity.

The **IBM Automation Platform for Digital Business** is an integrated set of flexible capabilities that can help you automate work to drive growth:

- › **Use bots to automate routine human tasks.** Eliminate copy-and-paste and data-entry errors, free employees for higher-value work.
- › **Share, manage, and collaborate on content.** Support instant access to content, connect content to digital business applications, and help assure governance and compliance.
- › **Design and manage start-to-finish workflows.** Choreograph sequences of human and automated activities to improve consistency across processes and cases, increase straight-through processing.
- › **Automate decisions with business rules.** Enable rapid adaptation to change, increase the consistency and auditability of decisions, detect noteworthy situations in real time.
- › **Capture, classify, and extract data from content.** Speed extraction of data, reduce data entry errors, and gain insights from unstructured documents.



TO LEARN MORE

- › **More information:** <https://www.ibm.com/automation/ibm-automation-platform-digital-business>.
- › **Watch a demo:** https://www.youtube.com/watch?time_continue=13&v=kbEfHxbGRps.
- › **Schedule a 30-minute consultation** with automation expert: <https://www.ibm.com/account/reg/us-en/signup?formid=urx-15068>.

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.

Appendix B: Endnotes

¹ Source: “The Growing Importance Of Process To Digital Transformation,” Forrester Research, Inc., May 8, 2018.