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Authors:
Cushing Anderson
Matthew Marden

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Business Value Highlights

671%
three-year ROI

5 months
to payback

15%
average higher gross SAP
user productivity

30%
more efficient business
processes teams

31%
more efficient incident
response teams

16%
more efficient help desk
teams

21%
more efficient security teams

The Business Value of Higher-Performing and More Efficient SAP Environments with SAP User Experience Management by Knoa

EXECUTIVE SUMMARY

Enterprise systems are designed to improve organizational consistency, efficiency and, ultimately, client success. But implementing or upgrading new enterprise software is complex, and success can be confounded by a range of barriers that drain the benefits from a project.

Deployment problems, delays, and unmet expectations are frustrating to employees and clients. To be most successful at improving the value of enterprise systems during and after deployment, enterprises must monitor use and ongoing performance of enterprise systems and quickly respond to issues. And this requires timely information and rapid, accurate responses.

Typically, understanding the end-user experience and prioritizing targeted improvement to processes or transactions has been time consuming and difficult. It has often involved surveys, direct observations, or categorizing and interpreting help desk tickets. These approaches are always incomplete and almost always include anecdotal evidence or are based on opinion or interpretations.

Arriving at a deeper understanding of how business teams interact with core business applications helps companies gain valuable performance insights and optimize best practices for making process improvements. Tracking user practices before and after process improvement projects and measuring the impact of collaboration efforts can help address these challenges. SAP's User Experience Management (UEM) by Knoa is software designed to seamlessly and automatically collect precise productivity metrics to determine whether a system is functioning properly and whether a business user is effectively using SAP applications by leveraging best practices.

For this white paper, IDC interviewed organizations using UEM by Knoa to understand, validate, and quantify its value in optimizing their use of SAP platforms and business applications. IDC quantified the annual business value of UEM by Knoa at \$2.18 million per year on a per organization basis, resulting in an average three-year ROI of 671% by:

- Optimizing business processes by increasing employee productivity related to SAP applications
- Supporting more effective employee utilization of SAP applications by encouraging use of new features, monitoring, understanding use patterns, and proactively addressing employee errors
- Offering more tailored and relevant training to employees based on actual usage patterns of SAP applications
- Improving the efficiency of teams responsible for deploying and supporting SAP applications, including incident response, help desk, and security teams

SITUATION OVERVIEW

The goal of most enterprise system deployments is to improve organizational consistency, efficiency and, ultimately, improve client success. Implementing enterprise software is complex, and there are a wide range of issues and barriers that can drain the benefits from a project.

According to Carnegie Mellon University (see Pertet and Narasimhan, *Causes of Failure in Web Applications*, CMU-PDL-05-109, December 2005), up to 80% of problems related to new systems are related to enterprise-introduced configuration errors, capacity or throughput problems, or user-related mistakes. The cost of those errors can be measured in money, time, and frustration for both employees and clients.

To overcome these problems and maximize the value of enterprise systems during and after deployment, enterprises must monitor use and ongoing performance of enterprise systems to confidently identify issues, apply remediation, and monitor for improvement in performance. Monitoring system and user performance requires timely, granular information that can inform actionable insights and rapid, accurate responses.

Typically, understanding the end-user experience and prioritizing targeted improvement to processes or transactions has been time consuming, difficult, and error prone. It has often involved surveys, direct observations, or categorizing and interpreting help desk tickets.

Because the process is time consuming, these approaches are nearly always incomplete and almost always include anecdotal evidence or are based on opinion or interpretations. And in the end, these approaches are best at identifying overarching issues but are not successful at identifying issues that are unique to one population, location, system module, or process.

SAP UEM BY KNOA OVERVIEW

SAP User Experience Management by Knoa provides visibility to drive adoption and optimize use by enterprise application users. SAP UEM provides insight into how employees interact with SAP applications and helps measure impact on day-to-day operations. It also can help increase adoption of enterprise applications and maximize the value and benefit of the enterprise application investment. It does this by providing:

- Comprehensive workflow showing users' actual work patterns
- Contextual information for user-specific insights
- User segmentation to pinpoint top and bottom performers within a group
- Automatic communications to users affected by a change
- Real-time alerts to uncover issues before they impact the business

The SAP User Experience Management by Knoa gives enterprise leaders insight into how employees interact with their enterprise solutions. By more thoroughly understanding key business functions, SAP UEM can enable users to be more productive. SAP UEM by Knoa can:

- Monitor user/application interactions to identify usability issues
- Measure software response time to identify system performance problems and user impact
- Pinpoint training needs to maximize return on training investment
- Provide insights into application usage, adoption, and policy compliance
- Reduce help desk calls and end-user support costs (lower end-user support costs by reducing help desk calls)

THE BUSINESS VALUE OF SAP UEM BY KNOA

Study Demographics

IDC conducted research that explored the value and benefits of using SAP UEM by Knoa to support SAP platforms and applications crucial to a variety of key business activities. It included eight interviews with organizations with experience and knowledge of the software’s benefits and costs. Interviews were in-depth in nature and covered a variety of quantitative and qualitative topics about the impact of SAP UEM by Knoa on SAP application performance, user behavior, training efficacy, and business and IT initiatives.

Table 1 presents study demographics and profiles. Organizations interviewed had an average of 16,494 employees and average annual revenue of \$10.33 billion. Broken out by geography, four companies were based in the United States, two in Brazil, and the two remaining in Russia and Argentina. There was a good mix of vertical industries represented including the consumer goods, food production, industrial distribution, manufacturing, steel and mining, utilities (2), and wholesale distribution segments.

TABLE 1 Firmographics of Interviewed SAP Customers

	Average	Median
Number of employees	16,494	9,000
Number of IT staff	386	300
Number of business applications	170	100
Revenue per year (billion)	\$10.33	\$5.25
Countries	United States (4), Argentina, Brazil (2), and Russia	
Industry	Consumer goods, food production, industrial distribution, manufacturing, steel and mining, utilities (2), and wholesale distribution	

Source: IDC, 2019

Choice and Use of SAP UEM by Knoa

Interviewed organizations uniformly stressed the need to optimize their use of SAP applications as driving their decision to deploy SAP UEM by Knoa. They concluded that inefficient and suboptimal use of SAP applications carried significant costs to their organizations, magnified because of the business-critical nature of their SAP environments. Specifically, by deploying SAP UEM by Knoa, respondents sought to better understand user

behavior and application performance. With this information, they could properly assess how to better leverage their investment in SAP applications, including how to maximize the value of migrations to new SAP environments such as SAP S/4HANA. They knew that, without the ability to isolate and measure user activities at a more granular level, they would be unable to take the steps necessary to enable employees using SAP. Moreover, they lacked the visibility and details that teams supporting their SAP environments require to operate more efficiently.

Interviewed SAP customers spoke of these criteria when deciding to invest in SAP UEM by Knoa:

- **Improve user performance:** “With SAP UEM by Knoa, we are looking at the number of errors that our employees make when maneuvering through the screens and at transactional timeliness. With reports we get with SAP UEM by Knoa, we can see how employees are performing and we have been able to reduce the average time for order processing, for example.”
- **Measure the impact of SAP S/4HANA migration:** “We deployed UEM by Knoa before upgrading to SAP S/4HANA. We bought it as a monitoring tool to get a feel for response times across the organization, as well as errors and other problems we were having. After the upgrade, we’re using it as a measurement tool to see whether we got better or worse.”
- **Know what users are actually experiencing:** “We deployed SAP UEM by Knoa because we needed to understand what our users are doing. Most of our users suffer in silence. So having some of that information on our fingertips, we can easily figure out where to put our training and where to review issues and tickets.”

Table 2 provides details about interviewed organizations’ use of SAP UEM by Knoa. Study participants are supporting an average of 13 SAP business applications used by 4,943 employees as part of their day-to-day work (see Table 2). On average, SAP applications touch 80% of these organizations’ total revenue, illustrating the centrality of SAP UEM by Knoa to their business operations.

TABLE 2 Interviewed Organizations’ Use of SAP UEM by Knoa

	Average	Median
Number of SAP business applications	13	8
Number of internal users of SAP business applications	4,943	4,250
Number of sites/branches	117	30
Revenue supported (%)	80	90

Source: IDC, 2019

Business Value and Quantified Benefits

Interviewed organizations reported that they are achieving strong value through their use of SAP UEM by Knoa by making their SAP environments more transparent, measurable, robust and, ultimately, effective. These interviewed organizations noted that they have substantially improved visibility into the overall performance of their SAP applications, which allows them to ensure optimized use of those applications and maximize the value of their investment in SAP solutions. Study participants elaborated on these benefits:

- **Visibility on the impact of performance on business:** “We see operational benefits for all areas of our business with SAP UEM by Knoa by increasing visibility so we can monitor performance from production and sales to see that we’re delivering better results.”
- **Ensuring the functionality of new business units:** “We’re using SAP UEM by Knoa as a tool to ensure that when we go live with new locations or business units, the employees are properly trained and functional in the system. It allows us to show transactional capabilities and their timeliness. It’s not just ‘can they’ get through an order, but ‘are they’ actually effective.”
- **Employee efficiencies and ability to measure impact of SAP S/4HANA migration:** “The most significant benefit for us of using SAP UEM by Knoa is that it’s a time-saving tool. Also it’s a very good measurement tool for performance. We have used it extensively during our migration to SAP S/4HANA to measure precisely what were the benefits.”

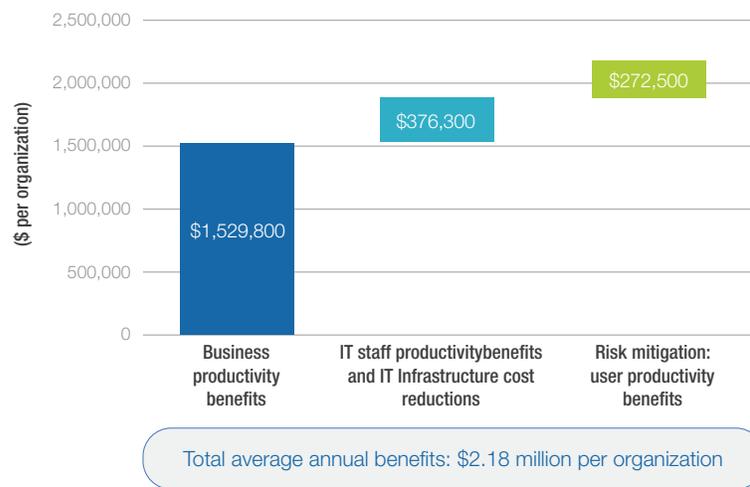
IDC’s analysis shows that these benefits translate into significant business value for study participants. IDC quantifies them as worth an annual average of \$2.18 million per organization (\$444,800 per 1,000 SAP users) over five years as follows (see Figure 1):

- **Business productivity benefits.** SAP UEM by Knoa has ensured more robust, active, and targeted employee use of SAP applications. As a result, employees work more effectively and generate more value for their organizations. IDC finds that impacted SAP users benefit from a gross productivity gain of 15% on average, which translates into higher productivity worth \$1.53 million per year per organization (\$309,500 per 1,000 SAP users), thus constituting the lion’s share of the value study participants are realizing through their use of the software.
- **IT staff productivity benefits and IT infrastructure cost reductions.** SAP UEM by Knoa has made IT teams responsible for their organizations’ SAP environments being more efficient through improved visibility and performance while enabling retirement of certain other software solutions. IDC quantifies the value of these IT staff efficiencies and cost savings at an annual average of \$376,300 per organization (\$76,100 per 1,000 SAP users or

the equivalent of nearly \$1,000 per IT employee per year, that is, \$376,300 divided by 386 IT staff per organization [average] = \$975 per IT employee per year).

- **Risk mitigation — user productivity benefits.** SAP UEM by Knoa has enabled incident response teams to work more effectively as they can pinpoint and resolve issues more readily, thus limiting the risks related to SAP environments. IDC puts the value of higher productivity for these teams at an average of \$272,500 per year per organization (\$55,100 per 1,000 SAP users).

FIGURE 1 Average Annual Benefits per Organization



Source: IDC, 2019

Optimizing SAP Business Processes and Transactions

Interviewed companies have complex businesses characterized by a variety of transactions and processes tied to their SAP environments. Their business operations require that these transactions and processes be robust and seamless because process friction can inhibit business activities and dampen employee productivity. Interviewed SAP customers uniformly reported that SAP UEM by Knoa has enabled them to streamline these processes and make them more robust. With enhanced visibility into how applications perform and interact with each other, study participants can fine-tune business processes and more easily make ongoing adjustments. The result has been the delivery of more effective data in support of business activities and more valuable applications and services for their line-of-business users.

Study participants cited various examples of business teams and processes that have benefited from SAP UEM by Knoa, with the common theme emerging that the software has enabled them to deliver more tailored, higher-performing applications and services to users. Study participants provided the following examples:

- **Significant time savings for procurement teams:** “We’ve used SAP UEM by Knoa for our procurement efforts to detect enhancement opportunities and identify common errors from users handling the procurement piece ... With Knoa, we’ve adjusted and fine-tuned the global procurement template and added some training to allow users to create purchase orders in a simple way ... We’ve achieved significant time savings of around 20%.”
- **Better visibility into compliance to support HR team:** “With SAP UEM by Knoa, when we see that a transaction is not in compliance, we can fix the issue and see that the application is delivering the expected results ... Our HR team has seen improvements, especially for payments, paychecks, and cash orders for receivables.”

Making business processes more effective and robust has delivered measurable business results for study participants in terms of revenue and/or reduced operational risk. One study participant discussed gaining the ability to discover business-critical errors and implement effective fixes, thereby minimizing operational risk and avoiding the costs of such errors: “We have a business process that is supposed to copy information through a field transfer of the data and we found with SAP UEM by Knoa that users kept making errors ... These included huge errors such as a \$5 million credit that was a data input error. So we’re saving time and reducing revenue leakage.”

Study participants also discussed the benefits for staff across their operations responsible for handling various business processes, noting that visibility and a better understanding of those processes enabled them to support their operations more efficiently and effectively — 30% on average. Study participants have identified a substantial number of processes — 34 on average — with the potential for review and process improvements driven by SAP UEM by Knoa (see Table 3). With SAP software, business process owners require less time to carry out these activities, helping their organizations justify the investment of staff time needed to make process-related improvements that end up having a broader positive impact on business activities.

TABLE 3 IT Troubleshooting Team Impact

	Before SAP UEM by Knoa	With SAP UEM by Knoa	Difference	Efficiency with SAP UEM by Knoa (%)
Number of business processes improved per year with SAP UEM by Knoa	34			
FTEs required to manage equivalent business processes per organization	8.3	5.8	2.5	30
Staff time per year in hours per 1,000 SAP users	3,152	2,223	929	30
Value of staff time required per organization per year	\$828,700	\$584,400	\$244,300	30

Source: IDC, 2019

Higher User Productivity Through Improved Use of SAP Applications

As noted previously, interviewed organizations use SAP software for systems and activities that are central to their business activities including ERP, finance, and Big Data systems. The centrality of SAP to their business activities makes it vital to ensure that employees are using the full functionality of these applications correctly and effectively. However, evaluating the efficacy of employee use of SAP applications — or any business applications — has historically not been a straightforward task. Study participants say they lacked the visibility into use patterns and ability to assess performance and understand pain points required to develop a well-founded understanding of how employees could better use SAP applications.

Interviewed organizations reported that SAP UEM by Knoa has provided them the visibility and understanding of use patterns and performance needed to help employees better use their SAP applications and systems. They identified key benefits of SAP UEM by Knoa such as the ability to identify users that needed to upgrade to new features, measure the effectiveness of new functionality, recognize use errors, and remedy struggles employees have in using particular applications or features. Study participants elaborated:

- Follow up with users to drive adoption of new features:** “We are using SAP UEM by Knoa to gain insights into how employees work. When we roll out a new functionality, we monitor use with UEM by Knoa, and look at how users are using the old versus the new functionality. We then provide targeted information to users who aren’t using the new functionality to provide feedback and make sure that they’re aware that there’s a better process out there.”

- **Use to understand the impact of new functionalities/projects:** “We want to use SAP UEM by Knoa after a project has been implemented — it doesn’t have to be a big project — to measure the new functionality that is deployed.”
- **Understanding employee performance across life cycle:** “With SAP UEM by Knoa, we’ve gained insight into what employees are doing, how are they performing in their activities day to day, what troubles they have in using applications and new features, and how new employees are handling the learning curve.”
- **Visibility into employee behavior and use patterns:** “With SAP UEM by Knoa, we can tell who is using what features and compare who is struggling versus who is doing well while looking at comparisons of why one site may be running differently. It allows us to determine, based on analysis of like groups of employees doing similar activities, why one set is not running a set of actions that everyone else is.”

SAP UEM by Knoa allows organizations to adjust business processes and train employees to better leverage SAP applications. Study participants reported that their SAP users are making much better use of SAP applications from such process optimization and fine-tuning of use patterns. This translates directly into operational efficiencies for study participants in the form of higher user productivity, which means that large groups of employees at interviewed organizations deliver more value to their organizations because of SAP UEM by Knoa.

Table 4 presents IDC findings with regard to this higher productivity stemming from interviewed organizations’ ability to help employees better use SAP applications. Specifically:

- Interviewed organizations have 4,943 employees on average who use SAP applications supported by SAP UEM by Knoa (refer back to Table 2).
- Study participants reported specific productivity gains for 1,764 of these employees using SAP applications on average (35.7% of all SAP users).
- Study participants attributed an average gross productivity gain of 15% to the 1,764 employees impacted, which translates to a 3.1% gross productivity gain across users of all SAP applications.
- Based on a \$70,000 assumed salary and use of a 15% margin assumption (see Appendix for further details on IDC’s methodology), IDC calculates that this equates to value per organization in terms of higher user productivity of \$1.60 million per year (\$323,600 per 1,000 SAP users).

TABLE 4 SAP User Productivity Gains

	Per Organization	Per 1,000 SAP Users
Number of impacted users	1,764	357
Average gross productivity gain — impacted users	15%	15%
Average gross productivity gain — all SAP users	3.1%	3.1%
Total value of higher net productivity for SAP users — IDC model*	\$1.60 million	\$323,600

* 15% margin assumption was applied

Source: IDC, 2019

Ensuring Effective and Relevant Training

Interviewed organizations reported that better visibility and understanding of use patterns helps them provide more effective training to employees for SAP environments. They cited the benefits of reducing the need for retraining by better designing training programs, identifying training gaps when they exist, and having the ability to measure the overall effectiveness of training by the gathering and reporting of post-training performance metrics. Study participants elaborated on these benefits:

- **Prepare more efficiently for training:** “With SAP UEM by Knoa, we can look at these employees receiving training over a set period of time to see how they are using the system. We can then fine-tune training based on their use ... This saves time in preparing for training and we can then use Knoa to see how they’re doing based on what they’ve learned.”
- **Proactively address training gaps:** “When we create training materials, we understand the major gaps that we have by using SAP UEM by Knoa. This is important because if the training has problems, it means that when we release a new solution that the production environment will have problems.”

Table 5 shows the user productivity gains that study participants are achieving by leveraging SAP UEM by Knoa to provide their employees with more effective and efficient training. Study participants identified an average of 63 employees who received better training as a result of SAP UEM by Knoa (see Table 5). By improving the quality and relevance of training, interviewed organizations reported that these employees are 10% more productive as they make better use of SAP applications and systems.

TABLE 5 DevOps Staff Impact

Productivity Gains	Per Organization	Per 1,000 SAP Users
Number of impacted users	63	12.7
Average gross productivity gain from improved training	10%	10%
Gross productivity gain in FTEs	6.3	1.3
Total value of higher productivity for SAP users — IDC model*	\$65,600	\$13,300

* 15% margin assumption was applied

Source: IDC, 2019

More Efficient Support for SAP Environments

The teams responsible for supporting complex SAP environments also benefit from the visibility and actionable information available from UEM by Knoa to work more efficiently. These teams included incident response, help desk, security, monitoring, and teams responsible for other major IT operations. In particular, study participants reported that SAP UEM by Knoa provided operational visibility that proactively helped them avoid significant performance issues and outages. They also cited an increase in service desk efficiencies and the ability to generate and leverage detailed user workflow reports. Study participants discussed these benefits in more detail:

- **Leverage detailed reporting to resolve user issues:** “When we run into a system issue, SAP UEM by Knoa has detailed reporting that helps us understand how a user is maneuvering through the system and get to the bottom of it. A user may not even realize what they are clicking, but we can go back and look at that information and this ends up saving time.”
- **Service desk efficiencies:** “Our service desk personnel no longer have to call or send an email to users to get information. With SAP UEM by Knoa, they get this information and it reduces the time to actually resolve issues from 1 hour to around 15 minutes on average.”
- **Visibility to avoid user complaints and resolve problems faster:** “Basically we now have visibility with SAP UEM by Knoa that we did not before, so we can anticipate user needs and avoid complaints.”

A number of teams have leveraged SAP UEM by Knoa to work more effectively, with incident response teams among those seeing substantial benefits. In particular, enhanced visibility with SAP UEM by Knoa enables incident response teams to identify problems and respond to issues

faster (37% faster on average), which allows them to work more efficiently overall (31% on average) (see Table 6).

TABLE 6 Impact on Incident Response Team

	Before SAP UEM by Knoa	With SAP UEM by Knoa	Difference	Efficiency with SAP UEM by Knoa (%)
Reduction in time required to respond to issue	37%			
FTEs required to support equivalent SAP workloads per organization	9.6	6.6	3	31
Value of staff time required per organization per year	\$960,000	\$660,000	\$300,000	31

Source: IDC, 2019

As noted previously, improved visibility and understanding of performance also helps other IT teams support SAP environments more efficiently. Table 7 shows efficiencies achieved by help desk (16%), monitoring (16%), and security teams (21%) responsible for delivering and supporting their organizations’ SAP applications, thereby helping ensure more robust and cost-effective SAP operations.

TABLE 7 Impact on Other IT Teams

FTEs Required to Support Equivalent SAP Workloads per Organization	Before SAP UEM by Knoa	With SAP UEM by Knoa	Difference	Efficiency with SAP UEM by Knoa (%)
Help desk	2.5	2.1	0.4	16
Monitoring	2.7	2.3	0.4	16
Security	3.1	2.5	0.6	21

Source: IDC, 2019

ROI Summary

Table 8 presents IDC’s analysis of the benefits and costs related to study participants’ use of SAP UEM by Knoa. IDC calculates that, on a per organization basis, interviewed organizations will achieve total discounted three-year benefits of \$5.17 million (\$1.05 million per 1,000 SAP users). These benefits compare with projected total discounted investment costs over three years of \$670,000 on a per organization basis (\$135,800 per 1,000 SAP users). At these levels of benefits and investment costs, IDC projects an average three-year ROI of 671% and break even on investment in five months.

TABLE 8 Three-Year ROI Analysis

	Per Organization	Per 1,000 SAP Users
Benefit (discounted)	\$5.17 million	\$1,046,400
Investment (discounted)	\$0.67 million	\$135,800
Net present value (NPV)	\$4.50 million	\$910,600
ROI (NPV/investment)	671%	671%
Payback (months)	5	5
Discount factor	12%	12%

Source: IDC, 2019

CHALLENGES/OPPORTUNITIES

While the benefits can be great, deploying enterprise applications is hard: Systems and processes are complex, users don't like change, and change can introduce risk. Each of these factors, and many others, conspire to undermine the business benefit of a new technology.

But change is essential to growth — and thousands of organizations per year introduce significant changes to their enterprise applications.

The most successful organizations increase the benefits they receive and reduce the inherent risk of system changes by closely monitoring their deployment progress and quickly making changes to system configuration, processes, and employee training to maximize the business benefit of the new system.

IDC research has found that training can improve business return on enterprise application deployment when combined with these straightforward practices:

- **Consistently describe the business value of the technology.** Training on systems can easily become a feature and function parade. However, end users (and IT staff) can more easily adopt new technologies and change in general, if they understand the business benefit the change is expected to deliver.
- **Focus on high-priority processes.** While all areas of the business play a role in success, some functions or geographies are in a position to have greater impact. Focus training efforts on success in those areas and then leverage that knowledge and goodwill to provide training to other areas as necessary.

- **Describe and celebrate the performance standards expected of users.** Leaders of deployment initiatives must strongly advocate that user performance will impact the success of the technology initiative. This should include a strong statement of the target performance standard users should attain in order for the initiative to be successful.
- **Leverage utilization tools to monitor adoption.** This insight can be developed into indicators of adoption and can be a trigger for additional interventions.

CONCLUSION

By leveraging timely, trusted, high-quality, complete, and granular information, SAP UEM by Knoa can help determine where to allocate budget to support enterprise application rollout and changes — all based on data-driven intelligence on how enterprise applications are actually performing and being used.

IDC calculates that organizations interviewed for this white paper that leverage SAP UEM by Knoa will realize more than \$5 million in benefits over three years on average by being able to analyze relevant data and deliver actionable information to improve user and IT staff productivity. That productivity gain comes from efficiently making better decisions and improving existing processes.

Nowhere is actionable information and process improvement more critical than in the area of enterprise application rollouts and user experience. SAP UEM by Knoa has helped organizations in the following ways:

- Prioritize which processes and user groups to focus on first when planning your migration by assessing the use of your current system.
- Define success criteria at the beginning of the project that focus on user adoption and performance metrics to ensure the user experience and adoption targets are met at the end of the implementation.
- Validate the workflow and configuration specifications of new solution components by identifying potential issues during the user testing and before deployment.
- Monitor adoption after go live to ensure that users are successfully leveraging the new processes.

This has helped these organizations:

- Optimize business processes by increasing employee productivity related to SAP applications
- Support more effective employee utilization of SAP applications by encouraging use of new functionalities and proactively addressing employee errors
- Offer more tailored and relevant training to employees based on actual usage patterns of SAP applications
- Improve the efficiency of teams responsible for deploying and supporting SAP applications, including incident response, help desk, and security teams

These benefits result in a payback period of an average of five months for these organization and a 15% improvement in SAP user productivity, which supports improved organizational consistency, efficiency, and client success.

To be most successful at improving the value of enterprise systems during and after deployment, enterprises should consider tools that monitor use and ongoing performance of enterprise systems and that tailor training to maximize impact and return on technology investment.

APPENDIX

Methodology

IDC's standard ROI methodology was utilized for this white paper. This methodology is based on gathering data from current users of SAP UEM by Knoa software as the foundation for the model. Based on interviews with organizations using it, IDC performed a three-step process to calculate the ROI and payback period:

1. Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using SAP UEM by Knoa. In this study, the benefits included staff time savings and productivity benefits, revenue gains, and cost reductions.
2. Created a complete investment (three-year total cost analysis) profile based on the interviews. Investments go beyond the initial and annual costs of using SAP UEM by Knoa and can include additional costs related to migrations, planning, consulting, and staff or user training.

3. Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of SAP UEM by Knoa over a three-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded \$100,000 per year salary for IT staff members, and an average fully loaded salary of \$70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Further, because use of SAP UEM by Knoa requires a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

IDC Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-insights-community.com
www.idc.com

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