

A Forrester Total Economic
Impact™ Study
Commissioned By
IBM Tealeaf

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The Total Economic Impact™ Of IBM Tealeaf CX Mobile

Cost Savings And Business Benefits
Enabled By CX Mobile

FORRESTER®

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Executive Summary

Mobile experience plays a central role in the minds of consumers and businesses alike. Customers expect high-performing mobile sites and apps to easily accomplish their needs. And businesses know that mobile is a key channel to win, serve, and retain their customers.¹ Mobile usage continues to skyrocket, with US marketing leaders reporting between 25% and 50% of their site traffic coming from mobile channels.² Your customers' expectations of your mobile performance are also at all-time highs.

These expectations are creating a perfect storm for organizations; your customers expect top-notch mobile interfaces, and a poor mobile experience can affect the well-being of the overall customer relationship. For this reason, it is key for organizations to have visibility into their customers' mobile experience. Companies must be able to quickly gather and analyze mobile data in a way that allows them to use these insights to optimize the mobile experience. This means customer experience professionals are on the hunt for a solution that will help them understand the mobile customers' experiences and ultimately improve their mobile sites and apps.

IBM Tealeaf commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying CX Mobile. CX Mobile is an add-on to other Tealeaf products that enables companies to gain visibility into the customer experience across mobile websites, native applications, and hybrid applications.

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of CX Mobile on their organizations and improve the customer experience in the mobile environment to win, serve, and retain customers. To better understand the benefits, costs, and risks associated with a CX Mobile implementation, Forrester interviewed two existing customers with experience using CX Mobile and conducted an online survey 31 CX Mobile users.

CX MOBILE INCREASES MOBILE CONVERSION RATES AND IMPROVES CUSTOMER RETENTION AND SATISFACTION

Our interviews with two existing customers plus online surveys and subsequent financial analysis found that a composite organization based on these experienced the risk-adjusted ROI, benefits, and costs shown in Figure 1.³ See Appendix A for a description of the composite organization.

The composite organization analysis points to benefits of \$1.3 million per year versus implementation costs of approximately \$440,000, adding up to a net present value (NPV) of \$864,460.

FIGURE 1
Financial Summary Showing Three-Year Risk-Adjusted Results



Source: Forrester Research, Inc.

› **Benefits.** The composite organization experienced the following risk-adjusted benefits that represent those experienced by the interviewed companies:

- **Incremental revenue from a 2% increase in conversion rate of mobile sales and transactions.** By using CX Mobile to eliminate key issues that led to abandonment of mobile transactions, the composite organization increased its conversion rate by 2%, leading to an increase in revenue of \$975,645 over the three years.
- **Incremental revenue resulting from a 1.5% increase in customer retention.** Along with increasing the conversion rate, using CX Mobile also helped improve the overall mobile experience, resulting in a 1.5% increase in customer retention over the three years. This results in a total of \$130,086 in additional revenue over the three years.
- **Sixty percent reduction in time spent on reproduction of mobile issues.** CX Mobile increased the ease with which mobile issues were reproduced, reducing the reproduction time by 60% by Year 3. This led to \$269,870 in saved time over the three years.
- **Savings from mobile development prioritization.** The composite organization used the data produced by CX Mobile in order to better understand the impact of mobile issues and was able to better prioritize its development efforts on only the most beneficial issues. This led to a savings of \$123,557 over the three years.
- **Thirty second decrease in average call center handling time.** With CX Mobile, call center representatives were able to quickly access and reply to a customer session, resulting in a 30-second decrease in average call times. This time savings led to an additional \$101,250 saved over the three years.

› **Costs.** The composite organization experienced the following risk-adjusted costs:

- **Software licensing fees and maintenance costs.** These are initial, one-time fees paid to IBM Tealeaf for access to CX Mobile. Additionally, in subsequent years there was an annual maintenance fee, resulting in a total cost of \$80,850 over the three years.
- **Incremental storage costs.** In addition to the software costs, our composite organization incurred incremental storage costs to support CX Mobile. This cost worked out to \$30,450 over the three years.
- **Professional services and training fees.** The composite organization used IBM Tealeaf professional services to improve implementation and effectively train staff to get the most from CX Mobile. This cost the organization \$52,800 over three years.
- **Incremental IT administration support staff.** To support CX Mobile, the composite organization would require about 35% of one full-time employee (FTE)'s time, resulting in a cost of \$115,500 over the three years.
- **Incremental customer experience staff.** The composite organization has one member of the customer experience staff serving as the champion of CX Mobile, spending 50% of their time working with the data to help other members of the team make improvements to the mobile channel. This works out to a cost of \$231,000 over three years.

Disclosures

The reader should be aware of the following:

- › The study is commissioned by IBM Tealeaf 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 IBM Tealeaf CX Mobile.
- › IBM Tealeaf reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.
- › IBM Tealeaf provided the customer names for the interviews but did not participate in the interviews.

TEI Framework And Methodology

INTRODUCTION

From the information provided in the interviews, Forrester has constructed a Total Economic Impact (TEI) framework for those organizations considering implementing IBM Tealeaf CX Mobile. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision, to help organizations understand how to take advantage of specific benefits, reduce costs, and improve the overall business goals of winning, serving, and retaining customers.

APPROACH AND METHODOLOGY

Forrester took a multistep approach to evaluate the impact that IBM Tealeaf CX Mobile can have on an organization (see Figure 2). Specifically, we:

- › Interviewed IBM Tealeaf marketing, sales, and/or consulting personnel, along with Forrester analysts, to gather data relative to CX Mobile and the marketplace for CX Mobile.
- › Interviewed two organizations and surveyed 31 organizations that are currently using IBM Tealeaf CX Mobile to obtain data with respect to costs, benefits, and risks.
- › Designed a composite organization based on characteristics of the interviewed organizations (see Appendix A).
- › 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 and surveys as applied to the composite organization.
- › Risk-adjusted the financial model based on issues and concerns the interviewed organizations highlighted in interviews. Risk adjustment is a key part of the TEI methodology. While interviewed organizations provided cost and benefit estimates, some categories included a broad range of responses or had a number of outside forces that might have affected the results. For that reason, some cost and benefit totals have been risk-adjusted and are detailed in each relevant section.

Forrester employed four fundamental elements of TEI in modeling IBM Tealeaf CX Mobile's service: 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 B for additional information on the TEI methodology.

FIGURE 2
TEI Approach



Source: Forrester Research, Inc.

Analysis

COMPOSITE ORGANIZATION

For this study, Forrester conducted a total of two interviews with representatives from the following companies, which are IBM Tealeaf customers based in the US:

- › A retail bank organization. The bank uses CX Mobile to better understand both its mobile web users as well as its mobile application users. The bank uses CX Mobile to monitor its applications available for iPhones, Android phones, and Windows phones, as well as its mobile website.
- › A retail bank that offers a range of commercial and consumer banking products, investment and brokerage services, insurance products, and investment banking. The bank uses CX Mobile to better understand the customer experience on its iPhone and Android applications, as well as its mobile website.
- › In addition to the interviews, Forrester conducted an online survey of 31 organizations in the US that have deployed CX Mobile. Online survey participants included line-of-business and IT professionals who make, influence, or have knowledge around decisions related to customer experience technology. While a wide variety of industries were represented, most respondents were from retail organizations. Other industries included financial services, insurance, and other services.

Based on the interviews and online surveys, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization that Forrester synthesized from these results represents a US-based retail organization. It has about 66,000 daily visitors (24.09 million visitors per year) to its mobile platforms.

The composite organization had previously used Tealeaf CX, Tealeaf cxReveal, and the Tealeaf Customer Behavior Analysis (CBA) Suite to improve the customer experience for its online users. The composite organization realized mobile is a fast-growing channel and implemented CX Mobile in order to understand its mobile users' experience across its mobile website and applications.

“Having high-performing mobile capabilities — it’s more or less an expectation within the marketplace.”

~ IT director

INTERVIEW HIGHLIGHTS

The interviews and surveys uncovered the following drivers behind the composite organization's need for IBM Tealeaf CX Mobile:

- › **Mobile access has become standard, and a high-performing mobile experience is key to staying competitive.** Mobile usage is at an all-time high. As one interviewee told us: “We’ve seen tremendous adoption of our mobile channels. The amount of time they spend using the mobile sites or apps has increased dramatically. We are now interacting with our customers a lot more frequently than we would have through more traditional channels, even some of the digital channels.” With this increase in demand comes an increase in competition. “We need mobile access to stay competitive, to keep up with the competition in our market space. We need to keep up with customer demand, and having high-performing mobile capabilities — I think it’s more or less an expectation within the marketplace.” Having an excellent mobile experience is key to winning and retaining customers.

- › **To create an optimized experience, the organizations needed to fully understand how users interact with their mobile web and apps.** These organizations had worked hard to optimize their online channels, and they realized that in order to create the most satisfactory experience for their customers, they needed to bring the same visibility to their mobile platforms. As one organization told us: “We use it as a way to understand the behavior, to see if there are opportunities for us to improve the way we have implemented certain mobile features. Our objective was to bring the same level of detail and understanding that we have for our web platform to our mobile platform.”
- › **Organizations need to understand individual users’ mobile issues.** Our interviews revealed that organizations need to be able to quickly understand and address mobile issues, as well as proactively monitor mobile users for any app failures, usability concerns, or other obstacles. As one interviewee told us, “The ability to quickly find a session, bring it up, and play it back screen by screen, touch by touch, helps us make sure our customers can do what they want on our apps.” With the proliferation of devices and operating systems, a solution that helped them quickly identify the issue was key to helping customers.
- › **Companies want to not only discover quick fixes but also understand high-level trends to create continuous customer experience improvements.** The organizations we spoke with highlighted a growing trend: Fixing an existing issue is not enough. Smart companies know they need to have a better understanding of why their customers are succeeding or failing on a mobile device, so that they can take action to address the customer experience issues before they become a larger problem. Companies want a solution that not only has an impact on the IT side but also helps the business side make smarter customer experience decisions.

“CX Mobile helps us immediately identify and address mobile problems.”

~ Web analytics manager

Our interviews revealed that IBM Tealeaf CX Mobile was selected for a variety of reasons. Interviewees told us that:

- CX Mobile extends the benefits of IBM’s Tealeaf CBA and Customer Service Optimization (CSO) Suite to bring increased value to the organization. One interviewed customer indicated that by adding CX Mobile to its existing Tealeaf solutions, the organization was able to bring in incremental benefits by improving the customer experience of its mobile solutions, in addition to its online eCommerce sites.
- IBM Tealeaf CX Mobile provides instant visibility into how users interact with mobile channels. Our interviewees told Forrester that they were impressed with the level of visibility CX Mobile created into the mobile process.
- With CX Mobile, these organizations were able to understand explicitly how customers interacted with their mobile devices. CX Mobile reproduced the exact mechanics of the mobile interaction, including how users directly interacted with the device, such as tapping, swiping, pinching, zooming, scrolling, and rotating the device. CX Mobile also captured key mobile attributes, such as device manufacturer, operating system, browser type, and screen resolution. This level of detail was key to customer service representatives.
- The analytics, alerts, and dashboards that CX Mobile provides to organizations also helped to improve the overall mobile experience, creating a more satisfactory experience for users and ultimately improving the organization’s bottom line.

BENEFITS

The composite organization experienced a number of quantified benefits in this case study:

- › Incremental revenue from increased conversion rate of mobile sales and transactions.
- › Incremental revenue from improved customer retention.
- › Time saved in reproduction of mobile issues.
- › Savings from mobile development prioritization.
- › Decrease in average call center handling time.



Incremental Revenue From Increased Conversion Rate Of Mobile Sales And Transactions

A key benefit experienced by the composite organization was the improvement in the conversion rate of mobile sales and transactions. Our composite organization used the data gathered through CX Mobile to better understand the customer experience of its mobile users, and it was able to learn about key issues that led to the abandonment of a transaction. The visibility into the mobile user experience created by CX Mobile allowed the composite organization to optimize the mobile experience by eliminating key obstacles and ultimately capture more sales.

The composite organization has 66,000 daily mobile visitors, or 24.09 million mobile visitors per year. The average order value for a mobile transaction is \$250, with a gross margin of 20%. Conversion rates vary from industry to industry; for this study, Forrester applied industry knowledge and information gathered from interviews and surveys to determine a mobile conversion rate of 2%.

Over a three-year period, the composite organization used CX Mobile's analyses and alerts to increase its conversion rate by 2% by Year 3. As the organization became more comfortable analyzing the data from CX Mobile and began to use the data to improve the mobile experience, it increased the conversion rate from 1% in Year 1 to 1.5% in the second year, and finally up to 2% by Year 3. Note that Forrester used a conservative calculation in this study; the calculation does not take into account growth in the total number of mobile visitors or an increase in order value. Table 1 shows this benefit in each of the three years of analysis. The gross margin of 20% is used in this study to calculate the profit that accrues to the company. The incremental revenue realized by the composite organization is similar to the incremental revenue expressed by the interviewed companies.

Interviewed organizations provided a range of responses when thinking about the increased conversion rate, average order value, and number of mobile visitors. To compensate for this range, this benefit was risk-adjusted and reduced by 10%. The risk-adjusted total benefit resulting from the incremental revenue from increased conversion rate of mobile sales and transactions over the three years was \$975,645. See the section on Risks for more details.

TABLE 1
Incremental Revenue From Increased Conversion Rate Of Mobile Sales And Transactions

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Annual number of mobile visitors	66,000 daily visitors * 365 days	24,090,000	24,090,000	24,090,000
A2	Average order value		\$250	\$250	\$250
A3	Conversion rate		2%	2%	2%
A4	Increase in conversion rate		1%	1.5%	2%
A5	Gross margin		20%	20%	20%
At	Incremental revenue from increased conversion rate of mobile sales and transactions	$A1 \cdot A2 \cdot A3 \cdot A4 \cdot A5$	\$240,900	\$361,350	\$481,800
	Risk adjustment	↓ 10%			
Atr	Incremental revenue from increased conversion rate of mobile sales and transactions (risk-adjusted)		\$216,810	\$325,215	\$433,620

Source: Forrester Research, Inc.



Incremental Revenue From Improved Customer Retention

As we have seen, the IBM Tealeaf CX Mobile solution enabled the composite organization to eliminate many problems that affected the overall mobile customer experience. The organizations interviewed found that if customers had difficulty utilizing the mobile website or mobile application, they were unlikely to try again, resulting in lost revenues. As echoed by the interviewed companies, the composite organization spent much of the initial period of using CX Mobile finding and fixing key mobile issues. As the organization's use of CX Mobile matured, it continued to improve the mobile customer experience, which leads to happier mobile users. These users are more likely to be repeat mobile users and help to gradually improve the number of repeat purchasers seen by the composite organization.

To calculate this benefit, Forrester looked at the number of mobile transactions per year. With 66,000 daily visitors and a mobile conversion rate of 2%, this works out to 481,800 mobile transactions per year. Table 2 shows how this benefit was calculated. Prior to CX Mobile, our composite organization experienced an average mobile retention rate of 20%, similar to that of the interviewed organizations. By using CX Mobile to improve the overall mobile experience for users, the composite organization was able to improve the retention rate of mobile users gradually over the three years of analysis, finally improving the retention rate by 1.5%.

Different organizations noted different average mobile retention and improvement rates; to accommodate for this, the benefit was risk-adjusted and reduced by 10%. Assuming the average order value of \$250 and a gross margin of 20%, the three-year risk-adjusted total benefit was \$130,086.

TABLE 2
Incremental Revenue From Improved Customer Retention

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Number of mobile transactions per year	66,000 daily visitors * mobile conversion rate of 2% * 365 days	481,800	481,800	481,800
B2	Average mobile retention rate		20%	20%	20%
B3	Percent improvement in retention rate		0.5%	1.0%	1.5%
B4	Average order value		\$250	\$250	\$250
B5	Gross margin		20%	20%	20%
Bt	Incremental revenue from improved customer retention	$B1*B2*B3*B4*B5$	\$24,090	\$48,180	\$72,270
	Risk adjustment	↓ 10%			
Btr	Incremental revenue from improved customer retention (risk-adjusted)		\$21,681	\$43,362	\$65,043

Source: Forrester Research, Inc.



Time Saved In Reproduction Of Mobile Issues

Our interviews uncovered that CX Mobile enabled organizations to reproduce and identify mobile issues more quickly than before, resulting in significant time savings. Prior to CX Mobile, the composite organization relied on customer descriptions to try and determine an issue. This process could often take many hours and relied heavily on customer time to help understand the type of device, the operating system, and the steps that caused the issue. Often, the composite organization had trouble recreating the issue, if it was able to reproduce it at all. With CX Mobile, the composite organization was able to quickly identify and investigate mobile issues, saving time for developers and customers alike.

In order to calculate this benefit, Forrester assumes there are 300 mobile incidents a year that use CX Mobile to help identify the issue. Prior to the implementation of CX Mobile, the composite organization spent an average of 9 hours to reproduce a mobile issue. Note that while the calculation focuses on the time spent by developers, many of these issues also required the time of the customers. While the customers' time was not directly calculated, it is important to note that CX Mobile ensures that customers do not need to spend their valuable time helping the composite organization reproduce the mobile issue. By using CX Mobile, the composite organization is able to reduce the time spent to reproduce a mobile issue by 50%. Table 3 shows how this was calculated. To compensate for variances in hours saved, this benefit was risk-adjusted and reduced by 10%. The risk-adjusted total benefit over the three years was \$269,870.

TABLE 3
Time Saved In Reproduction Of Mobile Issues

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Average number of hours required to reproduce a mobile issue before CX Mobile		9	9	9
C2	Percent reduction in reproduction of error with CX Mobile		50%	55%	60%
C3	Annual number of mobile incidents that use CX Mobile		300	300	300
C4	Hourly rate of developers	\$140,000/2,080	\$67	\$67	\$67
Ct	Time saved in reproduction of mobile issues	$C1 * C2 * C3 * C4$	\$90,865	\$99,952	\$109,038
	Risk adjustment	↓ 10%			
Ctr	Time saved in reproduction of mobile issues (risk-adjusted)		\$81,779	\$89,957	\$98,135

Source: Forrester Research, Inc.



Savings From Mobile Development Prioritization

Today's mobile environment creates complex issues for development. With the proliferation of devices and operating systems, it is often difficult to have enough visibility into the mobile user landscape to understand where to focus development resources. Interviewed organizations mentioned that a key benefit of CX Mobile was how it enabled them to prioritize mobile development by helping them understand which issues affect the most customers.

Prior to CX Mobile, interviewed organizations shared with us how development issues were largely handled ad hoc. This could lead to valuable resources spending time on projects that had little impact on the overall mobile customer experience. Now, with CX Mobile, organizations are able to analyze and prioritize mobile development projects. By capturing device-level and in-screen behaviors of mobile users, CX Mobile creates visibility into how customers use the mobile features and helps organizations understand the extent of an issue and how many users are affected. The development team is able to use CX Mobile to help them understand if there are specific devices or operating systems that are causing issues. CX Mobile helps organizations prioritize development issues, ensuring organizations address the most significant issues quickly, and improve the mobile experience for the majority of mobile customers. This ensures that the development team spends its time wisely, and ultimately saves money.

To calculate this benefit, the model assumes that each year there are 20 potential mobile projects for the development team to work on. In years past, the development team would have worked on each of these projects without a clear picture of the impact or priority of each issue. By using CX Mobile's analysis of the problem and visibility into the size of the issue, the team is able to prioritize the potential projects and focus on 40% of these issues, or only 8 projects. This means the development team avoids taking on 12 projects each year. Assuming that each issue takes 60 hours of development time, and with an assumed salary of \$67 per hour, the savings from mobile development prioritization is \$48,462 each year. However, interviewed organizations did note that the number of projects undertaken or the time spent on each could differ. To take that into consideration, Forrester risk-adjusted and reduced the benefit by 15%, resulting in a three-year risk-adjusted total benefit of \$123,557. Table 4 highlights this calculation.

TABLE 4
Savings From Mobile Development Prioritization

Ref.	Metric	Calculation	Year 1
D1	Number of potential mobile projects		20
D2	Percent of projects undertaken with CX Mobile		40%
D3	Number of projects avoided with prioritization with CX Mobile	$D1 - (D1 * D2)$	12
D4	Average number of developer hours spent on a mobile project	hours	60
D5	Hourly rate of developers	C4	\$67
Dt	Savings from mobile development prioritization	$D3 * D4 * D5$	\$48,462
	Risk adjustment	↓15%	
Dtr	Savings from mobile development prioritization (risk-adjusted)		\$41,192

Source: Forrester Research, Inc.



Decrease In Average Call Center Handling Time

The investment in CX Mobile had the additional benefit of affecting the customer service organization. CX Mobile allowed customer service representatives to quickly access and replay a customer's mobile session without needing to ask a series of diagnostic questions. Calls are handled more quickly, and the time required to solve issues has decreased.

In order to calculate this benefit, the model assumes that the composite organization has 100 customer service representatives in its call center, with an average of 10 calls being handled by each representative each hour. Of these, about 20% relate to a mobile usability issue, and about 50% of those calls use CX Mobile to help diagnose the issue. Through the use of CX Mobile, customer service reps saw a decrease in average handle times of 30 seconds. Table 5 shows how this was calculated.

Due to variability in the amount of time saved or the times that CX Mobile was used, Forrester risk-adjusted this benefit and decreased it by 10%. The total risk-adjusted value over three years was \$101,250.

TABLE 5
Decrease In Average Call Center Handling Time

Ref.	Metric	Calculation	Per Year
E1	Number of calls handled per hour by customer service representative		10
E2	Total calls per year	100 customer service reps * E1 * 2,080 working hours per year	2,080,000
E3	Percent of calls with mobile usability issue		20%
E4	Percent of calls where customer service uses CX Mobile		50%
E5	Number of calls a year using CX Mobile	$E2 * E3 * E4$	208,000
E6	Saving in average handle time (minutes)	saves 30 seconds	0.5
E7	Customer service rep hourly salary	$\$45,000 / 2,080$ hours	\$21.63
Et	Decrease in average call center handling time	$E5 * (E6 / 60 \text{ minutes}) * E7$	\$37,500
	Risk adjustment	↓ 10%	
Etr	Decrease in average call center handling time (risk-adjusted)		\$33,750

Source: Forrester Research, Inc.

Total Benefits

Table 6 shows the total of all benefits across the five areas listed above, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than \$1.2 million.

TABLE 6
Total Benefits (Risk-Adjusted)

Ref.	Benefit Category	Year 1	Year 2	Year 3	Total	Present Value
Atr	Incremental revenue from increased conversion rate of mobile sales and transactions	\$216,810	\$325,215	\$433,620	\$975,645	\$791,658
Btr	Incremental revenue from improved customer retention	\$21,681	\$43,362	\$65,043	\$130,086	\$104,414
Ctr	Time saved in reproduction of mobile issues	\$81,779	\$89,957	\$98,135	\$269,870	\$222,419
Dtr	Savings from mobile development prioritization	\$41,192	\$41,192	\$41,192	\$123,577	\$102,439
Etr	Decrease in average call center handling time	\$33,750	\$33,750	\$33,750	\$101,250	\$83,931
Total benefits (risk-adjusted)		\$395,212	\$533,476	\$671,740	\$1,600,428	\$1,304,861

Source: Forrester Research, Inc.

COSTS

The composite organization experienced a number of costs associated with the CX Mobile solution:

- › Software licensing fees and maintenance costs.
- › Incremental storage costs.
- › Professional services and training fees.
- › Incremental IT administration support staff.
- › Incremental customer experience staff.

These represent the mix of internal and external costs experienced by the composite organization for initial planning, implementation, and ongoing maintenance associated with the solution.



Software Licensing And Maintenance Costs

Software licensing fees for CX Mobile were incurred during the initial implementation period; in subsequent years, an annual maintenance fee, calculated as a percentage of the initial software licensing fee, was applied.

Software costs vary from organization to organization, considering different licensing agreements, what other products may be licensed from the same vendor, and other discounts. To compensate, this cost was risk-adjusted up by 5%. The risk-adjusted cost of software over the three years was \$80,850. See the section on Risks for more detail.

TABLE 7
Software Licensing And Maintenance Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	CX Mobile software costs		\$44,000			
F2	Annual maintenance percentage		25%			
F3	Maintenance fee	$F1 \times F2$		\$11,000	\$11,000	\$11,000
Ft	Software license and maintenance costs	$F1 + F3$	\$44,000	\$11,000	\$11,000	\$11,000
	Risk adjustment	↑ 5%				
Ftr	Software licensing and maintenance costs (risk-adjusted)		\$46,200	\$11,550	\$11,550	\$11,550

Source: Forrester Research, Inc.



Incremental Storage Costs

In addition to the software costs, our composite organization incurred incremental storage costs to support CX Mobile. In subsequent years, an annual maintenance fee, calculated as a percentage of the storage costs, was

applied.

Storage costs are more variable from organization to organization, depending on the organization's size and how much data it is storing. To compensate, this cost was risk-adjusted up by 5%. The risk-adjusted cost of incremental storage over the three years was \$30,450.

TABLE 8
Incremental Storage Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Storage		\$20,000			
G2	Annual maintenance percentage		15%			
G3	Annual maintenance costs	$G1 \times G2$		\$3,000	\$3,000	\$3,000
Gt	Incremental storage costs	$G1 + G3$	\$20,000	\$3,000	\$3,000	\$3,000
	Risk adjustment	↑ 5%				
Gtr	Incremental storage costs (risk-adjusted)		\$21,000	\$3,150	\$3,150	\$3,150

Source: Forrester Research, Inc.



Professional Services And Training

The composite organization used IBM Tealeaf to help set up CX Mobile as well as provide training to IT, customer experience staff, and the customer service organization. The composite organization initially purchased \$30,000 of services that included implementation, product user training, and best practices training. In following years, the composite organization leveraged IBM Tealeaf to train new users as necessary, incurring an additional \$6,000 for years 1 through 3. As the composite organization found through its experiences with other Tealeaf products, a thorough understanding of the product is necessary to get the most value from the investment.

Due to the fact that organizations may require different levels of services and training, this cost was risk-adjusted up by 10%. The risk-adjusted cost of professional services and training over the three years was \$52,800.

TABLE 9
Professional Services And Training

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
H1	Professional services (implementing, training, and best practices)		\$30,000	\$6,000	\$6,000	\$6,000
Ht	Professional services and training		\$30,000	\$6,000	\$6,000	\$6,000
	Risk adjustment	↑ 10%				
Htr	Professional services and training (risk-adjusted)		\$33,000	\$6,600	\$6,600	\$6,600

Source: Forrester Research, Inc.



Incremental IT Administration Support Staff

The IT team provides administrative support for the CX Mobile solution, such as upgrades and maintenance. Interviewees told us that the time IT requires to support CX Mobile is relatively minimal. Forrester estimates that the composite organization would require about 35% of one FTE's time to support CX Mobile.

To compensate for salary differences and time spent supporting CX Mobile, this cost was risk-adjusted up by 10%. The risk-adjusted cost of an incremental IT admin over the three years was \$115,500.

TABLE 10
Incremental IT Administration Support Staff

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
I1	% of one IT FTE supporting CX Mobile		35%	35%	35%
I2	Annual fully loaded salary		\$100,000	\$100,000	\$100,000
It	Incremental IT administration support staff	I1*I2	\$35,000	\$35,000	\$35,000
	Risk adjustment	↑ 10%			
Itr	Incremental IT administration support staff (risk-adjusted)		\$38,500	\$38,500	\$38,500

Source: Forrester Research, Inc.



Incremental Customer Experience Staff

The composite organization has one member of the customer experience staff serving as the champion of CX Mobile. This employee helps the organization understand mobile usage patterns to optimize the mobile customer experience as well as increase mobile conversion rates. This individual is responsible for helping other departments, such as the development team, use the information from CX Mobile to make business decisions.

To compensate for variations in salary and time dedicated to CX Mobile, this cost was risk-adjusted up by 10%. The risk-adjusted cost of an incremental customer experience staff member over the three years was \$231,000.

TABLE 11
Incremental Customer Experience Staff

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
J1	% of one FTE's time dedicated to supporting Tealeaf CX Mobile		50%	50%	50%
J2	Fully loaded annual salary		\$140,000	\$140,000	\$140,000
Jt	Incremental customer experience staff	J1*J2	\$70,000	\$70,000	\$70,000
	Risk adjustment	↑ 10%			
Jtr	Incremental customer experience staff (risk-adjusted)		\$77,000	\$77,000	\$77,000

Source: Forrester Research, Inc.

Total Costs

Table 12 shows the total of all costs as well as associated present values, discounted at 10%. Over three years, the composite organization expects total costs to total a net present value of a little more than \$440,000.

TABLE 12
Total Costs (Risk-Adjusted)

Ref.	Cost Category	Initial	Year 1	Year 2	Year 3	Total	Present Value
Ftr	Software licensing and maintenance costs	\$46,200	\$11,550	\$11,550	\$11,550	\$80,850	\$74,923
Gtr	Incremental storage costs	\$21,000	\$3,150	\$3,150	\$3,150	\$30,450	\$28,834
Htr	Professional services and training	\$33,000	\$6,600	\$6,600	\$6,600	\$52,800	\$49,413
Itr	Incremental IT administration support staff	\$0	\$38,500	\$38,500	\$38,500	\$115,500	\$95,744
Jtr	Incremental customer experience staff	\$0	\$77,000	\$77,000	\$77,000	\$231,000	\$191,488
	Total costs (risk-adjusted)	\$100,200	\$136,800	\$136,800	\$136,800	\$510,600	\$440,401

Source: Forrester Research, Inc.

FLEXIBILITY

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into 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 implement CX Mobile 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 B).

RISKS

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 CX Mobile 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 CX Mobile, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

TABLE 13
Benefit And Cost Risk Adjustments

Benefits	Adjustment
Incremental revenue from increased conversion rate of mobile sales and transactions	↓ 10%
Incremental revenue from improved customer retention	↓ 10%
Time saved in reproduction of mobile issues	↓ 10%
Savings from mobile development prioritization	↓ 15%
Decrease in average call center handling time	↓ 10%
Costs	Adjustment
Software licensing and maintenance costs	↑ 5%
Incremental storage costs	↑ 5%
Professional services and training	↑ 10%
Incremental IT administration support staff	↑ 10%
Incremental customer experience staff	↑ 10%

Source: Forrester Research, Inc.

Quantitatively capturing implementation risk and impact risk by directly adjusting the financial estimates results provides 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 since they represent the expected values considering risk.

The following impact risk that affects benefits is identified as part of the analysis:

- › Adoption risk is a risk that can greatly affect benefits. Employee use and buy-in are the keys to realizing the full benefits mentioned in this study. Interviewed organizations noted that when CX Mobile was used not just as a means to identify and fix issues, but as a larger part of a strategic focus on optimizing the mobile customer experience, they realized more value from their investment.

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

- › The cost of professional services or level of training may be higher than originally anticipated.
- › Storage requirements may be greater than initially anticipated.

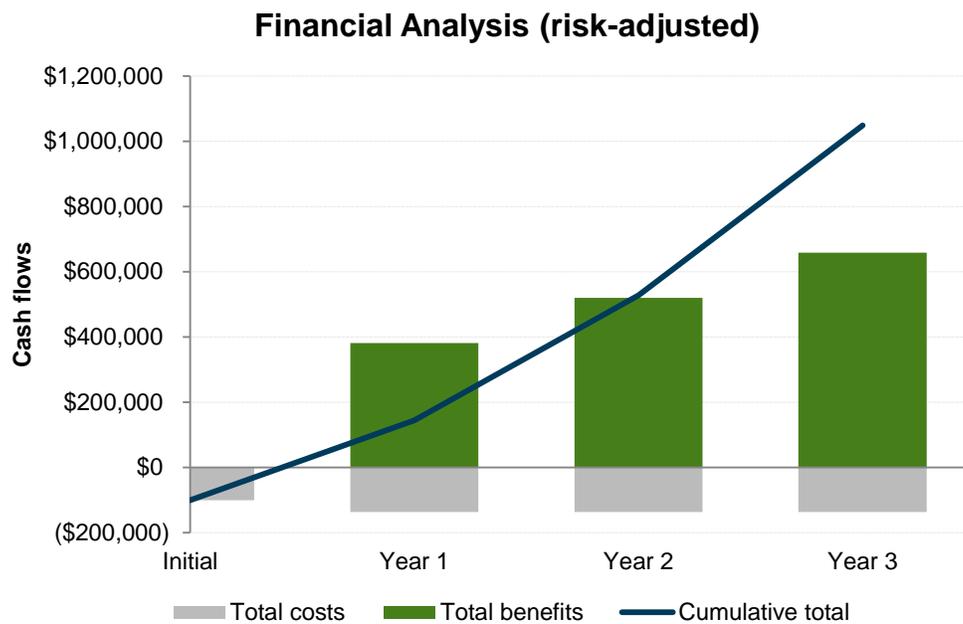
Table 13 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates for the composite organization. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment in CX Mobile.

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 13 in the Risks section to the unadjusted results in each relevant cost and benefit section.

FIGURE 3
Cash Flow Chart (Risk-Adjusted)



Source: Forrester Research, Inc.

TABLE 14
Cash Flow (Risk-Adjusted)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Costs	(\$100,200)	(\$136,800)	(\$136,800)	(\$136,800)	(\$510,600)	(\$440,401)
Benefits	\$0	\$395,212	\$533,476	\$671,740	\$1,600,428	\$1,304,861
Net benefits	(\$100,200)	\$258,412	\$396,676	\$534,940	\$1,089,828	\$864,460
ROI						196%
Payback period						4.7 months

Source: Forrester Research, Inc.

IBM Tealeaf CX Mobile: Overview

The following information is provided by IBM Tealeaf. Forrester has not validated any claims and does not endorse IBM Tealeaf or its offerings.

IBM Tealeaf CX Mobile enables companies to apply Tealeaf's customer experience management solutions to their mobile websites, native applications, and hybrid applications, including support for HTML5 and responsive web design (RWD). CX Mobile provides visibility into the mobile customer experience, helping to deliver more successful mobile products and services. Tealeaf CX Mobile works with the Tealeaf CX platform and Tealeaf Customer Behavior Analytics Suite.

Tealeaf CX Mobile helps companies to:

- › Optimize customer experiences across their mobile channels, including mobile web, HTML5, and RWD-based sites as well as hybrid apps and native apps, such as iOS and Android.
- › Gain mobile visibility by capturing user information and touchscreen gestures such as tapping, swiping, pinching, zooming, scrolling, and device rotation.
- › Build and manage an early warning system to detect mobile user problems and provide proactive awareness into mobile application failures, usability issues, or other obstacles.
- › Quantify revenue impact and segmentation with near-real-time drag-and-drop analysis by specific mobile user behaviors or device attributes.
- › Quickly find and isolate problems within mobile customer sessions — for both individual customers and aggregates — with powerful ad hoc discovery and segmentation.

Appendix A: Composite Organization Description

For this TEI study, Forrester has created a composite organization to illustrate the quantifiable benefits and costs of implementing CX Mobile. Based on the interviews and online surveys, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization that Forrester synthesized from these results represents a US-based retail organization. It has about 66,000 daily visitors (24.09 million visitors per year) to its mobile platforms.

The composite organization had previously used Tealeaf CX and the Tealeaf CBA Suites to improve the customer experience for its online users. The composite organization realized mobile as a fast-growing channel and implemented CX Mobile in order to understand its mobile users' experience across its mobile website and applications.

FRAMEWORK ASSUMPTIONS

Table 15 provides the model assumptions that Forrester used in this analysis.

The discount rate used in the PV and NPV calculations is 10%, and the 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 company's finance department to determine the most appropriate discount rate to use within their own organizations.

TABLE 15
Model Assumptions

Ref.	Metric	Calculation	Value
C1	Hours per week		40
C2	Weeks per year		52
C3	Hours per year (M-F, 9-5)		2,080
C4	Hours per year (24x7)		8,736

Source: Forrester Research, Inc.

Appendix B: 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. TEI assists technology vendors in winning, serving, and retaining customers.

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

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.

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. However, having the ability to capture that benefit has a PV that can be estimated. The flexibility component of TEI captures that value.

RISKS

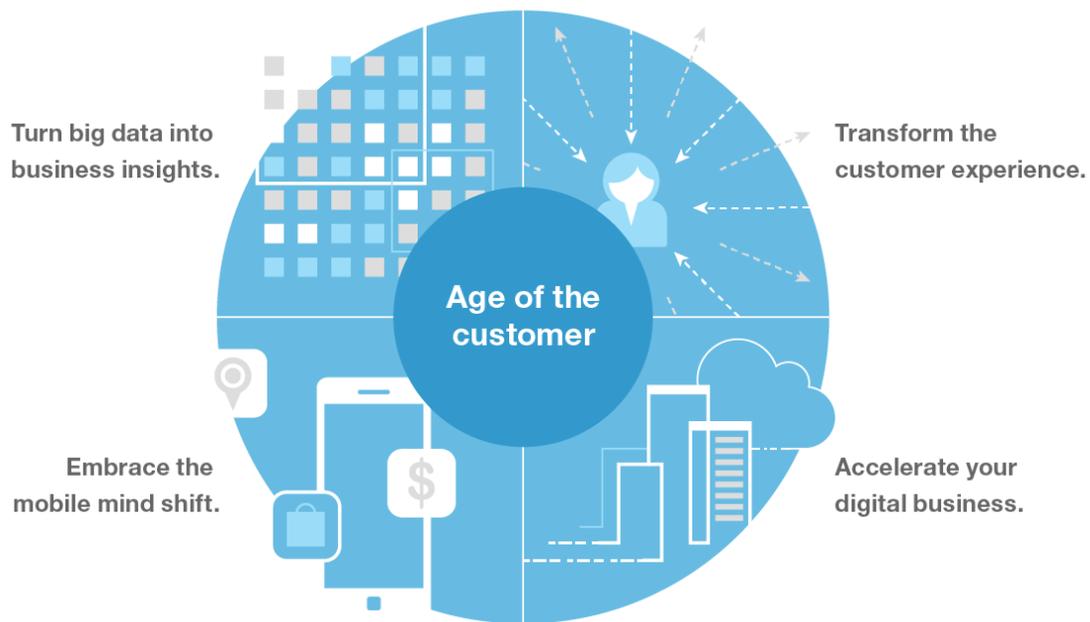
Risks measure the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections and 2) the likelihood that the estimates will be measured and tracked over time. TEI risk factors are based on a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the risk factor around each cost and benefit.

Appendix C: Forrester And The Age Of The Customer

Your technology-empowered customers now know more than you do about your products and services, pricing, and reputation. Your competitors can copy or undermine the moves you take to compete. The only way to win, serve, and retain customers is to become customer-obsessed.

A customer-obsessed enterprise focuses its strategy, energy, and budget on processes that enhance knowledge of and engagement with customers and prioritizes these over maintaining traditional competitive barriers.

CMOs and CIOs must work together to create this companywide transformation.



Forrester has a four-part blueprint for strategy in the age of the customer, including the following imperatives to help establish new competitive advantages:



Transform the customer experience to gain sustainable competitive advantage.



Accelerate your digital business with new technology strategies that fuel business growth.



Embrace the mobile mind shift by giving customers what they want, when they want it.



Turn big data into business insights through innovative analytics.

Appendix D: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Companies set their own 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 organizations 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 NPV of cash flows.

Payback period: The breakeven point for an investment. This is 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 the Framework Assumptions section) at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations are not calculated until 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.

TABLE [EXAMPLE]
Example Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3

Source Forrester Research, Inc.

Appendix E: Endnotes

¹ Source: “Measuring Mobile Apps,” Forrester Research, Inc., November 14, 2104.

² Source: “A Marketer’s Guide To The Mobile Mind Shift,” Forrester Research, Inc., December 29, 2014.

³ Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information, see the section on Risks.