

Manufacturing Organizations Enhance The Resilience And Scalability Of Their Supply Chains By Hosting SAP On Google Cloud

Growth And Modern Infrastructure Drive Manufacturing Organizations To Migrate SAP Onto Google Cloud

According to Forrester, manufacturers seeking to embrace the next generation of smart manufacturing technologies will fail without a reliable enterprise resource planning (ERP) infrastructure. Even as organizations look to modernize their infrastructure, many have kept ERP infrastructure on-premises for fear of disrupting critical business processes during a migration or experiencing a significant downtime event. SAP has long been a key player in the ERP market, and many organizations are looking for a solution that can modernize their SAP infrastructure to become more flexible and reliable while reducing the cost and labor burden of managing and securing an on-premises solution.¹

As manufacturing organizations adapt to an expanding digital marketplace, they are increasingly looking for cloud-based solutions that leverage organizational data to provide greater flexibility in meeting customer demands. Google Cloud gives internal IT teams and business leaders in the manufacturing industry peace of mind by automating previously manual processes, enabling real-time data reporting capabilities to improve supply chain management, and improving organizational security with Google Cloud's built-in security features.

Older, on-premises solutions with siloed data and VPN requirements can make it difficult for employees on the manufacturing floor and field representatives to communicate with HQ. A manager of branch operations in the industrial manufacturing industry spoke to Google Cloud's ability to alleviate these problems: "The No. 1 thing this migration has done for us is putting our critical customer data in a secure place where people can use it to grow our business. Putting this data in the hands of our salespeople, our service people, and our people in the field will enable them to make solid, data-driven strategic decisions. They can take great care of our customers and ultimately take the best care of our future business growth. And all while doing it in a way that enables them to collaborate as a team and deploy and grow globally with fewer limitations than we had before."

To highlight some of the ways that migrating and running SAP on Google Cloud can help all organizations attract, retain, and delight customers, Google Cloud commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential financial impact of migration and running SAP on Google Cloud for Google Cloud customers. You can download the [full TEI study](#) and an [infographic highlighting the results](#).

For this spotlight, Forrester interviewed three manufacturing organizations with experience migrating their SAP infrastructure from an on-premises solution onto Google Cloud. Interviewed manufacturing organizations included the following:

SUMMARY

Spotlight on the impact of hosting SAP on Google Cloud for manufacturing organizations. Based on a commissioned study, "The Total Economic Impact SAP on Google Cloud," July 2020.

"Our main priority was making sure our HQ was not a single point of failure for our SAP infrastructure. As soon as we migrated our systems onto Google Cloud, there was no longer a single-point of failure and it greatly improved the reliability of our infrastructure."

Technical development manager, consumer packaged goods

INDUSTRY	REGION	INTERVIEWEE
Consumer packaged goods	Europe	IT manager
Industrial manufacturing/sales	Global	Manager of branch operations
Food and beverage	MENA	IT director

This spotlight will focus on the manufacturing journey with hosting SAP on GC and its value to their organizations.

Investment Drivers For Manufacturing Organizations

Interviewed manufacturing organizations were limited by their on-premises SAP deployments. Interviewees found it difficult to scale operations in a cost-effective way, experienced consistent connectivity and processing issues for supply chain reporting, and found it challenging to properly and confidently secure their critical SAP infrastructure.

These factors drove manufacturing organizations to invest in a better solution by migrating their SAP infrastructure out of their on-premises environments and onto Google Cloud.

- › **Scaling business operations without the limitations of hardware.** Interviewed manufacturing organizations were searching for IT infrastructure that would enable them to scale operations in a cost-effective manner as they penetrated global markets and scaled their businesses. On-premises SAP deployments required significant investments in hardware and capacity planning without providing the flexible infrastructure that manufacturing organizations required to quickly respond to customer needs and accommodate near- and long-term growth.

The manager of branch operations in the industrial manufacturing industry said: “Dealing with our speed of growth was another challenge because of the amount of traditional hardware we would need to deploy with. That was a pain point for us.”

- › **Modernizing organizational infrastructure to improve employee experience and productivity.** Manufacturing organizations sought to upgrade their SAP infrastructure in an effort to make daily business more mobile-friendly, increase overall user experience, and improve communication lines between field, office, and manufacturing floor employees.

The manager of branch operations in the industrial manufacturing industry explained: “It’s really quite comical because if you are a salesperson, you were tied to your laptop. In the past, to find the customer data you needed, you would have to get in your car, open your laptop, dial into your VPN, pull up the CRM, and then look at the interaction history. Well, that process takes at least 10 minutes, and that’s probably being generous. Now, you can pull out your mobile phone, click on the app, and search for the customer. You’ve got everything at your fingertips in 2 minutes or less. It’s a really big difference for us with Google Cloud.”

- › **Enhancing security for critical SAP applications.** Interviewed manufacturing organizations relied heavily on their SAP infrastructure to manage business-critical data and processes, with security being a paramount concern. Legacy, on-premises solutions for hosting SAP did not provide the robust security portfolio that Google Cloud offered. As a result, manufacturing organizations sought to divest their resources away from aging, legacy solutions and take advantage of the cloud-based security that Google Cloud provides.

“One of our pain points was integrating field and office communications. Other than standard landline, we didn’t have any other communication methods and even then, email was difficult. So integrating field and office communication was a big challenge for us, as was preparing for a mobile future, product presentations, and quoting — basically just allowing more business to happen from mobile devices was a big factor in our decision to migrate SAP onto Google Cloud.”

Manager of branch operations, industrial manufacturing

“We are moving from our existing office to a new building, and now we can just take our laptops and go. Earlier, this would have been a nightmare for us, shifting all the lines of the data center from here to the new office. That would have been a three-month project including building a net-new data center, two to three days of downtime, and shifting the whole thing into a new building. Now, it’s like we are completely free. There is nothing left in the building; we can go anytime.”

IT director, food and beverage

Results Realized By Manufacturing Organizations Using SAP On Google Cloud

After partnering with Google Cloud and implementing the migration, manufacturing organizations began experiencing the benefits of hosting SAP on Google Cloud. Interviewed manufacturing organizations shared the following impacts after implementing the solution:

- › **Prevented unplanned downtime events and supply chain delays.** Before migrating to Google Cloud, interviewed organizations struggled with both planned and unplanned downtime, costing money and sometimes causing delays in the supply chain. However, after migrating their SAP infrastructure onto Google Cloud, Google's ≥ 99.99% uptime service-level agreement (SLA) eliminated these delays by reinforcing the supply chain with real-time updates.

The IT director in the food and beverage industry commented: "Sometimes we would have downtime issues, and it would be disastrous, especially in the early morning around 1 :00 a.m. or 2:00 a.m. This is a busy time when restaurants are closing, trucks are being loaded, and so on. If these issues prevent our trucks from loading, or if they are not able to enter cities before a certain time due to local regulation, all of our trucks will be stuck and will not be able to deliver necessary supplies to our stores and warehouses. These downtime events can be extremely expensive."

- › **Freed up organizational resources dedicated to capacity planning.** Prior to migrating their SAP infrastructure onto Google Cloud, manufacturing organizations were expending significant resources on capacity planning to ensure the organization would have the necessary storage and processing power to meet future needs. With Google Cloud, these organizations were able to spin SAP instances up and down with predictable costs and very little labor. The transition of SAP infrastructure costs from capex to an opex model meant that these resources dedicated to meticulous capacity planning could be reallocated toward higher-value initiatives instead.

An IT director in the consumer packaged goods industry commented on the reduced effort required for capacity planning with SAP on Google Cloud: "Since we migrated our SAP infrastructure onto Google Cloud, I no longer have to worry about specking out, doing capacity planning for new hardware, and worrying about lease outs every three years. Now it's the Google Cloud team who has to worry about the hardware. I don't really need to worry about hardware failures or anything like that. Google Cloud handles all of it."

- › **Increased sales enabled by access to more accurate customer data.** Interviewed manufacturing organizations were able to drive business growth and better manage their customer relationships as a result of their sales representatives having better access to data and more detailed, higher-quality data.

The manager of branch operations in the industrial manufacturing industry commented: "Google Cloud is a robust platform. Once you've got a nice, hard connection, you're going. Even for the office folks, they have benefitted from the increased visibility into our data. For our marketing department, having more detail in each customer record and knowing that the data quality is getting better as our field representatives have the ability to update it are big benefits."

"Folks are definitely happier since the migration. In general, folks are happier when you feel like you're more positioned to take care of customers. I think that was always in the back of people's heads like, 'Oh, I haven't checked my email in 2 hours,' and, 'Oh, what's the status on that order? I don't know if it got held up or if the credit was approved.' So just knowing that you can check your status when you need to helps people focus on the work they have to do and not think about, 'Am I missing something?' I think that's a big one."

Manager of branch operations, industrial manufacturing

"One of the big advantages, I would say, of hosting our SAP infrastructure on Google Cloud is that the downtime is minimal to none. We have yet to see where we have had to take an extended outage of anything in Google Cloud to fix anything hardware related so to speak."

IT director, food and beverage

Total Economic Impact Summary

Turning focus to SAP customers, Google Cloud commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential financial impact of the solution on businesses. Forrester interviewed six organizations leveraging the solution to learn about its impact on practices at their organization.

Forrester aggregated and analyzed data from the interviews to form a composite organization and associated financial analysis. Forrester found that SAP on Google Cloud delivered \$15.4 million in benefits versus \$5.9 million in costs over three years, adding up to a net present value (NPV) of \$9.5 million, a payback period less than six months, and an ROI of 160%.

Financial results are based on the composite organization, while the summary focuses on the experiences of the interviewed organizations. You can download the [full TEI study](#) and an [infographic highlighting the results](#).

“With Google Cloud, we have zero downtime and improvements to both performance and security. And the employees are extremely happy.”

IT director, food and beverage



ROI
160%



Benefits PV
\$15.4 million



Costs PV
\$5.9 million



Payback
<6 months

The SAP On Google Cloud Customer Journey

For this study, Forrester conducted six interviews with SAP on Google Cloud for customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	ANNUAL REVENUE
Food and beverage	MENA	IT director	\$350M
Consumer electronics	Europe	Product owner	\$22B
Consumer packaged goods (CPG)	Europe	Technical development manager	\$1B
Consulting	Global	Managing director of technology	\$25B
Industrial manufacturing/sales	Global	Manager of branch operations	\$1B
Consumer packaged goods (CPG)	Global	IT manager	\$16B

Key Challenges

Manufacturing organizations adopting Google Cloud had similar goals to the other interviewed organizations including the following:

- › **Scaling SAP infrastructure effectively while experiencing growth.** Interviewed organizations expressed their desire to manage their SAP infrastructure in a more cost-effective and flexible manner as they scaled operations.
- › **Improved security posture.** With so many business-critical processes reliant on

SAP infrastructure in each interviewed organization, improving security was top of mind for several interviewees. Older legacy systems were not able to adapt and prevent modern cybersecurity threats, and organizations enjoyed the peace of mind that Google Cloud's security suite afforded them.

- › **Preparing for a mobile future.** As a part of wider organizational strategies toward enabling business to happen anywhere on any device, interviewed organizations sought to make components of their critical IT infrastructure more accessible from mobile devices.

Key Results

Interviewed organizations from other industries shared similar experiences to manufacturing organizations after migrating their SAP infrastructure onto Google Cloud.

- › **Significantly reduced downtime.** With Google Cloud, interviewees reported no downtime after migrating their SAP architecture onto Google Cloud. As interviewed organizations rely on SAP for so many business-critical processes, these reductions in downtime drove both significant savings and enhanced employee experiences.
- › **A cloud-based platform that enabled greater organizational flexibility.** Unlike their legacy solutions, interviewed organizations reported that Google Cloud enabled IT teams to easily spin up and down instances of SAP depending on their needs. Sandboxing new environments was much easier, with developer resources requiring less time and effort for internal coordination.
- › **Reduced effort and peace of mind for IT professionals.** Interviewed organizations stated that their IT teams benefited significantly from the migration onto Google Cloud, as it increased their productivity while simultaneously mitigating risks. The security architecture and cloud-based backups that Google Cloud provides reduced liability for IT professionals. Interviewees also stated that with the time Google Cloud saved their IT teams, they were able to reallocate resources into high-value projects for which they did not initially have time.

"We've seen improvements to performance, less downtime, and less maintenance cost. Earlier, we had two to three IT members supporting all the infrastructure communication, all of those things. Now it's expected and decentralized. So, even if there is a single point of failure in our data center, the system still works. These are very real advantages we have noticed after migrating SAP onto Google Cloud."

IT director, food and beverage

Composite Organization

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization is representative of the six companies that Forrester interviewed and the responses of the 95 decision makers whom Forrester surveyed; the composite is used to present the aggregate financial analysis in the next section. The composite organization that Forrester synthesized from the customer interviews has the following characteristics:

The global, publicly traded, \$5-billion conglomerate has a centralized headquarters and regional locations around the world. In addition to offices, the organization has warehouse and supply chain considerations that rely on SAP infrastructure for daily logistics reporting and tracking. The organization has completed its migration of SAP instances to Google Cloud, including migrating a HANA environment.

Before investing in Google Cloud for SAP, the organization spent a significant amount of its annual IT budget on on-premises hardware, software, and maintenance and was planning a new data center buildout before deciding to invest in Google Cloud.

The organization has daily reporting requirements that impact its supply chain logistics and frequently experienced downtime or issues related to these reports. Additionally, weekly financial reports were relayed to the global HQ to meet financial reporting requirements, and these reports were frequently delayed or encountered errors in processing.

The organization releases two iterative or new SAP releases each year to deliver new and



Key assumptions

Two SAP releases per year

\$3M per year spent on legacy SAP hardware infrastructure

Frequent issues related to data processing and financial reporting

updated capabilities to the business. Testing and deploying these SAP releases often resulted in unexpected issues, delaying deployment timelines.

After migrating the SAP infrastructure to Google Cloud, the organization continues to run parts of its legacy deployment in parallel before retiring the legacy infrastructure entirely in Year 2.

Benefit Analysis

Interviewed organizations that migrated SAP onto Google Cloud realized cost savings from retired hardware, efficiency gains for employees, and improved supply chain management. These results, modeled by the composite organization, include:

- › **Avoided costs related to running and supporting legacy solutions.** By retiring on-premises infrastructure related to SAP, the composite organization saves over \$2.3 million annually on associated hardware, software, and other operating costs. As a result of shrinking the on-premises footprint, the composite organization also reduces its monthly energy consumption.
- › **Eliminated costs associated with unplanned downtime.** Google Cloud's SLA with $\geq 99.99\%$ guaranteed uptime prevents unplanned outages, providing relief to organizations that are heavily reliant on an active supply chain. Migrating SAP infrastructure onto Google Cloud prevents downtime events for the composite, saving over \$1.5 million annually.
- › **Enhanced productivity for frontline workers.** As the migration onto Google Cloud improved network performance and reliability, employees who frequently leveraged SAP reporting experienced fewer system delays and greater productivity as a result. The total efficiency gains for the business users and frontline workers totals about \$522,000 per year for the composite organization.

For the full calculation tables on each benefit category, please review the full TEI study.

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Avoided on-premises hardware, software, and other operating costs	\$2,327,500	\$3,182,500	\$3,182,500	\$8,692,500	\$7,137,134
Btr	Avoided cost of downtime	\$1,530,000	\$1,530,000	\$1,530,000	\$4,590,000	\$3,804,884
Ctr	Productivity improvement for business and frontline workers	\$522,237	\$522,237	\$522,237	\$1,566,712	\$1,298,727
Dtr	Efficiency gains for IT team	\$510,300	\$510,300	\$510,300	\$1,530,900	\$1,269,041
Etr	Development effort reduced for SAP releases/updates	\$323,190	\$323,190	\$323,190	\$969,570	\$803,726
Ftr	Improved supply chain management efficiency	\$426,600	\$426,600	\$426,600	\$1,279,800	\$1,060,891
	Total benefits (risk-adjusted)	\$5,639,827	\$6,494,827	\$6,494,827	\$18,629,482	\$15,374,403

Costs Analysis

Before migrating SAP to Google Cloud, organizations complained of expensive on-premises environments that were challenging to manage and did not meet the evolving needs of the business. During the start of the migration, the composite organization allocates 10 full-time

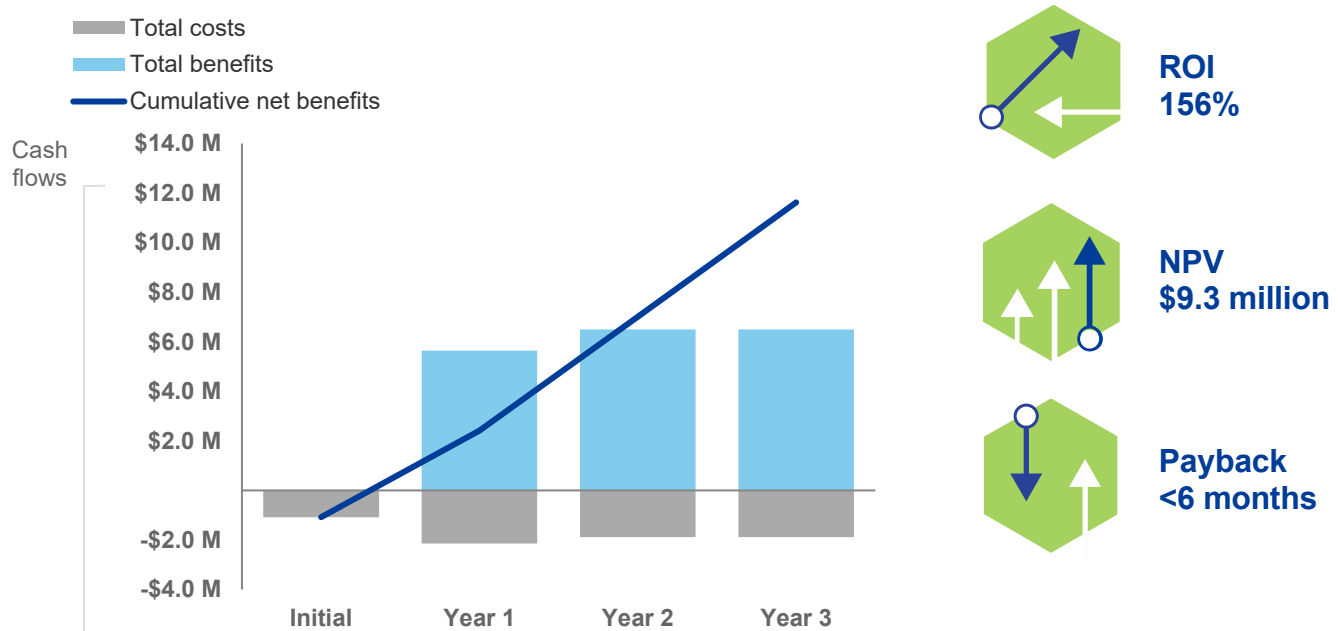
employees spending half of their time on initial testing for six months. After this period, this team decreases to four full-time employees for the rest of the year, with a singular full-time employee dedicating half of their time to testing and migration during subsequent years. In addition, the 15-person SAP team requires 16 hours of initial training; and an additional 4 hours of training each of the following years. These costs are reflected in the implementation and ongoing support figure. The licensing cost for Google Cloud's services is at \$1.8 million per year to reflect the size of this organization and the size of its SAP deployment.

Total Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Gtr	Google Cloud fees	\$0	\$1,800,000	\$1,800,000	\$1,800,000	\$5,400,000	\$4,476,334
Htr	Implementation and ongoing support	\$975,127	\$345,107	\$89,957	\$89,957	\$1,500,147	\$1,430,791
	Total costs (risk-adjusted)	\$975,127	\$2,145,107	\$1,889,957	\$1,889,957	\$6,900,147	\$5,907,125

Financial Summary

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 in SAP on Google Cloud. Forrester assumes a yearly discount rate of 10% for this analysis.



For more information, you can download the full SAP on Google Cloud TEI analysis [here](#).

Disclosures

The reader should be aware of the following:

- › The study is commissioned by Google Cloud and delivered by Forrester Consulting. It is not meant to be 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 Google Cloud for SAP.
- › Google Cloud reviewed and provided feedback to Forrester. 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.
- › Google Cloud provided the customer names for the interviews but did not participate in the interviews.

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ABOUT TEI

Total Economic Impact™ (TEI) is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders. The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility. <https://go.forrester.com/consulting/content-marketing-consulting/>

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Appendix A: Endnotes

¹ Source: “The Forrester Tech Tide™: Smart Manufacturing, Q2 2020,” Forrester Research, Inc. April 1, 2020.