The Total Economic Impact™ Of SAP Solution Extensions For Asset-Intensive Industries

Cost Savings And Business Benefits Enabled By SAP Extended ECM By OpenText, Add-on For Capital Projects And Operations And SAP Master Data Governance, Enterprise Asset Management Extension By Utopia
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**ABOUT FORRESTER CONSULTING**

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Executive Summary

Organizations in asset-intensive industries struggle to maximize the value of enterprise data they retain. Whether this data is siloed away in disparate content management systems or left in an unstructured state, organizations can tap into this wealth of knowledge with the right enterprise tools. SAP customers have access to Solution Extensions from OpenText and Utopia, which can aid them in maximizing the value and efficiency of the people and equipment that keep their plants running.

The SAP Extended Enterprise Content Management (ECM) application by OpenText and the add-on for capital projects and operations (referred to as ECM for EAM) allow organizations to efficiently control, access, and collaborate on critical information needed to maintain capital project timelines, ensure operations run smoothly, and derive maximum efficiency and productivity from operations and maintenance workers. The extension connects structured and unstructured content within asset management processes, with full integration to SAP’s Enterprise Asset Management (EAM) solutions.

The SAP Master Data Governance application, enterprise asset management extension by Utopia (referred to as MDG for EAM) is built on the SAP Master Data Governance platform and enables organizations to centralize and streamline data governance processes and ensure consistent management of asset master data across the entire enterprise. With a centralized and accurate view of enterprise asset data, organizations can increase efficiencies, improve asset uptime, and strengthen compliance and safety measures.

SAP commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying both EAM solution extensions from OpenText and Utopia. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of SAP Solution Extensions from OpenText and Utopia on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed several customers with years of experience using SAP Solution Extensions from OpenText and Utopia. The resulting financial analysis found that a composite organization experiences the benefits, costs, and risk-adjusted ROI shown below. This study exhibits the value created by using SAP Solution Extensions to structure and manage vast amounts of enterprise data — enabling workforces to have the right information when they need it and decreasing the effort required to manage knowledge.

Key Findings

Quantified benefits. The following risk-adjusted present value (PV) quantified benefits are representative of those experienced by the companies interviewed:

- Improved operations and maintenance efficiency by 10%. The ECM for EAM enables operations and maintenance employees to quickly find correct and up-to-date documentation when conducting daily tasks. This not only reduces the amount of time required to find information when needed, but ultimately aids them in completing tasks faster.
“One of our principles is that safety is more important than anything we can do at work. . . . Having the right asset data with MDG, we’ve been able to send the right person to the right job at the right time with the right equipment and the right tools and the right training.”

Enterprise data and information architecture manager, public utilities

“There’s a significant reduction [in searching] . . . . In the old world, if you’re missing your data sheet for your pump, you’re calling vendors; you’re asking everybody in the office. You have to wait two or three weeks to get a new one.”

Document controller, Canadian oil and gas

- **Reduced maintenance inventory costs by 5%**. MDG for EAM allows organizations to set consistent definitions of data, which in turn enables governance, compliance, and control. By having a consistent view of assets and their related parts, firms can reduce spending on duplicate purchases and last-minute shipping costs, as well as centralize purchasing and recognize vendor discounts.

- **Improved capital project handover efficiency, reducing document review time by 25%**. Organizations struggle to stay on time, and on budget, with the design, construction, and handover of large capital projects. The ECM for EAM reduces transmittal times, facilitates collaboration between multiple parties, and streamlines the review process. Organizations using the SAP extension reduce review times and avoid costly rework and delays.

- **Retirement of legacy ECM and MDM solutions**. By utilizing extensions for their existing SAP deployments, organizations can replace and retire legacy solutions and their related support costs. The ECM for EAM replaces existing ECM solutions as well as construction and engineering management tools, while users of MDG for EAM can eliminate bespoke master data management (MDM) tools.

- **Improved data management efficiency**. Organizations without strict controls and visibility struggle to manage master data. These firms often use disparate bespoke systems or rudimentary tools like spreadsheets, which cause headaches and waste time. Deploying MDG for EAM improves the efficiency of MDM processes for organizations and allows them to redeploy FTEs to other important tasks.

**Unquantified benefits**. The interviewed organizations experienced the following benefits, which are not quantified for this study:

- **Reduced risk of environmental, health, and safety (EHS) incidents**. Having the correct maintenance information and asset data allows organizations to better maintain assets and reduce the risk of dangerous failures. Further, operations employees have the correct maintenance instructions when they need them, reducing the likelihood of human error.

- **Avoidance of penalties, legal costs, and reputational damage**. Ensuring proper maintenance assets helps avoid the likelihood of events that may incur compliance penalties, legal costs, or reputational damage for violating government regulations. The ECM for EAM provides an easy-to-use audit trail documenting maintenance and compliance, while MDG for EAM empowers predictive maintenance initiatives.

- **Increase in first-time fix rate and reduction of asset downtime and rework**. The combination of solution extensions ensures that operations employees have the right information and correct parts when they need them, improving first-time fix rates and reducing rework costs and asset downtime.

- **Improved knowledge transfer and reduction in training time**. Many organizations struggle with aging workforces, which often leave incomplete paper trails or lack the capacity to capture the valuable knowledge of their workforce. With SAP Solution Extensions, organizations can create robust systems of record to track histories of maintenance and replacement at an asset level, as well as a repository for digital manuals and schematics. Having these records allows organizations to maintain smooth operations and reduces ramp times for new hires.
Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

› **Fees paid to SAP.** Organizations deploying SAP Solution Extensions from OpenText and Utopia pay an upfront deployment cost and annual fees for subscription and maintenance.

› **Internal labor costs.** Organizations incur internal labor costs related to the initial document control implementation, solution deployment, and ongoing management of SAP Solution Extensions.

› **Training costs.** Organizations incur internal labor costs to train initial users, as well as net-new training to account for annual turnover. Training time amounts to one day of productivity per new user.

Forrester’s interviews with four existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experiences benefits of $17,690,532 over three years versus costs of $4,644,539, adding up to a net present value (NPV) of $13,045,993 and an ROI of 281%.
The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TEI Framework And Methodology
From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing SAP Solution Extensions from Utopia and OpenText for asset intensive industries.

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 SAP Solution Extensions from Utopia and OpenText can have on an organization:

DUE DILIGENCE
Interviewed SAP, Utopia, and OpenText stakeholders and Forrester analysts to gather data relative to SAP Solution Extensions from Utopia and OpenText.

CUSTOMER INTERVIEWS
Interviewed four organizations using SAP Solution Extensions from Utopia and OpenText to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION
Designed a composite organization based on characteristics of the interviewed 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 interviewed organizations.

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

DISCLOSURES
Readers should be aware of the following:

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

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in SAP Solution Extensions from Utopia and OpenText for asset-intensive industries.

SAP 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.

SAP provided the customer names for the interviews but did not participate in the interviews.
The Intelligent Asset Management Customer Journey With SAP Solution Extensions

BEFORE AND AFTER THE INVESTMENT IN SOLUTION EXTENSIONS BY OPENTEXT AND UTOPIA

Interviewed Organizations

For this study, Forrester conducted four interviews with SAP EAM Solution Extensions from Utopia and OpenText customers. Interviewed customers include the following:

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>REGION</th>
<th>INTERVIEWEE</th>
<th>SCOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and gas</td>
<td>Headquartered in Canada</td>
<td>Document controller</td>
<td>Oil refinery producing 80,000 barrels per day</td>
</tr>
<tr>
<td>Oil and gas</td>
<td>Headquartered in the United States</td>
<td>Information manager</td>
<td>500 employees designing, constructing, and operating two liquefaction trains</td>
</tr>
<tr>
<td>Public utilities</td>
<td>Headquartered in the United Kingdom</td>
<td>Enterprise data and information architecture manager</td>
<td>2,000 employees providing 1.4 billion liters of water a day to over 5 million customers</td>
</tr>
<tr>
<td>Municipality</td>
<td>Municipality in the United States</td>
<td>EAM manager</td>
<td>Providing essential services for over 1 million residents</td>
</tr>
</tbody>
</table>

Key Challenges

Before implementing SAP Solution Extensions, the customers struggled with the following challenges:

› **Information was disorganized and scattered across multiple solutions.** Multiple interviewees told Forrester that they previously managed data with in-house solutions — often multiple solutions and rudimentary tools, like spreadsheets. This made consolidating and finding information time-consuming and difficult.

› **Rival services and legacy solutions were driving up costs.** Legacy solutions required time, money, and manpower to maintain, and licensing costs from other services were too inflexible for the demands of maintaining heavy equipment. The document controller for the oil and gas company explained to Forrester: “The offer we had at the time was monthly, and you have to guess your peak usage every month and pay upfront. If you think you’ll have 50 people using the tool at one day, you will have to pay 50 licenses for that month. If only two people use it for the entire month, you still have to pay for 50 licenses.”

› **Companies suffered steep losses when projects were delayed.** Not properly filing data — or being able to find it later — can significantly delay projects, with additional costs in lost productivity and fines. The information manager for an oil and gas company explained to Forrester: “The best part of ECM is that before, we just dumped all the documents in a folder. Now, we have versions. So we’re able to make sure when somebody pulls up that document, they see the one that they need to. If the plant goes down or there’s an emergency, they’re going to get the right documents that have the latest version.”

Solution Requirements

The interviewed organizations searched for a solution that could:

- "The departments were just using solutions that they had procured; even within the same department, there were multiple solutions being used."  
  
  *EAM manager, municipality*

- "The best part of ECM is that before, we just dumped all the documents in a folder. Now, we have versions. So we’re able to make sure when somebody pulls up that document, they see the one that they need to. If the plant goes down or there’s an emergency, they’re going to get the right documents that have the latest version.”

  *Information manager, US oil and gas*
> Replace disparate legacy systems for categorizing and locating data with a centralized, easy-to-use solution.
> Organize and structure existing data, establishing strict guidelines for future data hygiene.
> Provide the right people with the right information at the right time.
> Facilitate easy collaboration and handoffs between design, construction, and operations teams of plants.
> Keep projects on track and avoid missing deadlines.
> Support new digital initiatives.
> Simplify the knowledge transfer process.
> Improve the safety environment.
> Improve efficiency of operations and maintenance teams, reduce operational costs, and improve plant uptime.

**Key Results**

The interviews revealed several key results from the SAP Solution Extensions from Utopia and OpenText investment:

> **Companies can replace their legacy solutions with modern, centralized solutions.** With SAP Solution Extensions from Utopia and OpenText, companies can retire their in-house solutions and integrate directly with SAP.

> **Efficiency improves as unnecessary delays are reduced.** With easy access to information when it is needed, companies can eliminate tedious searching through unsorted information and complete tasks more quickly.

> **Companies avoid missing deadlines and keep projects on track.** Eliminating a major source of delays also makes it much easier to avoid missing deadlines — and subsequently, expending time, resources, and legal fees and possibly adding regulatory fines in dealing with compliance issues.

> **Cost controls improve the bottom line.** Standardized visibility into assets and inventory allows organizations to control costs by eliminating duplicate purchases and centralizing procurement for bulk discounts and by providing access to the right information and inventory for optimized plant maintenance, repair, and overhauls.

> **Companies can manage more data with fewer people.** Retiring legacy MDM solutions and replacing them with a single, easy-to-use set of tools reduces required effort for MDM support.

**Composite Organization**

Based on the interviews, 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 four companies that Forrester interviewed and 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:

> “On the engineering and information management side, we were looking for workflows, lifecycles, and searchability. You need to have a system with the ability to support these processes. On the nonfunctional side, we were looking at vendor quality — that’s a big one for OpenText.”

  Document controller, Canadian oil and gas

> “Utopia helps us through MDG to redesign our data hierarchy to an ISO standard. Utopia helped us do that migration, but also helps us design hierarchies and then do all the work to fill in our gaps in data. This is the full cycle from planning to consolidate, to creating and to classifying.”

  Enterprise data and information architecture manager, public utilities

> “By streamlining the information management processes, we can run a $10 billion plant with 300 people.”

  Document controller, Canadian oil and gas
The composite organization is a producer of specialty hydrocarbon products in North America, processing crude oil and other feedstocks into a range of oils, solvents, petrolatums, and wax. The organization has annual revenues of roughly $2 billion.

The organization employs 1,000 employees, with 500 directly related to projects, operations, maintenance, and delivery of specialty products.

Prior to adding OpenText and Utopia extensions, the organization had an existing deployment of S/4HANA.

Working with outside engineering and construction firms, the organization is in the process of developing new capital assets and enlists SAP extensions to execute these projects.

Key assumptions

- Annual revenue of $2 billion
- 1,000 total employees
- 500 employees directly related to projects, operations, maintenance, and delivery of specialty products

Three-year total benefits PV: $17.7 million

- Improved operations and maintenance efficiency, $8,393,125
- Reduction in maintenance inventory costs, $4,725,019
- Capital project handover efficiency, $2,219,515
- Retirement of legacy ECM and MDM solutions, $1,768,152
- Data management efficiency, $584,721

Key assumptions

- Annual revenue of $2 billion
- 1,000 total employees
- 500 employees directly related to projects, operations, maintenance, and delivery of specialty products
Analysis Of Benefits

QUANTIFIED BENEFIT DATA AS APPLIED TO THE COMPOSITE

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Benefit</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atr</td>
<td>Improved operations and maintenance efficiency</td>
<td>$3,375,000</td>
<td>$3,375,000</td>
<td>$3,375,000</td>
<td>$10,125,000</td>
<td>$8,393,125</td>
</tr>
<tr>
<td>Btr</td>
<td>Reduction in maintenance inventory costs</td>
<td>$1,900,000</td>
<td>$1,900,000</td>
<td>$1,900,000</td>
<td>$5,700,000</td>
<td>$4,725,019</td>
</tr>
<tr>
<td>Ctr</td>
<td>Capital project handover efficiency</td>
<td>$892,500</td>
<td>$892,500</td>
<td>$892,500</td>
<td>$2,677,500</td>
<td>$2,219,515</td>
</tr>
<tr>
<td>Dtr</td>
<td>Retirement of legacy ECM and MDM solutions</td>
<td>$711,000</td>
<td>$711,000</td>
<td>$711,000</td>
<td>$2,133,000</td>
<td>$1,768,152</td>
</tr>
<tr>
<td>Etr</td>
<td>Data management efficiency</td>
<td>$235,125</td>
<td>$235,125</td>
<td>$235,125</td>
<td>$705,375</td>
<td>$584,721</td>
</tr>
<tr>
<td></td>
<td>Total benefits (risk-adjusted)</td>
<td>$7,113,625</td>
<td>$7,113,625</td>
<td>$7,113,625</td>
<td>$21,340,875</td>
<td>$17,690,532</td>
</tr>
</tbody>
</table>

Improved Operations And Maintenance Efficiency

The SAP extension for capital projects and operations allows organizations to connect a wide range of structured and unstructured content and integrate it with their existing SAP deployments. Operations users can quickly search for specific content about equipment, parts, or processes as key data attributes are associated with source documents. Providing operations employees with an efficient way to find the correct information they need ensures that they spend less time searching and more time on operations tasks. Furthermore, the likelihood that they use incorrect information to perform tasks declines, improving asset uptime.

When conducting interviews, Forrester found that the average operations employee saves 10% of their annual time spent searching or performing rework due to having incorrect information.

The document controller for the Canadian oil and gas firm told Forrester: “We were able to automate a lot of the paper-based processes, but once you do that, there is the challenge of receiving information from suppliers in bad formats, and you can never find the information again. One of the best tools we use in operations is the tag manager: You’ll find everything you need to manage your facility based on the equipment types and numbers. OpenText is a foundational tool for us in operations; we spent a little on the technology for the process upfront, and later you do not need an army of people to comb through information.”

In building the financial analysis, Forrester assumes:

› A team of 500 technicians, operations, and maintenance staff.
› An average fully burdened salary of $75,000.
Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the range of outcomes for benefit estimates.

Specific risk considerations for operations and maintenance efficiency include:

› Size and scope of operations and workforce.
› Benchmark productivity and content management processes.
› Complexity of operations.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of $8,393,125.

**Improved Operations And Maintenance Efficiency: Calculation Table**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Technicians, operations, and maintenance team</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Annual time savings with xECM</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Operations fully burdened salary</td>
<td>$75,000</td>
<td>$75,000</td>
<td>$75,000</td>
<td></td>
</tr>
<tr>
<td>At</td>
<td>Improved operations and maintenance efficiency</td>
<td>A1<em>A2</em>A3</td>
<td>$3,750,000</td>
<td>$3,750,000</td>
<td>$3,750,000</td>
</tr>
<tr>
<td>Atr</td>
<td>Improved operations and maintenance efficiency (risk-adjusted)</td>
<td>↓10%</td>
<td>$3,375,000</td>
<td>$3,375,000</td>
<td>$3,375,000</td>
</tr>
</tbody>
</table>

**Reduction In Maintenance Inventory Costs**

A benefit of using the extension for asset management is the ability to consolidate and standardize massive amounts of granular asset data. By integrating this capability with an SAP deployment, organizations gain visibility in asset master data across their entire organizations and the ability to inform enterprise-level decisions on maintenance, procurement, and inventory. Prior to investing in MDG for EAM, organizations struggled to keep up with massive data sets or create and enforce standards to ensure hygiene and usefulness of information. Not having uniform standards meant data from one location to another could be different for the same parts or equipment, leading to duplicate purchases, unnecessary spending on transportation, and missed opportunities in procurement negotiations. Access to critical parts information also allows frontline workers to easily refurbish old assets and reduce new equipment costs.

The enterprise data and information architecture manager for the public utilities firm stated: “Utopia has enabled us to understand what components a particular piece of equipment uses and then be able to decide whether or not we want to hold it as a strategic set of spares. We now have the ability to manage inventory that way. It also gives us the ability to understand from a procurement perspective where we buy that piece of equipment or that spare part from and do we use that spare part elsewhere across the organization. Can we look at consolidating the contracts so we can get a better ones or more commercially advantageous procurement results from economies of scale on
Forrester assumes that the composite organization:

- Has an annual revenue of $2 billion, with an annual maintenance repair and overhaul budget of 2% revenue.
- Reduces related costs by 5% with better visibility and inventory controls.

The reduction in maintenance repair and overhaul costs will vary with:

- Existing annual maintenance repair budget.
- Size, scope, and complexity of operations.
- Individual organizations’ abilities to negotiate with vendors.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV of $4,725,019.

### Reduction In Maintenance Inventory Costs: Calculation Table

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Annual maintenance inventory budget</td>
<td>$40,000,000</td>
<td>$40,000,000</td>
<td>$40,000,000</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Reduction in costs as a result of better visibility and control</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Bt</td>
<td>Reduction in maintenance inventory costs</td>
<td>B1*B2</td>
<td>$2,000,000</td>
<td>$2,000,000</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Btr</td>
<td>Reduction in maintenance inventory costs (risk-adjusted)</td>
<td>↓5%</td>
<td>$1,900,000</td>
<td>$1,900,000</td>
<td>$1,900,000</td>
</tr>
</tbody>
</table>

### Capital Project Handover Efficiency

Organizations launching new, capital-intensive projects often work with multiple outside firms and stakeholders to complete the design and construction of new assets. This process requires the exchange of massive amounts of unstructured documentation and review to ensure that asset design meets the needs and criteria of operators. The EDM for EAM reduces transmittal times and allows various stakeholders to collaborate around a single platform — overcoming the breakdowns in communication caused by stakeholders in multiple locations using a plethora of solutions. Interviewees told Forrester that ECM for EAM sped up review cycles, reduced the number of employees required to organize information, and helped avoid delays and rework caused by miscommunication.

The information manager for the US oil and gas firm, which was building multiple liquefaction trains, explained: “We had all these contractors feeding us different documents, and they would have to go through multiple phases — issued for information, issued for construction, and then each step in your drawings. It’s over a million documents a month. There was no tracking; it was all email and scan. In order to keep up with that, we needed more bodies; it was more bodies, or you miss a deadline, and one deadline will cost you millions.”

The document controller for the Canadian oil and gas organization stated: “It’s the business concept of concurrent engineering, where
multiple people work on the same set of information, and that’s a huge cost saver, time saver, and risk saver. That’s something you simply cannot do in a paper world.”

In modeling the benefits of capital project handover efficiency, Forrester assumed:

- The composite organization undertakes the design and construction of an advanced facility, whose start and completion dates exceed the three-year model.
- The organization required 30 FTEs for document review without the OpenText extension for SAP, with an average fully burdened salary of $100,000.
- The composite avoids two days of delay per year that the project occurs, with an average daily value of $1,500,000. Forrester attributes 10% of this reduction to the SAP extension by OpenText.

Forrester recognizes that the benefits from capital project handover efficiency may differ from organization to organization. Specific risk considerations include:

- Scope and complexity of project, including number of external parties involved.
- Unforeseen natural events, such as severe weather or changes in environment.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of $2,219,515.

<table>
<thead>
<tr>
<th>Capital Project Handover Efficiency: Calculation Table</th>
</tr>
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<tbody>
<tr>
<td>Ref.</td>
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<tr>
<td>------</td>
</tr>
<tr>
<td>C1</td>
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<tr>
<td>C2</td>
</tr>
<tr>
<td>C3</td>
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<tr>
<td>C4</td>
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<td>C5</td>
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Retirement Of Legacy ECM And MDM Solutions

Firms deploying SAP Solution Extensions replaced legacy systems and eliminated their related support costs. Several firms interviewed by...
Forrester used multiple solutions to complete the same tasks and consolidated these into their SAP deployments. Older and bespoke systems required additional costs, such as hardware and maintenance not required with S/4HANA.

The enterprise data and information architecture manager for the public utilities firm explained: "For a number of years, we created a number of bespoke systems. Because our systems were heavily bespoke, that meant it was quite a lot of development time for us to constantly make changes and ensure alignment. Once we made the decision to go to S4, it was a no-brainer to consolidate into SAP and not have those legacy systems — not have the development overhead, not have the support overhead, just move everything into SAP."

In modeling the composite organization’s benefit of retiring legacy systems, Forrester assumes:

- The organization had an annual legacy ECM spend on hardware and enterprise licenses of $350,000. Additionally, the organization spends $200,000 annually on upgrades to and replacement of hardware for its homegrown MDM system.

- The organization redeployed two FTEs supporting the legacy ECM, with an average fully burdened salary of $120,000.

The benefits derived by retiring legacy systems will vary based on existing software and hardware costs. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of $1,768,152.

### Retirement Of Legacy ECM And MDM Solutions: Calculation Table

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Annual legacy ECM spend on hardware and software</td>
<td>$350,000</td>
<td>$350,000</td>
<td>$350,000</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>Annual hardware replacement/upgrade costs (MDG)</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>ECM FTE support staff redeployed</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>D4</td>
<td>ECM FTE support staff salary</td>
<td>$120,000</td>
<td>$120,000</td>
<td>$120,000</td>
<td></td>
</tr>
<tr>
<td>Dt</td>
<td>Retirement of legacy ECM and MDM solutions</td>
<td>D1+D2+(D3*D4)</td>
<td>$790,000</td>
<td>$790,000</td>
<td>$790,000</td>
</tr>
<tr>
<td>Dtr</td>
<td>Retirement of legacy ECM and MDM solutions (risk-adjusted)</td>
<td>↓10%</td>
<td>$711,000</td>
<td>$711,000</td>
<td>$711,000</td>
</tr>
</tbody>
</table>

### Data Management Efficiency

Having an intelligent MDM solution reduces the complexity and effort required to perform data governance. The SAP extension for enterprise asset management provides organizations with a single set of easily used tools to replace legacy solutions not built for the future strategy of organizations. Not only does replacing legacy tools make the process of...
data governance easier, but it also eliminates the person hours required to maintain legacy systems.

The enterprise data and information architecture manager for the public utilities firm told Forrester: “I’d say it’s got to be in the region of three to four full-time equivalent people that we would be able to redeploy away from managing those systems and doing fixes and support work on those systems and enhancement-type activity. Our data governance team is managing a much-expanded footprint of asset data, and we’re making more changes to it. We’ve been able to do that without having to grow the team.”

For the composite analysis, Forrester assumes:

- A master data management team of 10 FTEs, with a fully loaded salary of $75,000.

Specific risk considerations include:

- Scope and complexity of asset data.
- Prior-state MDM systems and team.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV of $584,721.

### Data Management Efficiency: Calculation Table

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Master data management team</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>E2</td>
<td>Redeployed FTEs</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>Fully loaded MDM salary</td>
<td>$75,000</td>
<td>$75,000</td>
<td>$75,000</td>
<td></td>
</tr>
<tr>
<td>Et</td>
<td>Data management efficiency</td>
<td>E1<em>E2</em>E3</td>
<td>$247,500</td>
<td>$247,500</td>
<td>$247,500</td>
</tr>
<tr>
<td>Etr</td>
<td>Data management efficiency (risk-adjusted)</td>
<td>↓5%</td>
<td>$235,125</td>
<td>$235,125</td>
<td>$235,125</td>
</tr>
</tbody>
</table>

### Unquantified Benefits

Organizations interviewed for this study listed additional benefits, which were not considered in the financial model. Additional unquantified benefits include:

- **Reduced risk of safety incident.** The document controller stated: “OpenText has all the training materials, and we had a process around keeping them up to date. We can track it in OpenText and know that the operator doing the job has the right training. You know the person is trained the right way; they have the safety protocols, and we can audit them electronically, so we know the training they have taken is the most recent and up to date. That dovetails into things like less injuries, less fatalities, and less outages.”
The Total Economic Impact™ Of SAP Solution Extensions For Asset-Intensive Industries

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

Avoidance of penalties, legal costs, and reputational damage. The document controller told Forrester: “Audits are something that happens quite a bit. Instead of scrambling or needing them shipped to a site, you can just punch four digits into the system, and you get all the permits for that particular unit in the facility. There’s a legal cost savings.”

Increase in first-time fix rate and reduction of asset downtime and rework. The enterprise data and information architecture manager stated: “We’d also expect to see things like single visits increase. So, rather than go and respond to a failure and the person that responds gets there and realizes that they actually can’t do anything about it, they need to raise another job, someone else to go back and look at it with the right tools or the right parts. We expect to be able to go once proactively and not see the failure, and, therefore, it would be cheaper because we reduce the number of jobs that we would do, but we also fix more the first time so we wouldn’t get the costs associated with sending out additional people to look at faults.”

Improved knowledge transfer and reduction in training time. The document controller explained: “Before with training, there was probably a lot of repeated print material and on-the-job training. You had people pouring over a book and had to make sure that was up to date. Now you can point people to an online resource, and you know it’s always up to date.”

Flexibility

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

Creating dynamic risk models to manage assets and plan future projects. The enterprise data and information architecture manager explained: “If we got real-time information about an asset, we can start to put that in to understand, ‘OK, if we have three assets but one of those is going to fail, but we have two in that process.’ It’s potentially not too high risk, and we can take our time fixing that. But if we only have two assets and one of them is about to fail, then we have a problem that we need to respond to much quicker. So that’s a huge case around being able to quantify risk more easily and also in terms of managing our assets and the commissioning process when we work to build new assets.”

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

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Cost</th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ftr</td>
<td>SAP fees</td>
<td>$2,149,400</td>
<td>$206,668</td>
<td>$206,668</td>
<td>$206,668</td>
<td>$2,769,404</td>
<td>$2,663,353</td>
</tr>
<tr>
<td>Gtr</td>
<td>Internal labor costs</td>
<td>$1,102,500</td>
<td>$239,400</td>
<td>$239,400</td>
<td>$239,400</td>
<td>$1,820,700</td>
<td>$1,697,852</td>
</tr>
<tr>
<td>Htr</td>
<td>Training costs</td>
<td>$252,000</td>
<td>$12,600</td>
<td>$12,600</td>
<td>$12,600</td>
<td>$289,800</td>
<td>$283,334</td>
</tr>
<tr>
<td></td>
<td>Total costs (risk-adjusted)</td>
<td>$3,503,900</td>
<td>$458,668</td>
<td>$458,668</td>
<td>$458,668</td>
<td>$4,879,904</td>
<td>$4,644,539</td>
</tr>
</tbody>
</table>

SAP Fees

The main cost components for an investment in SAP EAM Solution Extensions are the initial deployment fee and ongoing annual license and maintenance costs. These are direct costs paid to SAP.

› For the composite organization, the initial deployment fee is $1.1 million and an initial license investment of $854,000. Annual maintenance fees assume use of both ECM for EAM and MDG for EAM.

› Fees assume an existing deployment of S/4HANA.

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

SAP fees may vary based on number of users, data objects, and specific use case customization. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year risk-adjusted total PV of $2,663,353.

SAP Fees: Calculation Table

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Implementation service fee</td>
<td>$1,100,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>Ongoing SAP license and maintenance</td>
<td>$854,000</td>
<td>$187,880</td>
<td>$187,880</td>
<td>$187,880</td>
<td></td>
</tr>
<tr>
<td>Ft</td>
<td>SAP fees</td>
<td>F1+F2</td>
<td>$1,954,000</td>
<td>$187,880</td>
<td>$187,880</td>
<td>$187,880</td>
</tr>
<tr>
<td></td>
<td>Risk adjustment</td>
<td>↑10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ftr</td>
<td>SAP fees (risk-adjusted)</td>
<td>$2,149,400</td>
<td>$206,668</td>
<td>$206,668</td>
<td>$206,668</td>
<td>$206,668</td>
</tr>
</tbody>
</table>

Internal Labor Costs

Organizations may require internal labor to manage the transition from
legacy solutions and initial integration of multiple data sources. Additionally, ongoing management of the solutions incurs internal labor.

- The composite organization requires a team of 10 document control specialists, spending 50% of their time during the initial period of deployment. Forrester assumes a fully loaded salary of $75,000.
- The composite organization requires five systems management FTEs, spending 50% of their time to management the initial deployment. Time spent managing the solutions extensions decreases to 38% on an ongoing basis. Forrester assumes an annual salary of $120,000.

Specific internal labor risk considerations include:

- Size and scope of legacy system transition.
- Internal talent.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV of $1,697,852.

### Internal Labor Costs: Calculation Table

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Document control implementation FTEs</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>Fully loaded document control data salary</td>
<td>$75,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>Systems management FTEs</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Percent of time dedicated to SAP add-ons</td>
<td>50%</td>
<td>38%</td>
<td>38%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>G5</td>
<td>Fully loaded support salary</td>
<td>$120,000</td>
<td>$120,000</td>
<td>$120,000</td>
<td>$120,000</td>
<td></td>
</tr>
<tr>
<td>Gt</td>
<td>Internal labor costs</td>
<td>(G1<em>G2)+(G3</em>G4*G5)</td>
<td>$1,050,000</td>
<td>$228,000</td>
<td>$228,000</td>
<td>$228,000</td>
</tr>
<tr>
<td>Gtr</td>
<td>Internal labor costs (risk-adjusted)</td>
<td>$1,102,500</td>
<td>$239,400</td>
<td>$239,400</td>
<td>$239,400</td>
<td></td>
</tr>
</tbody>
</table>

### Training Costs

Interviewees told Forrester that employees required varying levels of training based on role and usage of the SAP Solution Extensions. However, the average employee requires one day to become proficient in day-to-day usage of the tools.

Forrester assumes a blended hourly rate of $50 per hour across the composite organization.

Training times will vary based on:

- Size of workforce and ability to use learn new tools.
- Complexity of usage and required time to become proficient in specific roles.

To account for these risks, Forrester adjusted this cost upward by 5%.
yielding a three-year risk-adjusted total PV of $283,334.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Metric</th>
<th>Calculation</th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Initial users trained</td>
<td></td>
<td>600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Annual turnover</td>
<td>H1*5%</td>
<td></td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>H3</td>
<td>Average training time required for users</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>Average fully burdened hourly rate for users</td>
<td></td>
<td>$50</td>
<td>$50</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td>Ht</td>
<td>Training costs</td>
<td>(H1+H2)<em>H3</em>H4</td>
<td>$240,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td></td>
<td>Risk adjustment</td>
<td>↑5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Htr</td>
<td>Training costs (risk-adjusted)</td>
<td></td>
<td>$252,000</td>
<td>$12,600</td>
<td>$12,600</td>
<td>$12,600</td>
</tr>
</tbody>
</table>
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.

Cash Flow Analysis (risk-adjusted estimates)

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total costs</td>
<td>($3,503,900)</td>
<td>($458,668)</td>
<td>($458,668)</td>
<td>($458,668)</td>
<td>($4,879,904)</td>
<td>($4,644,539)</td>
</tr>
<tr>
<td>Total benefits</td>
<td>$0</td>
<td>$7,113,625</td>
<td>$7,113,625</td>
<td>$7,113,625</td>
<td>$21,340,875</td>
<td>$17,690,532</td>
</tr>
<tr>
<td>Net benefits</td>
<td>($3,503,900)</td>
<td>$6,654,957</td>
<td>$6,654,957</td>
<td>$6,654,957</td>
<td>$16,460,971</td>
<td>$13,045,993</td>
</tr>
<tr>
<td>ROI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>281%</td>
</tr>
<tr>
<td>Payback period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.0</td>
</tr>
</tbody>
</table>

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.
SAP EAM Solution Extensions From Utopia And OpenText: Overview

The following information is provided by SAP, Utopia, and OpenText. Forrester has not validated any claims and does not endorse SAP, Utopia, OpenText, or its offerings.

SAP Extended ECM by OpenText and the add-on for capital project and operations

Digitalizing and connecting content management enables collaboration and supports smart decisions and winning results across the organization. Controlling engineering information, work processes, and risk allows an intelligent enterprise to optimize the entire asset lifecycle and improve efficiency and time-to-production for capital projects and operations.

The capital projects and operations add-on improves the efficiency and effectiveness of your asset management processes. Centralized, accessible maintenance content boosts productivity and improves operational control while increasing reliability and reducing outages. With rich functionality such as engineering project-team workspaces, redlining and markup of engineering drawings, and collaborative approval workflows, you can improve internal and external collaboration. Learn more.

SAP Master Data Governance, enterprise asset management extension by Utopia

More than ever, asset intensive organizations need accurate, up-to-the-minute data to manage complex assets throughout the lifecycle, maximize uptime, and improve responsiveness to changing circumstances.

SAP Master Data Governance application, enterprise asset management extension by Utopia unifies and streamlines your data governance processes for enterprise asset management. With better master data governance and accurate and complete information, you can improve maintenance planning, reduce asset downtime, and increase productivity and profits while supporting compliance and safety. Learn more.
Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company’s technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

Total Economic Impact Approach

**Benefits** represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

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

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

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

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