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The Total Economic Impact™ Of IBM Cloud For SAP

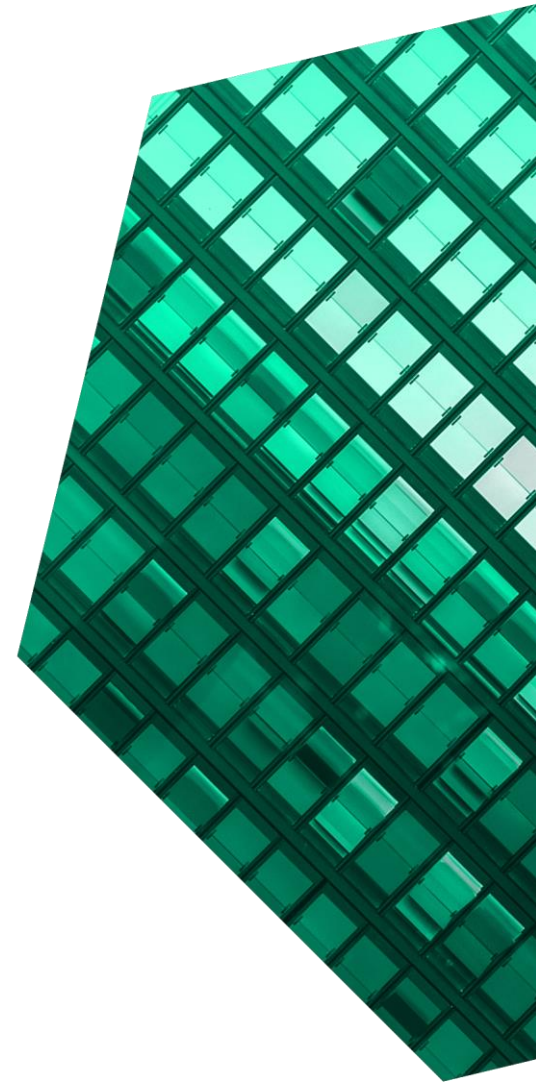
Cost Savings And Business Benefits
Enabled By Cloud For SAP

MARCH 2023

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ABOUT FORRESTER CONSULTING

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Executive Summary

Organizations compelled to migrate enterprise resource planning (ERP) to the cloud need a solution that will maintain or improve the availability and resilience achieved with on-premises hardware while achieving cost-of-ownership objectives. Protecting critical operational systems from increasing cyberthreats while allowing for scalability and timely upgrades are also priorities for organizations seeking to retain or augment competitive dynamics when pressure to enact digital transformation continues to rise.

IBM Cloud provides organizations with flexible and resilient SAP-certified Infrastructure as a Service solutions that enable SAP ERP to scale and evolve with the organization. The built-in high availability and other features that enhance security and compliance mitigate risks of deploying critical SAP workloads in cloud.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Cloud for SAP.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Cloud for SAP on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four representatives with experience using IBM Cloud for SAP. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is a global organization with 30,000 employees across a multitude of locations and maintains more than 100 SAP workloads.

Prior to using Cloud for SAP, these interviewees noted how their organizations faced various challenges with on-premises SAP systems, including operational risks from disruptions and downtime, capacity and scalability issues, and end-of-life hardware decisions,

KEY STATISTICS



Return on investment (ROI)
212%



Net present value (NPV)
\$4.66M

After the investment in Cloud for SAP, the interviewees noted improved availability and reduced efforts needed to manage workloads, leverage data for analysis and reporting, and perform security- and compliance-related tasks. Key results from the investment include data center cost savings as well as a reduction of operational, security, and compliance risks.

KEY FINDINGS

Quantified benefits. Three-year, risk-adjusted present value (PV) quantified benefits for the composite organization include:

- **Reduced downtime and other disruptions by 135,000 hours.** The resilience and high availability features of IBM Cloud for SAP improves productivity by reducing the number of downtime incidents or amount of resolution time and other disruptions. This benefit is worth more

than \$2.5 million to the composite organization over three years.

- **Improved productivity of SAP system personnel by up to eight FTEs per year.** Efforts needed to manage SAP workloads and related data sets, analyses, and reporting are reduced by up to eight FTEs per year. The value of this benefit totals \$2.3 million over three years.
- **Avoided infrastructure and other data center costs worth \$1.3 million.** Moving away from on-premises hardware reduces the need to replace end-of-life hardware and other data center costs.
- **Increased efficiency on compliance and security tasks by 50%.** Leveraging IBM Cloud deployments and continuous security and compliance monitoring reduces internal efforts related to security and compliance tasks, leading to a three-year benefit worth \$754,000.

noted, leading to faster insights from timely analytics and reporting.

- **Data transfer optimization.** Moving SAP workloads to IBM Cloud creates efficiencies in processes relying on data from multiple locations, avoiding unnecessary and prolonged transfers to and from and between on-premises hardware and cloud deployments.

Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **IBM Cloud for SAP solution.** Usage costs and support total \$1.7 million over three years.
- **Internal efforts to integrate solution.** Internal personnel are needed to integrate and optimize the solution deployment. These efforts are valued at \$514,000 over three years.
- **Training time.** Time needed to learn about the IBM Cloud solution and subsequent training on features, functionality, and updates is valued at \$27,000 over three years.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$6.86 million over three years versus costs of \$2.20 million, adding up to a net present value (NPV) of \$4.66 million and an ROI of 212%.

Reduced operational risk
from improved availability:

\$2.5M



Unquantified benefits. Benefits that provide value for the composite organization but are not quantified in this study include:

- **Time to value.** IBM offers SAP-certified instances on IBM Power servers, VMware, bare metal, and virtual private cloud environments. Clients can move SAP workloads on Power and VMware from on-premises to cloud without re-platforming. The expedited migration to the cloud enabled by IBM improves the time to value for organizations. Other process improvements were



ROI
212%



BENEFITS PV
\$6.86M



NPV
\$4.66M

Benefits (Three-Year)

Reduced operational risk from improved availability

\$2.5M

Increased operational efficiency

\$2.3M

Reduced data center costs

\$1.3M

Reduced compliance and security risk

\$754.3K

“The capacity to grow and keep on growing without the risk of not [having enough] space has been a game changer — we keep on growing, and we do not need to worry about buying new hardware whatsoever.”

— IT infrastructure director, food and beverage

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Cloud for SAP.

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 Cloud for SAP can have on an organization.

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 study to determine the appropriateness of an investment in Cloud for SAP.

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.



DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data relative to Cloud for SAP.



INTERVIEWS

Interviewed four representatives at organizations using Cloud for SAP to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewees.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The IBM Cloud For SAP Customer Journey

■ Drivers leading to the Cloud for SAP investment

Interviews				
Role	Industry	Region	Employees	SAP Workloads
IT director	Manufacturing	Headquartered in Europe, global operations	11,000	200
IT infrastructure director	Food and beverage	Headquartered in North America, global operations	31,000	200+
Enterprise architect	Financial services	North America	7,500	400
Global strategy director	Insurance	Headquartered in North America, global operations	40,000	100+

KEY CHALLENGES

The interviewees noted how deficiencies in prior solutions led their organizations to consider IBM Cloud for SAP. These decision-makers described common challenges with the on-premises hardware previously used for SAP, including:

- **Operational risk.** The availability of SAP systems can impact productivity of employees as well as critical logistics and operational processes. If SAP systems end up offline for maintenance, updates, or other disruptions, organizations face operational risk that impact the ability to deliver value to customers. The IT director explained: “We don’t want to have any kind of disruption because for us, a disruption in a factory, especially the ones automated, [and] we lose capacity to manage the line, ... we stop the production. These are business impacts that are really high.”
- **Capacity limits and scalability.** On-premises hardware had capacity limitations and most organizations had been trying to keep up with growth and increasing user needs. The IT director said: “We are starting a very big journey and we don’t want to have any kind of constraint.” The IT infrastructure director said: “capacity-wise for sure that being on-prem is if we need to keep

on growing. There was going to be a time in which there were no more space, no more hardware.”

- **End-of-life hardware.** Some interviewees had faced end-of-life hardware decisions and substantial investments needed to meet business requirements. The IT infrastructure director said: “We already have running an extended support with IBM, and we were about to pretty much get into end of life.”

“We don’t want to continue in the data center business [and] manage [an on-premises solution]. We would like to use the cloud as much as possible.”

Enterprise architect, financial services

INVESTMENT OBJECTIVES

The interviewees’ organizations searched for a solution that could:

- Replace end-of-life hardware with phased deployment.
- Improve system performance.
- Provide flexibility to scale.

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four interviewees, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The global, multibillion-dollar organization has SAP deployed with on-premises hardware that is approaching end-of-life status. The composite organization has 30,000 employees at numerous locations and relies on SAP to manage finance processes, supply chain, and other critical functions.

Deployment characteristics. The composite organization takes a phased approach to deploying SAP HANA, SAP S/4HANA, and SAP Netweaver based applications on IBM Cloud and engages IBM Cloud partners to assist internal personnel with integrating the solution into the enterprise environment.

Key Assumptions

- 30,000 employees
- 100+ SAP workloads

“Business is always needing faster processes.”

IT infrastructure director, food and beverage

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Reduced operational risk from improved availability	\$607,500	\$1,215,000	\$1,215,000	\$3,037,500	\$2,469,252
Btr	Increased operational efficiency	\$576,000	\$1,152,000	\$1,152,000	\$2,880,000	\$2,341,217
Ctr	Reduced data center costs	\$318,750	\$637,500	\$637,500	\$1,593,750	\$1,295,595
Dtr	Reduced compliance and security risk	\$166,500	\$366,300	\$399,600	\$932,400	\$754,316
	Total benefits (risk-adjusted)	\$1,668,750	\$3,370,800	\$3,404,100	\$8,443,650	\$6,860,380

REDUCED OPERATIONAL RISK FROM IMPROVED AVAILABILITY

Evidence and data. Based on customer interviews, IBM Cloud for SAP improved the reliability and performance of systems at organizations. The interviewees shared the following with Forrester regarding the improved availability of SAP-supported systems:

- The IT infrastructure director at a food and beverage organization said, “In this case, we migrated production first, and then we migrated the nonproduction environments within the next couple months.”
- He added, “In our on-premises environment, [disruptions would] take up to 3 hours [to remediate], and [now] they take half of that time, [about] an hour and a half.”
- He also noted: “Recovery time [was] around 24 hours with the on-premises solution. We went back up to 10 hours to recover the infrastructure [with IBM Cloud].”

Modeling and assumptions. Forrester assumes the following in modeling the value of this benefit:

- SAP workloads are moved to IBM Cloud in a six-month phased migration in Year 1.
- Downtime on the legacy environment affects 10% of employees.
- Employees impacted by the improved availability provided by IBM Cloud for SAP avoid 1.5 hours per month, on average.
- The average fully burdened hourly salary of impacted employees is \$50.
- Fifty percent of the time saved is directed at other productive tasks.

Risks. The ability of organizations to reduce downtime to users through the deployment of IBM Cloud for SAP can vary due to differences in:

- The frequency, duration, and underlying causes of the prior disruptions.
- The ability of personnel to remediate issues impacting availability.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$2.5 million.

Reduced Operational Risk From Improved Availability					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Total employees	Composite	30,000	30,000	30,000
A2	Portion of employees impacted by downtime	Interviews	10%	10%	10%
A3	Employees impacted by downtime	A1*A2	3,000	3,000	3,000
A4	Downtime reduction per employee (hours)	Interviews	9	18	18
A5	Average fully burdened hourly salary of impacted employees	TEI Standard	\$50	\$50	\$50
A6	Productivity recapture	TEI Standard	50%	50%	50%
At	Reduced operational risk from improved availability	A3*A4*A5*A6	\$675,000	\$1,350,000	\$1,350,000
	Risk adjustment	↓10%			
Atr	Reduced operational risk from improved availability (risk-adjusted)		\$607,500	\$1,215,000	\$1,215,000
Three-year total: \$3,037,500			Three-year present value: \$2,469,252		

INCREASED OPERATIONAL EFFICIENCY

Evidence and data. Moving workloads to IBM Cloud reduced the internal effort needed to manage workloads and hardware compared to the legacy environment, as well as efforts previously spent on preparing data, analytics, and reporting. The performance and reliability improvements delivered by IBM Cloud for SAP also drove a variety of other increased operational efficiencies.

- The IT infrastructure director at a food and beverage organization said, “The change to new hardware and being in the cloud definitely made an improvement of about 30% in speed of processes.”
- He added: “We were able to leverage the team that actually supports the rest of our cloud infrastructure, so we just added those additional systems [for IBM Cloud for SAP] to them. ... They keep on supporting those systems just the way they are. ... They were able to take that

operation without adding new resources, and we’re talking about a group probably of 10 guys.”

Modeling and assumptions. Forrester assumes the following in valuing this benefit:

- SAP workloads are moved to IBM Cloud in a six-month phased migration in Year 1.

“We maintain the same procedures and redundancy that we had on premise. However, we’re able to recover faster than on-premises. That will give us more stability for our business.”

IT infrastructure director, food and beverage

- The composite organization needs 10 FTEs to manage SAP workloads and data with the legacy environment.
- Internal efforts needed to manage SAP workloads and related data, analytics, and reporting are reduced by eight FTEs with IBM Cloud.
- The average fully burdened annual salary for FTEs managing SAP workloads and data is \$160,000.

Risks. The ability of organizations to increase operational efficiency through the deployment of IBM Cloud for SAP can vary across organizations due to differences in:

- The complexity of existing workloads.
- The ability of personnel to be assigned to other value-added activities.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of more than \$2.3 million.

Increased Operational Efficiency					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	FTEs needed to manage workloads in legacy environment	Composite	10	10	10
B2	FTEs needed to manage workloads with IBM Cloud for SAP	Interviews	6	2	2
B3	Blended annual salary for FTEs managing SAP workloads	TEI Standard	\$160,000	\$160,000	\$160,000
Bt	Increased operational efficiency	(B1-B2)*B3	\$640,000	\$1,280,000	\$1,280,000
	Risk adjustment	↓10%			
Btr	Increased operational efficiency (risk-adjusted)		\$576,000	\$1,152,000	\$1,152,000
Three-year total: \$2,880,000			Three-year present value: \$2,341,217		

REDUCED DATA CENTER COSTS

Evidence and data. IBM Cloud for SAP gave organizations the ability to move critical workloads from on-premises data centers to the cloud, reducing the need for large capital expenditures on hardware, the cost of power and cooling, and additional expenditures for disaster recovery sites.

- The IT infrastructure director at a food and beverage organization said: “The business case was based on what I would need to pay for new hardware because I cannot leave critical infrastructure like that without any support. If I did not migrate to a cloud, I’ll need to pay for new hardware and [the cost of] that new hardware

was super high.” When asked about the total projected hardware cost to replicate the value received from IBM Cloud for SAP, he said: “About \$8 [million] to \$10 million.”

- The IT infrastructure director added: “We have our additional data center in a different location to our main data center premise hosting a replica of our SAP environment. ... As soon as we migrated to [IBM] Cloud, we were able to cancel that contract [and save] about \$600,000 per year.”
- The enterprise architect at a financial services organization told Forrester: “There has been a reduction in energy consumption. ... We have

been seeing around 25% actual reduction ... around \$100,000 to \$150,000 a year that we have been saving.”

Modeling and assumptions. Forrester assumes the following in quantifying this benefit:

- SAP workloads are moved to IBM Cloud in a six-month phased migration in Year 1.
- The composite analysis avoids infrastructure costs worth \$600,000 per year needed to replicate disaster recovery or other capabilities provided by IBM Cloud for SAP.
- Energy consumption costs are reduced by \$150,000 per year.

Risks. The ability of organizations to reduce data center costs through the deployment of IBM Cloud for SAP Solutions can vary due to differences in:

- The presence of legacy technologies.

- The ability and willingness of organizations to retire these solutions.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$1.3 million.

“We need to grow [and] need [a solution that will] not have any bottleneck or constraint or surprise. This is why we put in place [IBM Cloud for SAP].”

IT director, manufacturing

Reduced Data Center Costs					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Avoided infrastructure cost	Composite	\$300,000	\$600,000	\$600,000
C2	Reduced energy consumption	Composite	\$75,000	\$150,000	\$150,000
Ct	Reduced data center costs	C1+C2	\$375,000	\$750,000	\$750,000
	Risk adjustment	↓15%			
Ctr	Reduced data center costs (risk-adjusted)		\$318,750	\$637,500	\$637,500
Three-year total: \$1,593,750			Three-year present value: \$1,295,595		

REDUCED COMPLIANCE AND SECURITY RISK

Evidence and data. The migration of SAP workloads to IBM Cloud created efficiencies for personnel involved in various compliance and security processes. These efficiencies freed up resources to focus on improving processes and controls and other aspects of the environment, thus reducing risk.

- The IT infrastructure director at a food and beverage organization said: “We were able to reduce the risk of end-of-life hardware and security vulnerabilities. We reduced that to zero because we’re now in an infrastructure with new hardware, [a] new environment, [and] with all the security patches and security vulnerabilities covered.”

- The enterprise architect at a financial services organization explained, “There are multiple teams that work those as part of this strategy setting. Our time [is] freed up actually to build up better security controls.”

Modeling and assumptions. Forrester assumes the following to value this benefit:

- SAP workloads are moved to IBM Cloud in a six-month phased migration in Year 1.
- Once SAP workloads are fully migrated to IBM Cloud, the composite organization is able to manage compliance- and security-related tasks with 50% of the effort needed for the legacy solution.

- The fully loaded annual salary for personnel managing compliance- and security-related tasks for SAP workloads is \$148,000.

Risks. The ability of organizations to increase compliance and security efficiency through the deployment of IBM Cloud for SAP can vary due to differences in:

- Security and compliance requirements.
- The ability to assign compliance and security personnel to other value-added activities.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$754,000.

Reduced Compliance And Security Risk					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	FTEs needed to manage compliance and security in legacy environment	Composite	5.00	5.50	6.00
D2	FTEs needed to manage compliance and security with IBM Cloud	Interviews	3.75	2.75	3.00
D3	Fully loaded annual salary for FTEs managing compliance and security	TEI Standard	\$148,000	\$148,000	\$148,000
Dt	Reduced compliance and security risk	(D1-D2)*D3	\$185,000	\$407,000	\$444,000
	Risk adjustment	↓10%			
Dtr	Reduced compliance and security risk (risk-adjusted)		\$166,500	\$366,300	\$399,600
Three-year total: \$932,400			Three-year present value: \$754,316		

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

- Time to value.** Interviewees expressed satisfaction with the process of migrating to IBM Cloud and offered examples in which the time to value for their organizations was expedited with IBM. The IT infrastructure director at a food and beverage organization said: “The overall project and the migration was very complex in a very

critical environment. There were very few spaces for mistakes, and there was no real impact to the users besides the overall 24-hour window that we had for the cutover and the final migration for production.”

He also explained how IBM Cloud for SAP expedited delivery of critical reports and analytics, providing crucial insights for the organization faster than before. He said: “For the month end, there’s a KPI that measures how many days after the end of a month you report

your financials to global. It was five days, but there was a constant push to report that [in] under three days. ... They've actually been able to report within those three days."

- **Data transfer optimization.** The IT infrastructure director explained how efficiencies are gained on data transfers between systems: "We still have systems in on-premises, we have systems in a different cloud, we have systems in IBM Cloud — so all that communication goes through that main stream, but at the end of the day, I believe we were able to optimize that pretty well because several communications are flowing within clouds. There's no need to go down to our data center and then go up again. They're all happening between them, so that's actually even faster in some way."

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Cloud for SAP and later realize additional uses and business opportunities, including:

- **Extending SAP to build intelligent workflows.** The global strategy director at an insurance company told Forrester about the vision his organization had for SAP on IBM Cloud: "There are a number of areas you can get into and a number of benefits as you get more cloud-native." Some examples they offered include "real-time review for underwriting and claims, pricing sophistication, consolidating data from multiple sources to quickly drive decision-making, and more innovative use cases that we hadn't considered before, [such as] AI/ML [and] microservices. You can do more work with the actual cloud migration, and you can also do things like REST (representational state transfer) APIs or other things within your tech stack to help you to improve there."
- **Support sustainability initiatives.** The IT director at a manufacturing organization

explained: "We collect a lot of information about our supply chain, and now we will be [integrating an acquisition that will] produce for us in the field to provide to the consumer [information on] the vessel that caught the fish that is inside the can. ... The final consumer can have all the life of the product in order to be really transparent in this pathway. [It] is important to demonstrate that we are taking care of the fish [and] the ocean. ... [This] needs to be demonstrated with facts, not only with declaration, and this is another example where we are using IBM Cloud in full different segments of an ERP project."

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

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs						
Ref.	Cost	Year 1	Year 2	Year 3	Total	Present Value
Etr	IBM Cloud for SAP solution	\$757,240	\$554,400	\$677,600	\$1,989,240	\$1,655,673
Ftr	Internal efforts to integrate solution	\$270,160	\$202,620	\$135,080	\$607,860	\$514,542
Gtr	Training time	\$23,364	\$3,894	\$3,894	\$31,152	\$27,384
	Total costs (risk-adjusted)	\$1,050,764	\$760,914	\$816,574	\$2,628,252	\$2,197,599

IBM CLOUD FOR SAP SOLUTION COST

Evidence and data. IBM Cloud for SAP offers flexible consumption-based pricing that allows organizations to easily scale up and down as workload requirements evolve.

IBM provided an estimate of the solution cost based on the composite organization's deployment, which assumes that the organization leverages the guidance and expertise of an IBM Cloud partner to assist with the migration of more than 100 SAP workloads and ongoing infrastructure support.

Modeling and assumptions. The composite organization's transition to IBM Cloud involves migrating existing workloads over a six-month period and ongoing cloud infrastructure support costs.

- Usage costs increase as additional capacity is consumed, resulting in costs of \$370,000 in Year 1, \$450,000 in Year 2, and \$550,000 in Year 3.
- Migration cost is 20% of the total cloud usage costs in Years 1 to 3.
- Cloud infrastructure support cost is 12% of the annual usage cost.

Risks. The cost of IBM Cloud, migration, and ongoing support can vary across organizations due to differences in the configuration, consumption, and potential discounts based on vendor and volume.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$1.7 million.

IBM Cloud For SAP Solution					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	IBM Cloud usage	Composite	\$370,000	\$450,000	\$550,000
E2	Migration costs	(Sum E1 Years 1 to 3) * 20%	\$274,000		
E3	Infrastructure support	E1 * 12%	\$44,400	\$54,000	\$66,000
Et	IBM Cloud for SAP solution	E1+E2+E3	\$688,400	\$504,000	\$616,000
	Risk adjustment	↑10%			
Etr	IBM Cloud for SAP solution (risk-adjusted)		\$757,240	\$554,400	\$677,600
Three-year total: \$1,989,240			Three-year present value: \$1,655,673		

INTERNAL EFFORTS TO INTEGRATE SOLUTION

Evidence and data. Interviewees discussed varying levels of planning and implementation efforts from internal personnel to facilitate the integration of IBM Cloud for SAP.

- The IT infrastructure director at a food and beverage organization said: “The project duration was ... around seven months for the migration of our [primary] instance. In terms of effort, we actually had to dedicate four individuals from different teams ... and they had all the support from the IBM team from this other partner that helped us with the migration.”

Modeling and assumptions. Forrester assumes the following in quantifying the cost of internal efforts to integrate the solution:

- A team of four people spend 50% of their time over six months, on average, on testing, planning, and piloting the solution and migrating more than 100 workloads to IBM Cloud.
- The average fully loaded annual salary for a cross-functional integration team member is \$122,800.

Risks. The cost of internal effort to integrate the solution can vary across organizations due to differences in:

- The size and complexity of environments.
- The experience and skill set of internal staff.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$514,000.

Internal Efforts To Integrate Solution					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
F1	FTEs for deployment and integration efforts	Composite	2.00	1.50	1.00
F2	Average fully loaded annual salary for integration team	TEI Standard	\$122,800	\$122,800	\$122,800
Ft	Internal efforts to integrate solution	F1*F2	\$245,600	\$184,200	\$122,800
	Risk adjustment	↑10%			
Ftr	Internal efforts to integrate solution (risk-adjusted)		\$270,160	\$202,620	\$135,080
Three-year total: \$607,860			Three-year present value: \$514,542		

TRAINING TIME

Evidence and data. Interviewees discussed some training and learning time needed by internal personnel responsible for managing workloads and other aspects of the IBM Cloud for SAP. Training time varied from a few hours to a week during deployment and some additional hours in subsequent years.

Modeling and assumptions. Forrester assumes the following in quantifying this cost:

- In Year 1, 15 FTEs take three days (24 hours) of training each to facilitate the deployment and integration of the solution.

- In Years 2 and 3, 15 FTEs take one-half day (4 hours) of training to understand new features, functionality, and updates.
- The average fully loaded hourly salary for the personnel managing the solution is \$59.

Risks. The cost of training can vary across organizations due to differences in the experience and skill set of IT personnel.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$27,000.

Training Time					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
G1	FTEs requiring training	Composite	15	15	15
G2	Hours of training	Interviews	24	4	4
G3	Average fully loaded hourly salary	Assumption	\$59	\$59	\$59
Gt	Training time	$G1 \times G2 \times G3$	\$21,240	\$3,540	\$3,540
	Risk adjustment	↑10%			
Gtr	Training time (risk-adjusted)		\$23,364	\$3,894	\$3,894
Three-year total: \$31,152			Three-year present value: \$27,384		

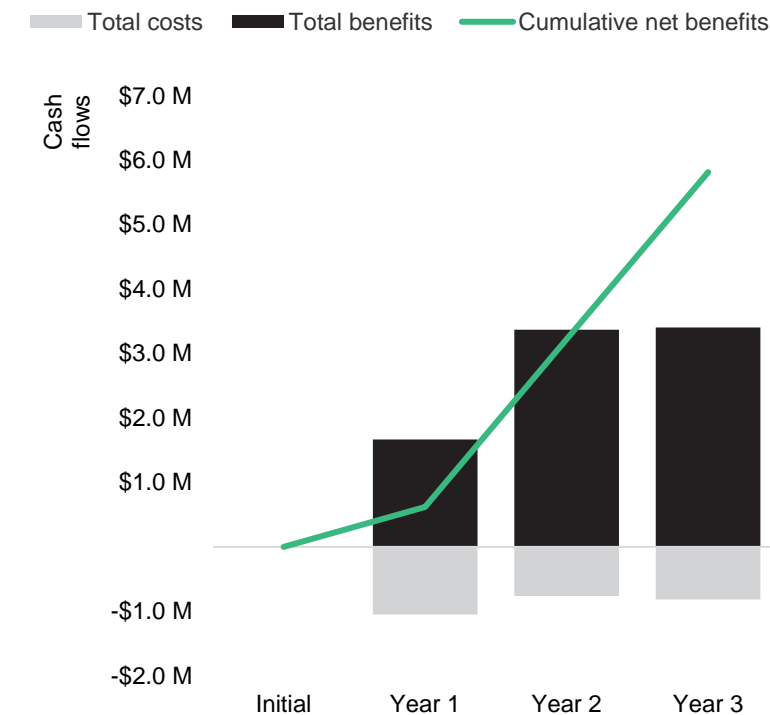
“We’re now able to grow as much as we want. We do not have any restrictions in terms of capacity.”

— IT infrastructure director, food and beverage

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 composite 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 Analysis (Risk-Adjusted Estimates)						
	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	\$0	(\$1,050,764)	(\$760,914)	(\$816,574)	(\$2,628,252)	(\$2,197,599)
Total benefits	\$0	\$1,668,750	\$3,370,800	\$3,404,100	\$8,443,650	\$6,860,380
Net benefits	\$0	\$617,986	\$2,609,886	\$2,587,526	\$5,815,398	\$4,662,781
ROI						212%

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 Sources are calculated for each total cost and benefit estimate. NPV Sources in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value Sources 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%.

Appendix B: Endnotes

¹ 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.

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