

A Forrester Total Economic Impact™ Study Prepared For EMC

The Total Economic Impact Of Case Management Applications Built On EMC Documentum xCP

A Municipal Government Improves Public Services And Improves Productivity While Reducing Operational Costs

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Executive Summary

Interest in case management has increased significantly in the past couple of years, for a number of reasons.¹ Many organizations are confronted with similar challenges around the execution of inefficient business processes, a lack of visibility, the volume of missing or misplaced information, and the difficulty of enforcing compliance. At the same time, organizations are trying to better manage the costs and risks of servicing customer requests, putting a greater emphasis on automating and tracking inconsistent “incidents” that do not follow a well-defined process, adapting to new and changing regulations, and increasingly using collaboration and social media to support unstructured business processes. Government agencies are also being pushed to respond to more citizen requests and provide better visibility and transparency. In all these situations, the use of case management applications can be valuable to organizations.

In May 2012, EMC commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) that enterprises may realize by deploying case management applications built on EMC Documentum xCP.

Documentum xCP is an application development platform that supports the development, execution, and monitoring of case-driven processes, integrating human workflow, content, and system-based activities. In addition, xCP manages all of the various types of information that support the needs of the process. For a more detailed overview of Documentum xCP for Case Management, please refer to page 20.

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of developing and deploying case management applications based on xCP for their organizations.

A Municipal Government Improves Public Service And Improves Productivity While Reducing Operational Costs

This study illustrates the financial impact — what Forrester calls the Total Economic Impact™ (TEI) — of developing and deploying case management applications using Documentum xCP at a municipal government agency in the US. The interviewed organization developed case management applications for its legislative document review process and requests for public records via the Public Request Act — two processes that were largely manual and paper-based. Our financial analysis found that the interviewed organization expects the risk-adjusted ROI, costs, and benefits shown in Table 1.

Table 1
Three-Year Risk-Adjusted ROI²

| ROI | Payback period | Total benefits (PV) | Total costs (PV) | Net present value |
|-----|----------------|---------------------|------------------|-------------------|
| 50% | 21 months | \$2,454,434 | (\$1,631,597) | \$822,837 |

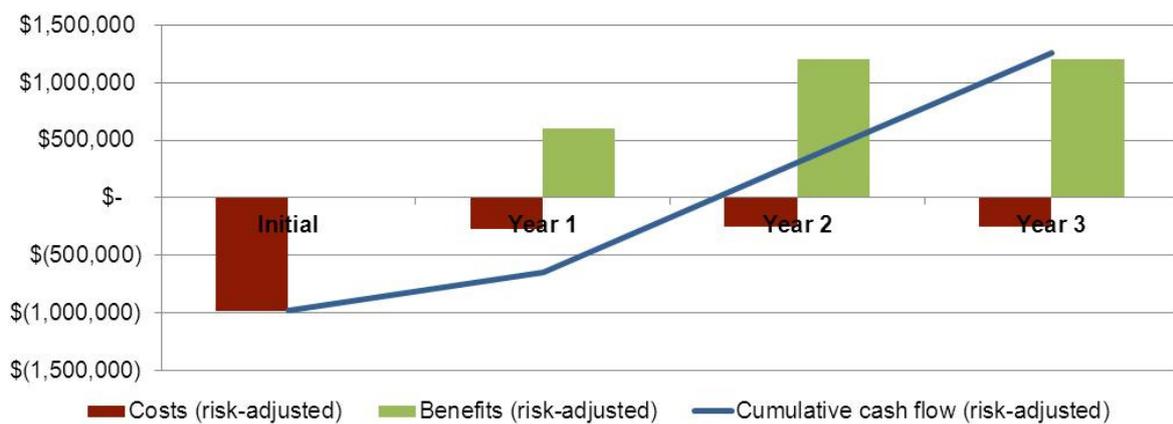
Source: Forrester Research, Inc.

- **Benefits.** In conducting in-depth interviews with this existing EMC customer, Forrester found that this organization expects benefits of approximately \$2.45 million over a three-year period. In particular, the organization realized:
 - **End user productivity gains.** The processes of legislative document review and Public Request Act processes were very manual and time-consuming. Throughout the process, — creation, iterative reviews, approval, and publication — public documents such as city council reports were printed out multiple times and physically distributed among departments. City clerks responding to public requests for information had to go to the records room, search for the requested document, make a copy or scan it, and then mail it back to the requester. Introducing the case management applications streamlined these processes; the organization estimates that its end users save between 5% and 10% of their time, resulting in more than 37,000 hours per year that employees can reallocate to better citizen service. In our analysis, this benefit has an estimated three-year risk-adjusted PV of approximately \$1.96 million.
 - **Operational cost savings.** By transforming two heavily paper-based processes into streamlined digital processes, the interviewed organization was able to reduce the costs of paper, printing, shipping, physical storage, and related labor. The estimated cost savings have an estimated three-year risk-adjusted PV of approximately \$498,000.
 - **Improved citizen service.** The business objectives for implementing case management applications were not only around productivity gains and cost reductions; it was equally important to the organization to improve the service provided to citizens. The transformation of the two business processes increased its visibility and accessibility to the public. Citizens now have online access to council and other public reports within hours of their publication and their requests for information are handled in a much faster and transparent way.
- **Costs.** To achieve the above benefits, the interviewed organization invested approximately \$1.6 million over a three-year period. Costs included:
 - **Case management software.** These software costs take into account the license and maintenance fees for all required Documentum xCP modules, including the underlying Documentum repository, process engine, form builder, and user interface. These are provided via xCP User and xCP Designer licenses. As the interviewed organization had also invested in other EMC products that are out of scope for this analysis, EMC provided us with the equivalent fees for such a deployment. For the interviewed organization, these equivalent software costs have a three-year risk-adjusted PV of approximately \$769,000.
 - **Development and setup.** The interviewed organization used some professional services to help set up and develop the first case management application. However, most of the design, development, integration, and testing efforts were done by internal staff. The corresponding setup and development costs have a three-year risk-adjusted PV of approximately \$167,000.
 - **IT infrastructure.** The entire case management solution is hosted in the organization's data center. The IT infrastructure costs have a three-year risk-adjusted PV of approximately \$241,000.

- **Training.** Authors, reviewers, and approvers involved in the transformed legislative document review process attended training sessions. For the interviewed organization, the training costs have a three-year risk-adjusted PV of approximately \$78,000.
- **Operational labor.** The equivalent of 1.5 full-time resources from different business units is dedicated to ensure day-to-day operations. Additionally, a program manager and a database administrator each spend about 25% of their time on the case management solutions. For the interviewed organization, these operational labor costs have a three-year risk-adjusted PV of approximately \$377,000.

Figure 1 summarizes the yearly and cumulative cash flow; Figure 2 shows the breakdown of the benefit and cost categories for the interviewed organization.

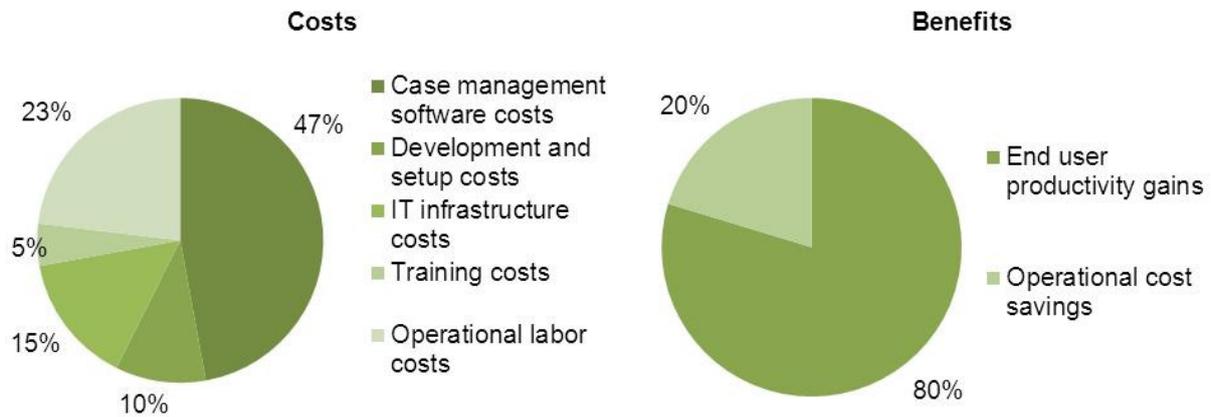
Figure 1
Three-Year Risk-Adjusted Cash Flow



Source: Forrester Research, Inc.

Figure 2

Three-Year, Risk-Adjusted Costs And Benefits



Source: Forrester Research, Inc.

Factors Affecting Benefits And Costs

Table 1 illustrates the risk-adjusted financial results that the interviewed organization achieved. The risk-adjusted values take into account any potential uncertainty or variance in estimating the costs and benefits, which produces more conservative estimates. The following factors may affect the financial results that an organization may experience:

- **The nature and type of the process.** The kind of process that will be transformed by using the case management approach has a large impact on the potential benefits. Some processes might be better suited to this approach and have higher potential value than others.
- **The number of end users.** The number of end users who rely on business processes streamlined by the new case management solution defines the magnitude of potential productivity gains for the organization.
- **End user adoption.** The benefits associated with end user productivity depend on how successfully users adopt the case management applications and processes and how effectively and productively the organization reallocates the freed-up time and resources.

Disclosures

The reader should be aware of the following:

- The study is commissioned by EMC and delivered by the Forrester Consulting group.
- Forrester makes no assumptions as to the potential return on investment that other organizations will receive. Forrester strongly advises that readers should use their own estimates within the framework provided in the report to determine the appropriateness of an investment in the EMC Documentum xCP application development platform.
- EMC 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.
- The customer names for the interviews were provided by EMC.

TEI Framework And Methodology

Introduction

From the information provided in the interviews, Forrester has constructed a Total Economic Impact framework for those organizations considering implementing EMC Documentum xCP Case Management solution. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

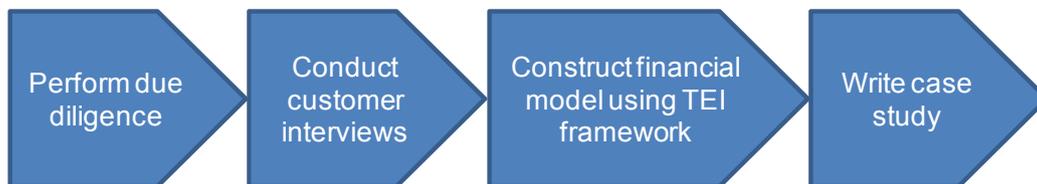
Approach And Methodology

Forrester took a multistep approach to evaluate the impact that EMC Documentum xCP Case Management can have on an organization (see Figure 3). Specifically, we:

- Interviewed EMC marketing and sales personnel and Forrester analysts to gather data relative to Documentum xCP Case Management and the marketplace for dynamic case management platforms.
- Interviewed one organization currently using EMC Documentum xCP Case Management to obtain data on costs, benefits, and risks.
- Constructed a financial model representative of the interviews using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interviews.

Figure 3

TEI Approach



Source: Forrester Research, Inc.

Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves the purpose of providing a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

Analysis

Interview Highlights

One organization, a municipal government agency in the US, was interviewed for this study. Its 4,500 employees provide services to a population of nearly half a million people.

As with many public organizations, the agency had to deal with huge volumes of paper documents. In 2008, the organization decided to invest in the EMC Documentum platform to start scanning documents and create a central repository to store them in. In 2010, the organization decided to develop and deploy two case management applications based on EMC Documentum xCP: one for its legislative document review process and the other for requests for public records.

“Both were cumbersome and heavily paper-based processes. Departments participating in the legislative document review process are spread throughout the city; employees spent a lot of time going back and forth to collaborate on reports, make changes, have reports reviewed, get approval, and publish them. Reports were printed out time and again. The process for the Public Request Act also used to be very manual and time-consuming. People had to go to the records room, search for the requested document, make a copy or scan it, and mail it back to the requester. Each department tracked its own requests manually. There was a lot of effort and paper involved in both processes.” (Principal application developer)

The organization’s main business objectives for rolling out these two case management applications were to deliver quality services to citizens more transparently and help the employees involved in these processes be more productive.

“We wanted to improve the service we provide to our citizens, simplify our internal processes, and achieve better transparency and accountability. Now we have a full audit trail for the reports we publish and the requests we handle.” (Principal application developer)

Both case management applications were developed in-house with some assistance from external consultants. It took five or six months to develop, test, and roll-out the legislative document review application and about two months for the public request act application. The whole platform is running on-premises on 30 physical and virtual servers. The legislative document review application went live at the end of 2010 and the public request act application was put into production in 2011. Neither application really uses the scanning capability.

Now, council reports and other legislative documents are delivered in digital format and are publicly available within hours of being finalized. Public requests for information are handled more consistently and in a fraction of the time it used to take.

About 500 users now access these two case management applications . . .

“We have close to 500 users. The legislative document review application is broadly used across the different departments. Roles have been defined and attributed for authors, reviewers, approvers and coordinators. The public records application is used by a smaller population — mainly city clerks and people from the legal department. Some employees, especially from legal, access both applications on a regular basis.” (Principal application developer)

. . . and have adopted them well.

“Our current two case management applications have actually been very well adopted by end users. Previously we did not have a tracking system in place for public records requests. So the minute we launched it, it was a big success. With regard to the legislative document review process, we had to manage the change and do some robust training. But in the end, it has been very well received, too.” (Principal application developer)

At the time of the interview, the organization was refining its retention policies and looking into the implementation of the Business Activity Monitor system, a feature included within Documentum xCP.

Framework Assumptions

Table 2 provides the model and salary assumptions that Forrester used in this analysis.

Table 2
Model Assumptions

| Ref. | Metric | Calculation | Value |
|------|---|----------------------|----------|
| A1 | Hours worked per day | | 8 |
| A2 | Average number of working days per year | | 230 |
| A3 | Average fully loaded annual salary rate | | \$75,000 |
| A4 | Average fully loaded daily salary rate | A3/A2 (rounded) | \$326 |
| A5 | Average fully loaded hourly salary rate | A3/(A2*A1) (rounded) | \$41 |

Source: Forrester Research, Inc.

The discount rate used in the PV and NPV calculations is 10% and time horizon used for the financial modeling is three years. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult with their respective companies' finance department to determine the most appropriate discount rate to use within their own organizations.

Costs

This section describes and lists the incremental costs over three years incurred by the interviewed organization for developing, deploying and maintaining two case management applications based on EMC Documentum xCP.

Case Management Software Costs

While the interviewed organization invested in the whole suite of content management software from EMC, for the sake of this business case, we only took the xCP modules into account that are necessary for the case management

applications. These modules range from the underlying Documentum repository and the process engine to the forms builder and the Documentum TaskSpace user interface. The equivalent xCP license fees (see row B1 in Table 3) were provided by EMC. Readers are encouraged to get in touch with EMC in order to determine what xCP license and maintenance fees would apply in their case.

Table 3

Case Management Software Costs

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|--|-----------------------|-----------|----------|----------|----------|-----------|
| B1 | Equivalent xCP license fees | | \$574,800 | | | | |
| B2 | Annual maintenance fee | | | \$75,000 | \$75,000 | \$75,000 | |
| Bt | Case management software license and maintenance costs | B1+B2 | \$574,800 | \$75,000 | \$75,000 | \$75,000 | \$799,800 |

Source: Forrester Research, Inc.

Development And Setup Costs

The two case management applications were designed, developed, and deployed mainly with in-house resources. The interviewed organization estimates the internal efforts for setting up the environment and developing the legislative document review application to 320 person-days. The organization also spent \$40,000 in professional services. This took about six months. The public request act application was less complex and took about 50 person-days of effort over the course of about two months. The resulting development and setup costs are indicated in Table 4 below.

Table 4

Development And Setup Costs

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|---|-----------------------|----------|--------|--------|--------|-------|
| C1 | Initial effort (in person-days) to set up the environment and develop, integrate, and test case management applications | | 320 | 50 | | | |
| C2 | Average fully loaded daily salary rate | \$326 (see A4) | | | | | |
| C3 | Professional services costs | | \$40,000 | | | | |

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|-----------------------------|-----------------------|-----------|----------|--------|--------|-----------|
| Ct | Development and setup costs | $(C1 * C2) + C3$ | \$144,320 | \$16,300 | \$0 | \$0 | \$160,620 |

Source: Forrester Research, Inc.

IT Infrastructure Costs

The case management solution is running on six physical and 24 virtual servers in the organization's data center and uses approximately 3.25 TB of storage. In this analysis, we assume a fully-loaded storage cost of \$5,000 per TB per year, taking into account a share of the costs (\$20,000) for the enterprise database license and \$10,000 per year for other related hardware and software maintenance. The total IT infrastructure costs are indicated in Table 5 below.

Table 5

IT Infrastructure Costs

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|---|--|-----------|----------|----------|----------|-----------|
| D1 | Number of physical servers | 6 | | | | | |
| D2 | Physical server costs | $D1 * \$10,000$ | \$60,000 | | | | |
| D3 | Number of virtual servers | 24 | | | | | |
| D4 | Virtual server costs | $D3 * \$3,500$ | \$84,000 | | | | |
| D5 | Amount of storage (in TB) | 3.25 TB | | | | | |
| D6 | Annual fully loaded storage cost | $D5 * \$5,000$ (fully loaded storage cost per TB per year) | | \$16,250 | \$16,250 | \$16,250 | |
| D7 | Share of enterprise database license costs | | \$20,000 | | | | |
| D8 | Other hardware and software maintenance costs | | | \$10,000 | \$10,000 | \$10,000 | |
| Dt | IT infrastructure costs | $D2 + D4 + D6 + D7 + D8$ | \$164,000 | \$26,250 | \$26,250 | \$26,250 | \$242,750 |

Source: Forrester Research, Inc.

Training Costs

On top of external training costs of \$24,000, this analysis takes into account the time for the end users to attend the training classes and thus the resulting costs for the organization. Authors spent about three hours in training, while reviewers and approvers attended about two hours of training. The total training costs are indicated in Table 6.

Table 6

Training Costs

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|--|--------------------------------|----------|--------|--------|--------|----------|
| E1 | Number of authors | 300 | | | | | |
| E2 | Number of reviewers and approvers | 200 | | | | | |
| E3 | Number of training hours for authors | 3 | | | | | |
| E4 | Number of training hours for reviewers and approvers | 2 | | | | | |
| E5 | Average fully loaded hourly salary rate | \$41 | | | | | |
| E6 | Employee training costs | $((E1 * E3) + (E2 * E4)) * E5$ | \$53,300 | | | | |
| E7 | External training costs | | \$24,000 | | | | |
| Et | Total training costs | $E6 + E7$ | \$77,300 | \$0 | \$0 | \$0 | \$77,300 |

Source: Forrester Research, Inc.

Operational Labor Costs

The interviewed organization has dedicated several resources to ensure ongoing operations. On top of the equivalent of 1.5 full-time resources from the business units, one program manager and one database administrator each spend about 25% of their time with these two case management applications. The resulting operational labor costs are shown in Table 7 below.

Table 7

Operational Labor Costs

| Ref. | Costs | Value/ calculation | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|--|-----------------------|---------|-----------|-----------|-----------|-----------|
| F1 | Number of dedicated program managers | 0.25 | | | | | |
| F2 | Number of dedicated database administrators | 0.25 | | | | | |
| F3 | Number of dedicated full-time equivalents from the business side | 1.5 | | | | | |
| F4 | Average fully-loaded annual salary | \$75,000 | | | | | |
| Ft | Operational labor costs | $(F1+F2+F3)*F4$ | \$0 | \$150,000 | \$150,000 | \$150,000 | \$450,000 |

Source: Forrester Research, Inc.

Total Costs

Table 8 summarizes the incremental non-risk-adjusted costs incurred by the interviewed organization for deploying and maintaining two case management applications based on xCP. In total, the organization spent approximately \$1.7 million over three years.

Table 8

Total Costs (Non-Risk-Adjusted)

| Ref. | Costs | Initial | Year 1 | Year 2 | Year 3 | Total |
|------|--------------------------------|-----------|-----------|-----------|-----------|-------------|
| G1 | Case management software costs | \$574,800 | \$75,000 | \$75,000 | \$75,000 | \$799,800 |
| G2 | Development and setup costs | \$144,320 | \$16,300 | \$0 | \$0 | \$160,620 |
| G3 | IT infrastructure costs | \$164,000 | \$26,250 | \$26,250 | \$26,250 | \$242,750 |
| G4 | Training costs | \$77,300 | \$0 | \$0 | \$0 | \$77,300 |
| G5 | Operational labor costs | \$0 | \$150,000 | \$150,000 | \$150,000 | \$450,000 |
| Gt | Total costs | \$960,420 | \$267,550 | \$251,250 | \$251,250 | \$1,730,470 |

Source: Forrester Research, Inc.

Benefits

The interviewed organization reported quantifiable benefits in terms of end user productivity gains and operational cost savings. Both benefit categories are discussed below.

End User Productivity Gains

The legislative document review and Public Request Act processes used to be very time-consuming. Council reports have to be submitted every week by numerous departments spread out across the city. Employees spent a lot of time creating, reviewing, modifying, printing, shipping, approving, and publishing the reports. Collaboration between departments was also fairly limited and resulted in additional work and delays to take into account requests for corrections and changes at fairly late stages in the document creation process. City clerks who had to respond to public requests for information had to go to the record room, search for the requested document, make a copy of it or scan it, and then mail it back to the requester. Each department tracked its own requests separately.

The two case management applications streamline these processes. By electronically preparing, reviewing, distributing, tracking, and approving documents, end users free up a considerable amount of time that they now can spend on other public services. The interviewed organization estimates that users of the legislative document review application save 10% of their time on average and that the Public Request Act application allows users to save about 5% of their time.

Only 50% of the time savings are included in Year 1 to take into account the ramp-up phase, during which the organization starts using the case management applications. Furthermore, Forrester assumes that for information workers, only a portion of the time gained from improved productivity will actually be realized by the organization. In this analysis, we assume that only 75% of the time saved by the knowledge workers will actually be converted into productive output.

The total three-year non-risk-adjusted productivity gains of approximately \$2.9 million are indicated in Table 9 below.

Table 9

End User Productivity Gains

| Ref. | Metric | Value/ calculation | Year 1 | Year 2 | Year 3 | Total |
|------|--|-----------------------|--------|--------|--------|-------|
| H1 | Number of users of the legislative document review application | 500 | | | | |
| H2 | Average time spent on the legislative document review process before the introduction of the case management application | 40% | | | | |
| H3 | Estimated average improved productivity for legislative document review application users | 10% | | | | |
| H4 | Number of users of the Public Request Act application | 20 | | | | |

| Ref. | Metric | Value/ calculation | Year 1 | Year 2 | Year 3 | Total |
|------|---|-------------------------------|-----------|-------------|-------------|-------------|
| H5 | Average time spent on the Public Request Act process before the introduction of the case management application | 50% | | | | |
| H6 | Estimated average improved productivity for Public Request Act application users | 5% | | | | |
| H7 | Number of hours worked per year | A1*A2 | 1,840 | 1,840 | 1,840 | 5,520 |
| H8 | Hours saved per year for the organization | $(H1*H2*H3+H4*H5*H6)*H7$ | 37,720 | 37,720 | 37,720 | 113,160 |
| H9 | Average fully-loaded hourly salary rate | \$41 | | | | |
| H10 | Percentage captured (percentage of the time saved that actually translates into productive output) | 75% | | | | |
| H11 | First-year ramp-up | 50% | | | | |
| Ht | End user productivity gains | $H8*H9*H10$ (*H11 for Year 1) | \$579,945 | \$1,159,890 | \$1,159,890 | \$2,899,725 |

Source: Forrester Research, Inc.

Operational Cost Savings

Due to the introduction of the two case management applications, the interviewed organization also saves a lot of paper. The interviewed organization estimates that it saves about \$250,000 annually. These operational cost savings not only take into account reduced paper costs but also reduced costs for printing, shipping, physical storage space, and related labor costs.

Only 50% of the time savings are included in Year 1 to take into account the ramp-up phase during which the organization starts using the case management applications,

Table 10

Operational Cost Savings

| Ref. | Metric | Value/ calculation | Year 1 | Year 2 | Year 3 | Total |
|----------------|---------------------------------|-----------------------|-----------|-----------|-----------|-----------|
| I1 | Annual operational cost savings | \$250,000 | | | | |
| I2 | First-year ramp-up | | 50% | | | |
| I _t | Operational cost savings | I1 (*I2 for Year 1) | \$125,000 | \$250,000 | \$250,000 | \$625,000 |

Source: Forrester Research, Inc.

Total Benefits

The interviewed organization expects to achieve total benefits of approximately \$3.5 million over the three-year period. Table 11 shows the total non-risk-adjusted benefits that were quantifiable for this study.

Table 11

Total Benefits (Non-Risk-Adjusted)

| Ref. | Benefits | Year 1 | Year 2 | Year 3 | Total |
|----------------|-----------------------------|-----------|-------------|-------------|-------------|
| J1 | End user productivity gains | \$579,945 | \$1,159,890 | \$1,159,890 | \$2,899,725 |
| J2 | Operational cost savings | \$125,000 | \$250,000 | \$250,000 | \$625,000 |
| J _t | Total benefits | \$704,945 | \$1,409,890 | \$1,409,890 | \$3,524,725 |

Source: Forrester Research, Inc.

Flexibility

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into a business benefit for some 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. There are multiple scenarios in which a customer might choose to deploy xCP Case Management and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

While data for calculating the monetary value of concrete flexibility options was not available at the time of publication, the interviewed customer highlights that xCP Case Management has additional potential benefits for the organization. The interviewed organization is particularly looking at:

- **Expanding the existing case management applications.** Other departments can easily join and leverage the existing case management application with regard to the Public Request Act. They will then experience similar productivity gains and operational cost savings.
- **Building new case management applications.** The interviewed organization is looking into transforming other processes close to the legislative document review process. With limited investment — because parts of the existing application can be leveraged — the organization can achieve further productivity gains and operational cost savings.
- **Refining transformed processes.** The interviewed organization is thinking about gaining more insight into business performance by implementing the Business Activity Monitor (BAM). This will help them to diagnose the root causes of problems and refine their processes.

Risk

Forrester defines two types of risk associated with this analysis: implementation risk and impact risk. “Implementation risk” is the risk that a proposed investment in xCP Case Management may deviate from the original or expected requirements, resulting in higher costs than anticipated. “Impact risk” refers to the risk that the business or technology needs of the organization may not be met by the investment in case management applications, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing investment and impact risk by directly adjusting the financial estimates results in more meaningful and accurate estimates and a more accurate projection of the ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as “realistic” expectations, as they represent the expected values considering risk.

The following implementation risks that affect costs are identified as part of this analysis:

- The original case management software licenses that were purchased by the interviewed organization were bundled together with other EMC licenses, but the indicated xCP license fees and maintenance costs are based on equivalent ECM pricing information and might be higher than originally estimated.
- The amount of internal effort required to prepare the environment and develop the case management applications depends, among other things, on the complexity of the company’s processes and might be higher than originally estimated.
- The share of some of the IT infrastructure costs, such as the enterprise database license, that can be attributed to the two case management applications are based on assumptions and might be higher than originally estimated.
- The amount of training needed over the three-year period may depend on the employee turnover and the costs may thus be higher than originally estimated.
- The amount of operational support required for the two case management applications is based on assumptions and might be higher than originally estimated.

The following impact risks that affect benefits have been identified as part of the analysis:

- End user productivity gains depend on the ability of the staff involved to reallocate their time productively.
- The amount of operational cost savings include assumptions around the reduction of printing and retrieval costs and might be lower than originally estimated.

Table 12 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur within the current environment. The risk-adjusted value is the mean of the distribution of those points.

Table 12
Cost And Benefit Risk Adjustments

| Costs | Low | Most likely | High | Mean |
|--------------------------------|------------|--------------------|-------------|-------------|
| Case management software costs | 98% | 100% | 105% | 101% |
| Development and setup costs | 100% | 100% | 115% | 105% |
| IT infrastructure costs | 100% | 100% | 115% | 105% |
| Training costs | 98% | 100% | 105% | 101% |
| Operational labor costs | 98% | 100% | 105% | 101% |
| Benefits | Low | Most likely | High | Mean |
| End user productivity gains | 50% | 100% | 100% | 83% |
| Operational cost savings | 90% | 100% | 105% | 98% |

Source: Forrester Research, Inc.

Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Costs and Benefits sections can be used to determine the return on investment, net present value, and payback period for the organization's investment in EMC Documentum xCP case management. These are shown in Table 13 below.

Table 13

Cash Flow: Non-Risk-Adjusted

| | Cash flow: original estimates | | | | | Present value |
|----------------|-------------------------------|-------------|-------------|-------------|---------------|---------------|
| | Initial | Year 1 | Year 2 | Year 3 | Total | |
| Costs | (\$960,420) | (\$267,550) | (\$251,250) | (\$251,250) | (\$1,730,470) | (\$1,600,060) |
| Benefits | \$0 | \$704,945 | \$1,409,890 | \$1,409,890 | \$3,524,725 | \$2,865,329 |
| Total | (\$960,420) | \$437,395 | \$1,158,640 | \$1,158,640 | \$1,794,255 | \$1,265,269 |
| ROI | 79% | | | | | |
| Payback period | 19 months | | | | | |

Source: Forrester Research, Inc.

Table 14 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values from Table 12 in the Risk section to the cost and benefits numbers in Table 8 and Table 11, respectively.

Table 14

Cash Flow: Risk-Adjusted

| | Cash flow: risk-adjusted estimates | | | | | Present value |
|----------------|------------------------------------|-------------|-------------|-------------|---------------|---------------|
| | Initial | Year 1 | Year 2 | Year 3 | Total | |
| Costs | (\$982,357) | (\$271,928) | (\$254,813) | (\$254,813) | (\$1,763,910) | (\$1,631,597) |
| Benefits | \$0 | \$603,854 | \$1,207,709 | \$1,207,709 | \$3,019,272 | \$2,454,434 |
| Total | (\$982,357) | \$331,927 | \$952,896 | \$952,896 | \$1,255,362 | \$822,837 |
| ROI | 50% | | | | | |
| Payback period | 21 months | | | | | |

Source: Forrester Research, Inc.

Overview: EMC Documentum xCP For Case Management

According to EMC, Documentum xCP provides a comprehensive, agile application development platform for building custom case management solutions that seamlessly integrate information and automate processes. xCP offers a unique advantage by covering all of the stages in the case management life-cycle with its combination of state-of-the-art process management, enterprise content management, analytics, data capture, customer communications, and compliance capabilities. xCP-based applications streamline and enhance the case management continuum — from validating the information to notifying the applicant to processing, review, and approval of the case. Organizations using Documentum xCP benefit from:

- **Increased worker productivity** with a web-based interface tailored to users' specific roles and tasks, as well as automation of repetitive and manual tasks.
- **Faster, cheaper development and deployment** of applications with a graphical modeling tool, reusable components, and solution accelerators.
- **Reduced risk** by ensuring that processes adhere to best practices, compliance policies, and management controls.
- **Improved decision quality and operational efficiency** by consolidating information, automating processes, and monitoring performance with dashboards, event notifications, advanced search, content analytics, and graphical, real-time reporting.
- **End-to-end information governance** with a comprehensive platform that provides unified and consistent policy enforcement, security, monitoring, and auditing across all your processes and information.

Documentum xCP offers a design tool for the creation, execution, monitoring, and optimization of process and information-intensive applications. Its easy-to-use graphical tool speeds process modeling and orchestration and allows the user experience to be created from a palette of reusable UI widgets. The xCP process engine handles task processing through configurable queues, workflow management, and notification services. Process analysis and activity monitoring components provide information to improve operational efficiencies, achieve compliance, and maximize responsiveness to evolving business conditions. Documentum xCP also offers:

- A model-driven composition environment that allows BPM and case management applications to be easily configured for rapid implementation, as opposed to requiring expensive and time-consuming custom software code to define new or modified functionality.
- Work queue and work policy management for high-volume tasks, straight-through automated processing, and transactional processes.
- Rich user interaction for collaboration, electronic forms, and configurable, role-based work interfaces.
- A service-oriented integration framework that allows external applications, data sources, and people to participate in the business process.
- Comprehensive content and data management capabilities for information-rich processes, including advanced compliance and record management capabilities.

- Proactive monitoring and management of business processes.
- Tight integration with EMC solutions for intelligent data capture and customer communications management.
- Advanced data analytics to help information workers make better business decisions with more impact.

No matter what process or set of processes they support, xCP-based applications bring together the people, information, and processes necessary to handle more cases and handle them much more efficiently. With Documentum xCP, enterprises get the flexible development platform they need to create wide-ranging case management applications that fit their specific requirements — and that evolve quickly as these requirements change.

Appendix A: Total Economic Impact™ Overview

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.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place 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. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the form of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections, and 2) the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as “triangular distribution” to the values entered. At minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprisewide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix B: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organization to determine the most appropriate discount rate to use in their own environment.

Net present value (NPV): The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

Present value (PV): The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate (shown in Framework Assumptions section) at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Table [Example]

Example Table

| Ref. | Category | Calculation | Initial cost | Year 1 | Year 2 | Year 3 | Total |
|------|----------|-------------|--------------|--------|--------|--------|-------|
| | | | | | | | |

Source: Forrester Research, Inc.

Appendix C: Related Forrester Research

“Dynamic Case Management: Definitely Not Your Dad’s Old-School Workflow/Imaging System,” Forrester Research, Inc., September 28, 2011

“Use Dynamic Case Management To Attack Untamed Processes,” Forrester Research, Inc., February 14, 2011

“The Forrester Wave™: Dynamic Case Management, Q1 2011,” Forrester Research, Inc., January 31, 2011

“Dynamic Case Management — An Old Idea Catches New Fire,” Forrester Research, Inc., December 28, 2009

Appendix D: Endnotes

¹ Forrester defines case management as a highly structured but also collaborative, dynamic, and information-intensive process that is driven by outside events and requires incremental and progressive responses from the business domain handling the case. Examples of case folders include a patient record, a lawsuit, an insurance claim, or a contract, and the case folder would include all the documents, data, collaboration artifacts, policies, rules, analytics, and other information needed to process and manage the case. Source: “Dynamic Case Management — An Old Idea Catches New Fire”, Forrester Research, Inc., December 28, 2009.

² Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information on risk, please see page 17.