The Total Economic Impact™ Of Celebrus

Cost Savings And Business Benefits
Enabled By Real-Time Data And
Decisioning

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ABOUT FORRESTER CONSULTING

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ROI: 2.44x

$15.4M sales lift
due to personalization

100% eliminated time
for data tagging

Executive Summary

Poor quality data is an increasingly challenging problem as organisations continue to add layers to their IT and marketing tech stacks, particularly with solutions that both create and consume customer data. In recent years, customer data platforms (CDPs) have aimed to address this challenge by consolidating and integrating data from multiple heterogeneous sources, thereby creating a single, trusted repository that supplies accurate customer data to both analytical and operational systems. Forrester estimates that CDPs will reach their disruptive potential in five to ten years, corresponding with a maturation of organisations' data management skills.[1]

Celebrus, owned and developed by D4t4 Solutions, provides organisations with a customer data platform that allows both structured and unstructured data to be collected and tracked across channels in real-time for analysis or decisioning. D4t4 Solutions and Dell EMC commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realise by deploying Celebrus. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Celebrus on their organisations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed two customers who have been using Celebrus for multiple years. One interviewee has been using Celebrus for nearly one year while the other interviewee has realised sustained benefits from Celebrus over a five-year deployment. Before investing in Celebrus, the interviewed customers used other data management vendors to collect and assemble user experience data across channels; however, this data was collected in batches and thus could not be used for any real-time decisioning or analytics. Using Celebrus, customers gained the ability to track and react with next-best-actions to customer behaviour in genuine real-time (less than 500 milliseconds), creating a more personalized experience for its customers.

Key Findings

Quantified benefits. Customers experienced the following risk-adjusted present value (PV) quantified benefits:

› **Sales lift from increased personalization.** Using Celebrus, customers tracked and captured first party customer data in real-time from all engagements across its digital channels. This data can be channelled to various third parties and decisioning engines to personalize outbound marketing efforts based on customers' current and most relevant needs. The resulting five-year profit gains totaled a PV of $5.4M.

› **Eliminated data tagging costs.** Instead of tagging individual units, pages, and applications within its e-banking and web portals, the customers used a single line of code across each of its customer touch points that enabled it to collect data from customer interactions. Over five years, the subsequent labour cost savings amounted to a PV of $26K.

Unquantified benefits. Customers experienced the following benefit, which is not quantified for this study:
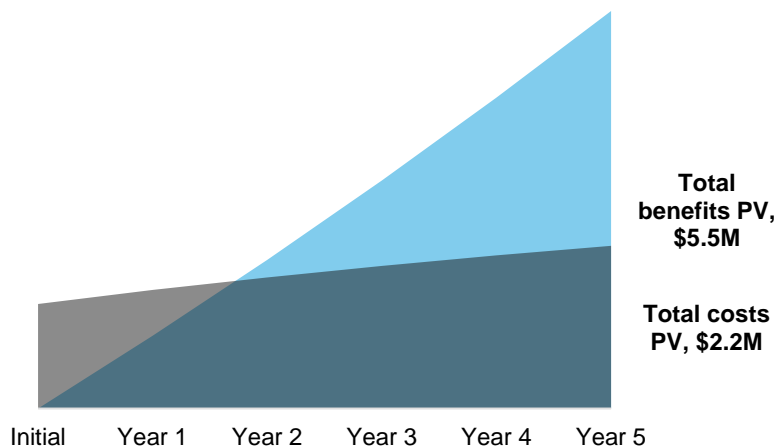
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› **Improved customer satisfaction and loyalty.** By serving 1-to-1 personalised messages to customers via e-mail and SMS, interviewees improved their digital customer experiences, which they expect will lead to increased customer stickiness and further cross-sell opportunities in future years.

Costs. Customers experienced the following risk-adjusted PV costs:

› **License and management fees**, including an upfront payment made to Celebrus covering ongoing use of the platform over a 5-year period along with a recurring annual hardware maintenance fee, totaling $2.0M.

› **Deployment costs**, including the work of implementing, integrating, configuring, and customising Celebrus for e-banking and web portals, resulting in a one-time cost of $202K.

Forrester's interviews and subsequent financial analysis found that customers experienced benefits of $5.5M over five years versus costs of $2.2M, adding up to a net present value (NPV) of $3.2M and an ROI of 2.44x.

Financial Summary
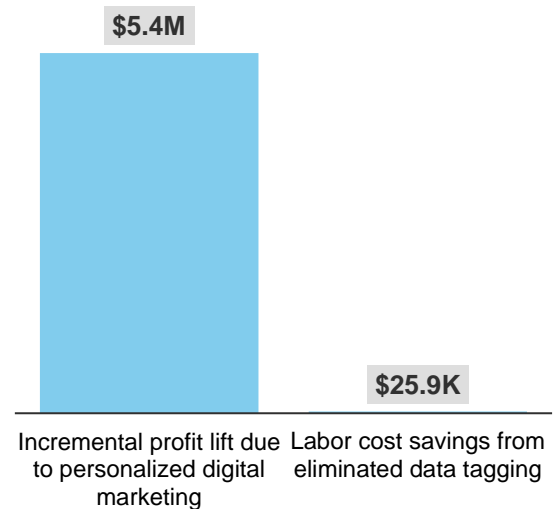
Total benefits PV, $5.5M

Total costs PV, $2.2M

Initial Year 1 Year 2 Year 3 Year 4 Year 5

Benefits (Five-Year)

$5.4M

$25.9K

Incremental profit lift due to personalized digital marketing

Labor cost savings from eliminated data tagging

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TEI Framework And Methodology

From the information provided in the interview, Forrester has constructed a Total Economic Impact™ (TEI) framework for the benefit of organisations considering implementing Celebrus.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Celebrus can have on an organisation:

DUE DILIGENCE
Interviewed D4t4 stakeholders and Forrester analysts to gather data relative to Celebrus.

CUSTOMER INTERVIEWS AND SURVEY
Interviewed two organisations using Celebrus to obtain data with respect to costs, benefits, and risks. In addition, conducted an online survey of 56 financial service organisations in the US, UK, France, Germany and Denmark to understand key goals and drivers around customer experience strategy and marketing analytics. The study was conducted in August 2018

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organisation.

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

> The TEI methodology helps companies demonstrate, justify, and realise the tangible value of IT initiatives to both senior management and other key business stakeholders.

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Market Overview

CURRENT ATTITUDES AND FEELINGS AROUND CUSTOMER EXPERIENCE STRATEGY AND MARKETING ANALYTICS

Forrester conducted an online survey of 56 organisations in the US, UK, Germany, France and Denmark to evaluate their attitudes and feelings related to the organisations' marketing goals and the role of data within these organisations. From the survey, Forrester discovered:

Data and artificial intelligence play a critical role in the marketing goals and priorities of many organisations. Surveyed organisations identified a number of key goals over the next twelve months, including improving customer experience (82%), increasing the use of data and analytics (76%), driving customer centricity (76%) and elevating the quality of data available within their organisation (75%). These and other key goals are highlighted below. These organisations identify that quality data is critical to meeting these goals, with 93% of survey respondents identifying it as important or critical. Additionally, another 84% of organisations realise that AI and Machine Learning will also play an important role in meeting these future goals.

93%
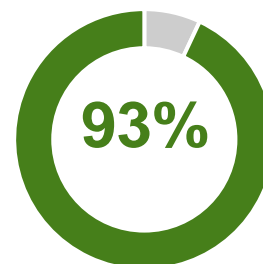
"Quality data is important or critical in my organization's future goals."

> **"Which of the following are your organization's top marketing goals over the next 12 months?"**

Improve customer experience	82%
Increase our use of data and analytics (including marketing measurement and customer insight)	77%
Drive customer centricity	77%
Elevate the quality of data available within our organization	75%
Improve the ROI/effectiveness of customer engagement model	70%

Top five shown

Base: 56 Global marketing and analytics decision makers in financial services

Source: A commissioned study conducted by Forrester Consulting on behalf of Celebrus, August 2018

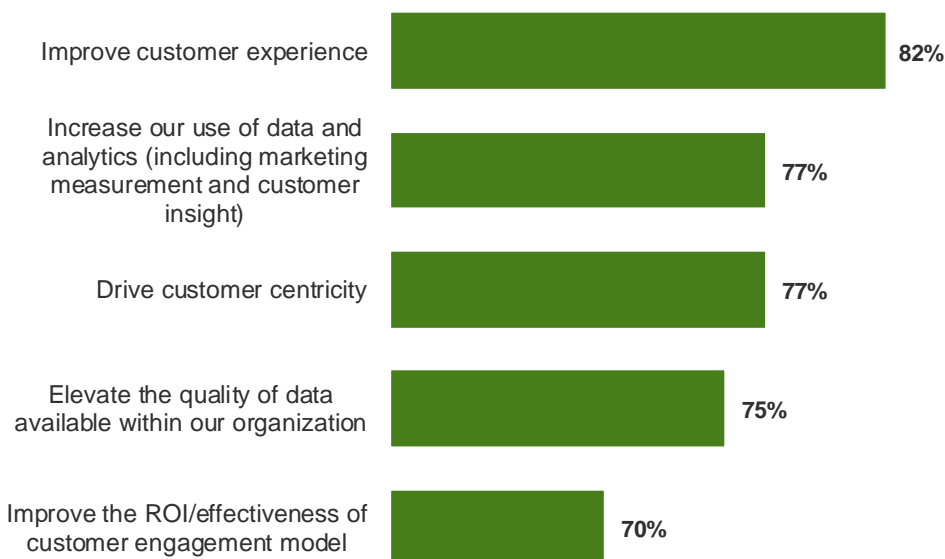> **However, there is a lack of quality and quantity of the data necessary to meet these goals, which limits the ability to extract insights and take effective action when using technology like artificial intelligence**. When asked about key challenges these organisations face around data and analytics, organisations identified that their number one struggle is the ability to get real-time data access and insights. Due to the lack of quality and quantity of data required, these organisations note their second largest challenge is that they lack a master or single view of the customer, which leads to struggles with creating personalised marketing capabilities and 1-to-1 marketing

84%

"Artificial intelligence and machine learning is important or critical in my organization's future goals."

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campaigns. Surveyed organisations also noted that the data they do have access to comes from too many sources, and it is too difficult to make sense of and use in a way that is effective. Finally, these organisations cited that they are just not as advanced as their competitors when it comes to creating actionable insights. These challenges make it difficult for these organisations to engage in certain key activities such as machine learning (85%), decisioning automation (82%), capturing and curating digital data sources (79%) and personalization of marketing campaigns (71%).

"How difficult are the following activities for you?"

■ Personalization of marketing campaigns	■ Capturing and curating digital data sources	■ Decisioning automation	■ Machine learning

Difficult and very difficult shown

Base: 56 Global marketing and analytics decision makers in financial services

Source: A commissioned study conducted by Forrester Consulting on behalf of Celebrus, August 2018
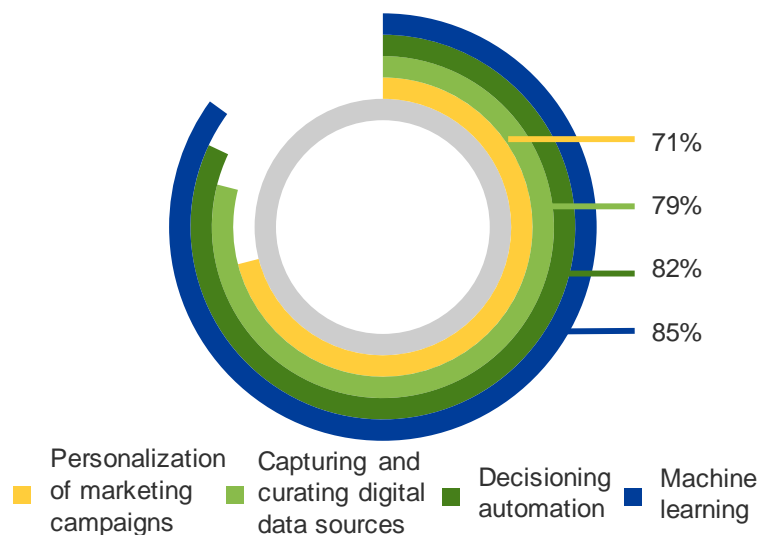
> **The struggle to extract insights and take effective actions is not a budgetary concern.** An interesting insight from the survey is that, while the majority of respondents agree that they lack the highly granular and accurate customer data required to benefit from artificial intelligence and machine learning, only half of respondents cite that they lack the budget necessary to leverage these technologies – where the organisations really struggle is with the right skill sets (61%) and the right technology (59%). And leveraging the right technology is key to improve the quality of these organisations' digital customer data – organisations found tag management applications and data management platforms do not go far enough to get the benefits needed to meet these business goals. To get the most out of customer data and analytics, organisations should focus on bringing in the right skills and technology, and ensuring their budget is spent in the right places.

> **With access to higher quality data, companies can create improved customer interactions and optimised customer engagement programs that impact individuals across the organisation.** The survey respondents agree that improving the quality of customer data for artificial intelligence and next-best-action capabilities has an impact on business benefits. Through improving

Organizations lack the following to be able to leverage artificial intelligence and machine learning:

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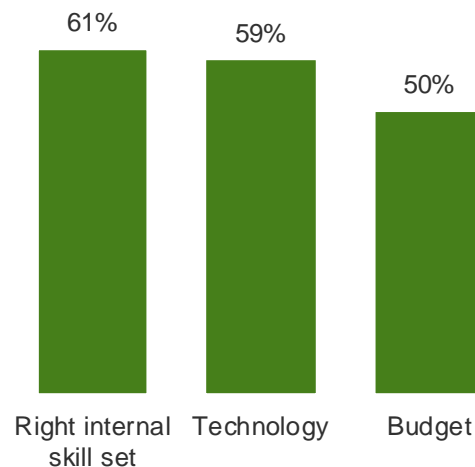
customer data for AI capabilities, respondents expect to see enhanced customer service, increased revenue and increased customer retention. These and other key benefits are highlighted below. In addition to these key business outcomes, respondents agree that the benefits of AI next-best actions driven by customer data go beyond the walls of just customer experience, marketing, and customer insights and analytics, but reach to IT, sales, and operations, for example. Through improving the organisation's access to quality data, organisations can bridge the existing gap between data and effective insights and next-best-actions, which can improve the business outcomes across line of business and IT.
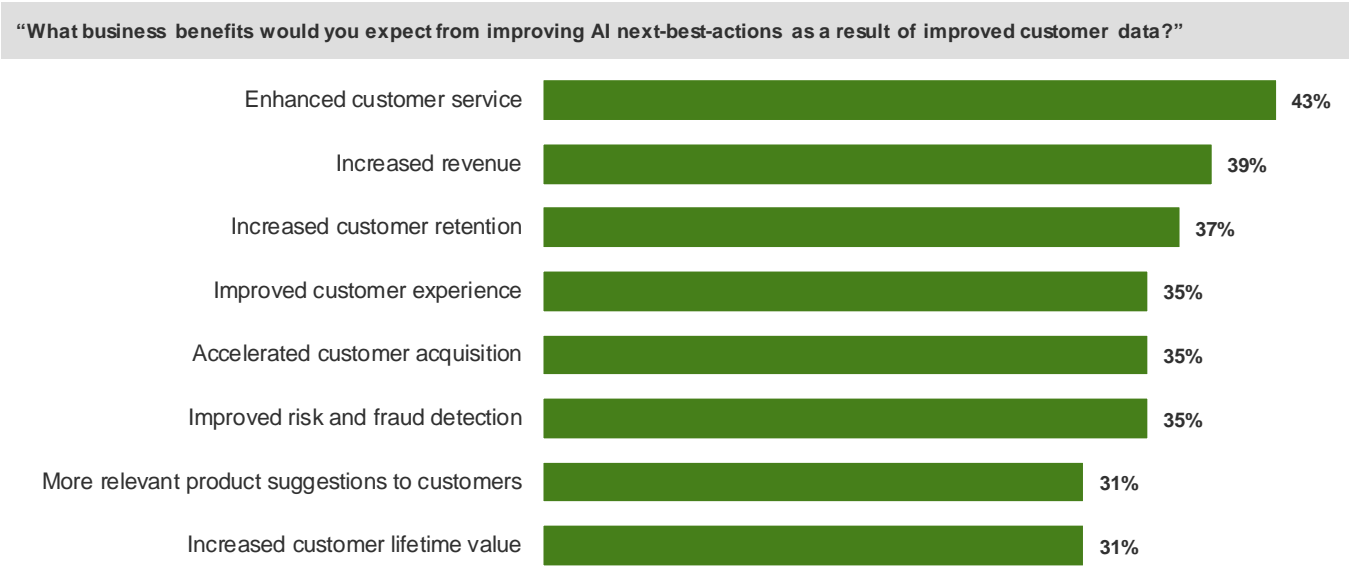
"What business benefits would you expect from improving AI next-best-actions as a result of improved customer data?"

| Benefit	Percentage
Enhanced customer service	43%
Increased revenue	39%
Increased customer retention	37%
Improved customer experience	35%
Accelerated customer acquisition	35%
Improved risk and fraud detection	35%
More relevant product suggestions to customers	31%
Increased customer lifetime value	31%

Base: 56 Global marketing and analytics decision makers in financial services
Source: A commissioned study conducted by Forrester Consulting on behalf of Celebrus, August 2018

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The Celebrus Customer Journey

BEFORE AND AFTER THE CELEBRUS INVESTMENT

Interviewed Organisations

For this study, Forrester conducted two in-depth interviews with Celebrus customers. The first customer is in the banking industry and has been using the platform for 8 months:

› Forrester conducted the interview with a senior member of their Advanced Analytics and Architecture team.

› The customer is a large retail bank headquartered in Europe. In 2017, it had annual revenues of almost $7B. Over half of its revenue comes from its Personal and Business Banking segments; however, it also has other fee-income generating lines of businesses such as Insurance and Wealth Management. The financial models included in this study are based on the customer's current e-banking and web deployments of Celebrus, which impact only the bank's Personal and Business Banking segments.

› Prior to Celebrus, this customer used another data management vendor that collected engagement-level data from various digital customer touchpoints. This data was collected and delivered in batches, meaning they could not use it to power any real-time decisioning or analytics engines.

› The interviewed customer engaged Celebrus in April 2017 and finished deploying the platform for its e-banking and web portals in December 2017. Additionally, the organisation is currently in-process of deploying Celebrus for their mobile applications, including mobile banking and payments.

Forrester also conducted an interview with a second Celebrus customer within the financial services industry who has been using Celebrus for five years:

› The interviewed organisation initially engaged with Celebrus so it could gain a greater visibility into their customer journeys at each touchpoint to inform more focused personalization.

› This organisation is currently using Celebrus at its customer touchpoints for e-banking and on its public website. The organisation is currently in the process of deploying Celebrus for its mobile applications and websites and aim to be fully deployed across mobile by 2019.

› This organisation has deployed Celebrus in over 10 regions globally and continues to expand the Celebrus deployment into new markets.

Key Challenges

The interviewed organisations shared the following issues, drivers, challenges, goals, and opportunities:

> "We've been losing a lot of our personal contact with customers given our significant branch closures over the past six years. Our touch points with customers have moved toward digital channels and because of that, we needed something that would help us reestablish our customer experience through those channels."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

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> **Customer banking habits began to change.** Over the past 6 years, the banking customer experienced a significant shift in the way they engaged with their bank, with a decreasing number of branch visits and more banking activity taking place over digital channels. This meant having to relearn how to best engage with customers and respond to their changing needs. To do this, the customer required an architecture that could allow it to learn about its customers through engagement-level data and quickly analyze and leverage that data to perform next-best actions that would provide a personalised experience. The financial services organisation also experienced this shift and viewed increasingly digital customer interaction as an opportunity to gain a window into their customers' journey.

> **Existing approaches were product focused vs. customer focused.** In response to changing customer behaviour, the banking organisation released several digital solutions so that they could engage with customers on their preferred channels; however, the organisation still lacked the granularity of data required to understand customer interactions and to create a series of next-best-actions in response to them. As the Manager of Advanced Analytics and Architecture put it: "Even though we do have some good digital solutions such as mobile banking and mobile payments, I still felt we were lacking in our ability to truly understand the needs of the customer."

> **Existing solutions could not deliver in time to serve customers' needs when they needed to be served.** Before using Celebrus, the banking organisation relied on an external data management vendor to collect digital customer engagement data. This platform would record and compile any customer actions for the day and release the data all at once the following day. While this type of data sufficed for retroactive analysis purposes, it did not allow them to react immediately to specific customer actions at the time they were made.

Selecting A Partner

Prior to engaging Celebrus, the interviewed organisations performed extensive RFP and business case processes evaluating multiple vendors. This process lasted several months and involved researching and shortlisting a pool of vendors, attending numerous live demos and workshops, and testing the features and functionality offered by each vendor.

After thoroughly exploring each option, the interviewed organisations articulated the following reason for ultimately choosing to engage Celebrus:

> **Celebrus provided the resources and know-how to facilitate a complex and sensitive deployment process**. As highly-regulated financial services organisations, customers needed a partner who could not only understand the unique challenges of the industry, but who could also provide the resources needed to fully implement and integrate the platform while maintaining strict compliance with internal controls and external regulations. For the interviewed banking organisation, this required creating an entirely new custom architecture with built-in QA controls that would satisfy various internal requirements, including those set by the bank's security and risk stakeholders.

> "Celebrus gives us an understanding of the customer journey. We can track all customer interactions to personalize our interactions with the customer. This gives us the ability, across all channels, to come back with relevant communications based on what the customer is doing."
>
> *Manager, Financial Services Organization*

> "Celebrus has had some very good consultants to help us with whatever issues we had, including facilitating training sessions, convincing our business stakeholders, and putting our IT team at ease. It really reduced our implementation risk."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

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Key Results

Forrester's interviews revealed that key results from the Celebrus investment include:

› **Customers gained the ability to personalize digital customer experience at the individual level.** With its current e-banking and web deployments of Celebrus, one organisation gained the ability to execute tailored e-mail and mobile communications to individual customers at the point of interaction, which led to higher response and engagement rates and ultimately increased sales through those channels. Another organisation also cited better personalization as a driver for increased email open rates and click-through rates in some key markets in which Celebrus is deployed. While this organisation was not able disclose the exact uplift numbers, they noted that the continued expansion of Celebrus into additional markets was a testament to their success against these metrics.

› **Implementing Celebrus opened the doors for other artificial intelligence, machine learning, and programmatic technology.** With automation becoming an increasingly relevant theme, particularly in financial services, the interviewed organisations put themselves in a position where they can readily adopt any number of emerging technology platforms that rely on real-time data for decisioning purposes. They are also considering future applications of Celebrus including use cases such as fraud monitoring, transaction-related decisioning, and other forms of automated outbound marketing.

› **Data tagging became a non-issue.** By using Celebrus, organisations can use a single line of code across each touchpoint to collect all data from any applications or units featured within those touch points. Traditionally, this would require an operations team to continuously manage multiple tags for each application and update or retag those applications with any changes that occurred. By eliminating the need to manually tag data, both interviewed organisations were able to free up time for their operations staff to focus on more valuable bottom-line impacting activities.

> "We're exploring different possibilities with Celebrus such as the ability to stitch into some other solutions within our adtech stack, so we can trace how customers are engaging with our different marketing campaigns."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

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Analysis Of Benefits

QUANTIFIED BENEFIT DATA

	Total Benefits							
REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL	PRESENT VALUE
Atr	Incremental profit lift due to personalised digital marketing	$1,090,449	$1,254,017	$1,442,119	$1,658,437	$1,907,203	$7,352,225	$5,428,138
Btr	Labour cost savings from eliminated data tagging	$6,840	$6,840	$6,840	$6,840	$6,840	$34,200	$25,929
	Total benefits (risk-adjusted)	$1,097,289	$1,260,857	$1,448,959	$1,665,277	$1,914,043	$7,386,425	$5,454,067

Incremental Profit Lift Due To Personalised Digital Marketing

As consumer expectations continue to increase in retail financial services, new players, such as challenger banks and fintech startups, have used technology to their advantage to meet these needs. However, for more traditional retail banks with extensive branch footprints, the challenge of quickly adapting to this new environment has proven much more difficult. For the interviewed banking organisation Celebrus represented a way of completing its understanding of the customer journey by bringing together data from multiple disparate touchpoints, both offline and online, into one cohesive story of the customer. The bank was able to use this data to inform next-best actions which were used to personalize the digital customer experience. Some tactical ways that they achieved this include:

› **Targeted online banking**. Using Celebrus, the interviewed organisation produced accurate individual customer profiles that accounted for both offline activity and historical online activity. Furthermore, these customers could be served messages in real-time during their online banking sessions that corresponded to current lifestyle needs, from customised payments solutions to promotional lending offers.

› **E-mail and SMS follow-ups**. Instead of blasting generic follow-up email and text messages to all of its customers at the same time, the organisation could follow-up with individual customers immediately after their online banking sessions ended with messages and offers that reflected their most recent banking activity and lifestyle changes.

By personalizing its digital marketing and communications, the interviewed organisations increased the conversion rate of their online-banking customers. The subsequent lift in profit is based on the following assumptions:

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over five years, the interviewed organization expects risk-adjusted total benefits to be a PV of more than $5.4 million.

"For us, the big benefit of Celebrus is that you don't have to know what you're looking for. You put a tag on and learn from what comes in. First, it was understanding more about our customer interactions so we could ensure that the messages we're dropping to that customer are relevant. Then we can use that data to inform our future decisions."

Manager, Financial Services Organization

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› Annual revenues coming from the banking organisation's Personal and Business Banking Segments grow at a CAGR of 5.8% between year 1 and year 5. This assumption is based on the actual historical growth of these segments from 2013 through 2017.

› The sales lift coming from personalised digital marketing (A4 in the table below) increases by 15% each year from year 1 through year 5. Forrester conservatively applied this assumption based on the banking organisation's future deployments of Celebrus that are currently in-process, such as mobile banking, and the increased application of Celebrus data for additional business use-cases that are anticipated over the next five years. Furthermore, as Celebrus continues to track customer interactions and accumulate data over time, decisioning models that depend on this data will become increasingly effective at achieving their intended goals.

› The percentage of Personal and Business Banking customers who are also e-banking customers is used as a proxy for the market size that is impacted by Celebrus. Forrester assumes that this percentage remains constant over the 5-year investment period.

The benefits that other organisations experience with Celebrus may vary depending on factors such as:

› **Industry and organisation-specific characteristics**. The uplift in profit attributable to Celebrus will depend on the operating margins of the products or services that are leveraging Celebrus data, which will vary significantly based on industry. The size and growth of these businesses will also impact the magnitude of uplift achieved each year.

› **Number and types of Celebrus deployments**. The banking organisation has currently deployed Celebrus for its e-banking and web portals with the goal of improving its understanding of the customer and personalizing the online banking experience. However, other organisations may choose to leverage Celebrus data for use-cases such as fraud monitoring and detection or transaction approvals. Each use case will apply Celebrus data in a different way and have a unique impact on conversions and sales.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a five-year risk-adjusted total PV of $5.4M.

"We define certain goals internally, such as a customer's click, and tie those goals to specific actions. Once a goal is achieved, it triggers our decisioning engines through Celebrus data."

Manager, Advanced Analytics and Architecture, Banking Industry

Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

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Incremental Profit Lift Due To Personalised Digital Marketing

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
A1	Annual revenue of Personal and Business Banking	5.8% CAGR	$3,576,247,200	$3,782,349,701	$4,000,330,083	$4,230,872,880	$4,474,702,076
A2	Percentage sales lift due to personalised digital marketing		0.093%	0.101%	0.110%	0.119%	0.130%
A3	Percentage of Personal and Business Banking customers who leverage e-banking		68.7%	68.7%	68.7%	68.7%	68.7%
A4	Sales lift from personalised digital marketing	A1*A2* A3	$2,277,450	$2,619,068	$3,011,928	$3,463,717	$3,983,274
A5	Operating margin of Personal and Business Banking		50.4%	50.4%	50.4%	50.4%	50.4%
At	Incremental profit lift due to personalised digital marketing	A4*A5	$1,147,841	$1,320,018	$1,518,020	$1,745,723	$2,007,582
	Risk adjustment	↓5%					
Atr	Incremental profit lift due to personalised digital marketing (risk-adjusted)		$1,090,449	$1,254,017	$1,442,119	$1,658,437	$1,907,203

Labour Cost Savings From Eliminated Data Tagging

Most standard digital data collection tools and techniques require the activity of tagging different units or blocks of content across digital touchpoints to enable third-parties to gather, track, and analyze data from customer interactions with that content. For organisations with many web- or mobile-based applications, tagging can be both difficult to manage, and done poorly, a cause of redundant, untimely, or even inaccurate data. Tagging also increases the complexity of digital properties resulting in increased page load times, which can adversely effect the customer experience and visitors propensity to buy.

Prior to using Celebrus, the interviewed organisations also grappled with the challenges of tagging for their digital applications. While the banking organisation did use a tag management system to help streamline some of the operational tasks involved with organizing and updating tags, it still had to perform the core activity of defining new rules for these tags each time a change was made to one of its applications. Following the deployment of Celebrus, they managed to replace the tagging process with the insertion of a single line of code to its e-banking and web

> "When you look at the old way our staff used to manually tag data, Celebrus certainly has reduced the total effort required in a big way."
>
> *Manager, Financial Services Organization*

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portals. Instead of collecting specific, pre-defined pieces of information through tags, this line of code was used to collect all customer experience and behavioural data occurring across each of the bank's e-banking and web portals. Additionally, due to the pre-configured integrations which Celebrus provides with leading enterprise applications, this first party customer data was fed into their decisioning solution in real-time to provide enhanced personalization and improved customer experience, as noted in the previous benefit category.

For the labour cost savings benefits from eliminated data tagging, Forrester assumes that:

> The fully-burdened hourly salary of each data analyst required for data tagging is $45 per hour.

For other organisations, the labour cost savings experienced from eliminating data tagging may differ based on:

> **Number and types of Celebrus deployments**. The more Celebrus is deployed throughout an organisation's digital ecosystem, the greater potential cost-savings from eliminating the need for tagging. Additionally, cost savings will be disproportionately higher for applications with a large number of unique content pieces, each requiring separate tags.

> **Existing tagging processes**. Organisations that were previously performing all the activities involved in tagging manually will see greater cost savings benefits that those already leveraging other tag management systems prior to using Celebrus.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a five-year risk-adjusted total PV of $7K.

> "Everything that our e-banking platform offers -- accounts, account features, transactional features, calculational features, and so on -- is already tagged with Celebrus. The same goes with all of our web communications. Celebrus delivers every single click and more to our big data storage on a handled platform that then delivers what we want to our real-time decision engine."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

Labour Cost Savings From Eliminated Data Tagging							
REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
B1	Number of FTEs required for data tagging before using Celebrus		2	2	2	2	2
B2	Number of weeks required for tagging before using Celebrus		2	2	2	2	2
B3	Hours spent per FTE per week for data tagging before using Celebrus		40	40	40	40	40
B4	Data analyst hourly salary (fully-burdened)		$45	$45	$45	$45	$45
Bt	Labour cost savings from eliminated data tagging	B1*B2*B3*B4	$7,200	$7,200	$7,200	$7,200	$7,200
	Risk adjustment	↓5%					
Btr	Labour cost savings from eliminated data tagging (risk-adjusted)		$6,840	$6,840	$6,840	$6,840	$6,840

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Unquantified Benefits

The interviewed organisations also cited the following benefits, which are not quantified for this study:

› **Improved customer satisfaction and loyalty**. By tracking customer experience across its e-banking and web portals in real-time, the banking customer was better able to understand what customers were looking for and match them to the right products or services. Consequently, instead of receiving generic promotions, offers, or advertisements, customers who leveraged e-banking and web portals were targeted with relevant messages, leading to deeper engagement with the organisations.

› **Decisioning capabilities in less-budgeted markets**. After expanding the Celebrus deployment into smaller regions, the financial services interviewee was able to leverage the data collected from Celebrus in conjunction with existing applications to replicate some of the personalization capabilities typically provided by vendors of expensive decisioning platforms. These incremental capabilities allowed the organisation to experience some of the benefits of expensive decisioning platforms without the upfront investment.

Flexibility

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

› **Expanding to additional channels or use-cases.** The interviewed organisations have currently deployed Celebrus across use cases such as e-banking, web portals, and mobile banking. However, in the future, both interviewees cited exploring usage of Celebrus data in areas such as fraud prevention, product optimization, or the measurement of marketing campaigns. Since Celebrus captures all behavioural and experience data for each customer interaction, the required data for future use cases will be already be captured from previous use cases. According to the interviewee from the banking organisation, some internal stakeholders have already begun to express interest in using Celebrus to help with fraud monitoring and transaction-related decisioning.

› **Reducing third-party vendor expenses.** Many third-party solutions, including marketing clouds, data management platforms, and tag management applications, collect data in one form or another. However, typically these solutions will collect data through specific customer-facing channels such as mobile or web, or business siloes such as IT, customer experience, or marketing, without any communication with one another. This often results in significant data overlap in addition to hefty vendor expenses. As organisations continue to deploy Celebrus throughout the company, there may be an opportunity to use Celebrus as the sole data provider for existing and new business applications, thereby reducing the need for other avenues for data collection.

> "Celebrus gives us the ability to make our information much more relevant and the primary benefit of that is that it enables us to achieve more sales. However, it also lets us better understand and assist with our customers' goals, and in turn, our customers become more loyal to our brand."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

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

> "We now receive two sets of very similar information, one in real-time with Celebrus and one in batches from another data platform. It's perfectly reasonable to say that we could close our other platform."
>
> *Manager, Advanced Analytics and Architecture, Banking Industry*

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Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

Analysis Of Costs

QUANTIFIED COST DATA

Total Costs

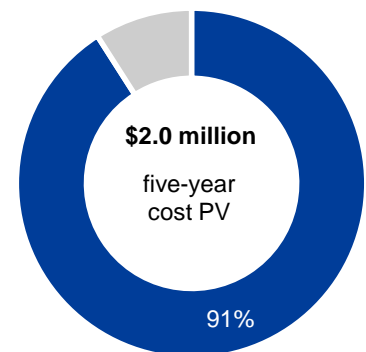| REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL	PRESENT VALUE
Dtr	Celebrus license and mgmt. fees	$1,232,819	$210,400	$210,400	$210,400	$210,400	$210,400	$2,284,819	$2,030,401
Etr	Celebrus deployment costs	$201,984	$0	$0	$0	$0	$0	$201,984	$201,984
	Total costs (risk-adjusted)	$1,444,903	$210,400	$210,400	$210,400	$210,400	$210,400	$2,496,902	$2,242,484

> The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over five years, the interviewed organisation expects risk-adjusted total costs to be a PV of more than $2.2 million.

Celebrus License And Management Fees

Customers paid a combination of upfront and recurring fees to Celebrus to support continued use the platform, as per below:

› **Upfront license fees**, a one-time charge which includes the cost of additional Celebrus hardware and software covering usage of Celebrus over an indefinite period.

› **Ongoing management fees** incurred at a fixed rate once per year to maintain Celebrus hardware.

Celebrus license and management fees, represented in the table below, were confirmed by both interviewees and Celebrus and thus no assumptions were made in the model. Additionally, Forrester made no risk adjustment to the fees as these were the actual fees charged. The combined Celebrus license and management fees yielded a five-year PV of $2.0M.

$2.0 million

five-year
cost PV

91%

Celebrus license and management fees: **91%** of total costs

Celebrus License And Management Fees

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
C1	Celebrus license fees		1,232,819					
C2	Ongoing management fees			$210,400	$210,400	$210,400	$210,400	$210,400
Ct	Celebrus license and management fees	C1+C2	$1,232,819	$210,400	$210,400	$210,400	$210,400	$210,400
	Risk adjustment	0%						
Ctr	Celebrus license and management fees (risk-adjusted)		$1,232,819	$210,400	$210,400	$210,400	$210,400	$210,400

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Celebrus Deployment Costs

To fully deploy Celebrus, the interviewed organisations worked with D4t4 consultants who helped implement, integrate, configure, and customise the platform across the bank's e-banking and web portals, as detailed below:

› **Celebrus hardware and software implementation**: In addition to purchasing additional Celebrus hardware and software, interviewed organisations also needed to engage D4t4 consultants to integrate Celebrus with their internal decisioning and machine learning systems so that any inbound data could be leveraged for real-time analysis and decision making.

› **Compliance and internal controls**: As regulated financial institutions, customers needed to ensure that they maintained strict data compliance. To achieve this, the organisations worked closely with D4t4 consultants who helped build a new, custom architecture with QA controls to filter for any potentially non-compliant data. These consultants also worked with the project sponsor to help attain buy-in for the project and align internal stakeholders and business leaders around goals and required next steps.

› **Testing prior to production**: As part of the buy-in process, internal stakeholders wanted to test the functionality and features of Celebrus prior to going live in a production environment. Testing was an iterative process as the project passed through various internal gates such as security and risk. D4t4 consultants were engaged throughout this period to help execute the tests and customise the platform architecture in response to any new changes or requirements.

Celebrus deployment costs, represented in the table below, were confirmed by both interviewees and Celebrus and thus no assumptions were made in the model. Additionally, Forrester made no risk adjustment to the fees as these were the actual fees charged. The combined Celebrus deployment costs yielded a five-year PV of $202K.

$201,984

five-year
cost PV

9%
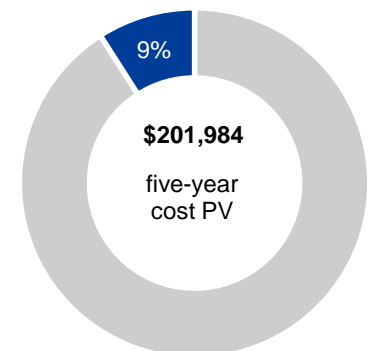
Celebrus deployment costs: **9%** of total costs

Celebrus Deployment Costs								
REF.	**METRIC**	**CALC.**	**INITIAL**	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Dt	Celebrus deployment costs		$201,984	$0	$0	$0	$0	$0
	Risk adjustment	↑0%						
Dtr	Celebrus deployment costs (risk-adjusted)		$201,984	$0	$0	$0	$0	$0

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Financial Summary

CONSOLIDATED FIVE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)

- Total costs
- Total benefits
- Cumulative net benefits

Cash flows
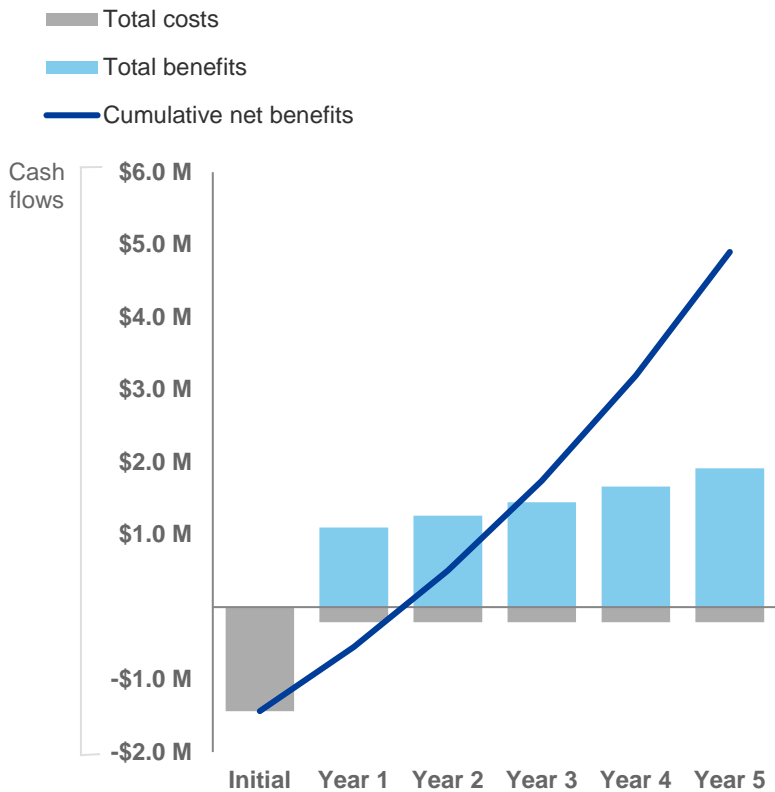
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the interviewed organisation's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL	PRESENT VALUE
Total costs	($1,434,803)	($210,400)	($210,400)	($210,400)	($210,400)	($210,400)	($2,486,803)	($2,232,385)
Total benefits	$0	$1,097,289	$1,260,857	$1,448,959	$1,665,277	$1,914,043	$7,386,425	$5,454,067
Net benefits	($1,434,803)	$886,889	$1,050,457	$1,238,559	$1,454,877	$1,703,643	$4,899,622	$3,221,682
ROI								144%

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Celebrus: Overview

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

Celebrus (celebrus.d4t4solutions.com) is the Customer Data Platform from D4t4 Solutions Plc. Celebrus captures the market's most complete picture of customer behaviour and experience, creating events and profiles in real-time for driving 1-to-1 personalisation, streaming analytics and AI and ML initiatives. In doing so, Celebrus solves the problem of fragmented customer data that challenges businesses seeking to better engage with their customers; Celebrus unifies customer data from across channels and touchpoints, orchestrating that data to power a multitude of business use cases in customer experience, acquisition, retention, service, forecasting, risk and compliance.

Celebrus is quick and easy to deploy and connects to industry-standard data applications for customer insight and engagement. Celebrus also gives clients complete control by enabling best-in-class privacy management and flexible options for hosting data on-premise or securely in the cloud.

Celebrus is used by global businesses in banking, insurance, retail, travel, automotive and telco industries and also collaborates with leading industry partners to drive rapid transformation in customer engagement programmes.

D4t4 Solutions (www.d4t4solutions.com) is "all about the data," providing comprehensive products and services that drive value from clients' data assets. D4t4 Solutions was established in 1985 and is listed on the AIM market of the London Stock Exchange (stock code: D4T4).

D4t4 works with Dell EMC across its solutions portfolio in the provision of performant infrastructure with flexible deployment options. These include appliance-based solutions that scale-up and scale-out as client needs evolve, ensuring optimum performance and elastic storage capacity. All joint solutions can be managed in the cloud or on-premise with a remote managed service.

Dell EMC (www.dellemc.com) is a member of the Dell Technologies family of businesses and serves a key role in providing the essential infrastructure for organisations to build their digital future, transform IT and protect their information. Dell EMC provides enterprises with trusted hybrid cloud and big-data solutions, built upon a modern data centre infrastructure that incorporates industry-leading converged infrastructure, servers, storage and cybersecurity technologies.

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Appendix A: Total Economic Impact

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

Total Economic Impact Approach

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

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.
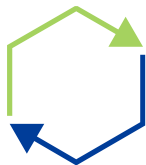
Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

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

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

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.

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.

Return on investment (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

Discount rate

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

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.

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Appendix B: Endnotes

[1] Source: "The Top Emerging Technologies For B2B Marketers," Forrester Research, Inc., April 6, 2017.

Appendix C: Additional Assumptions

- The original benefits reported by organizations were not in United States Dollars. For this study, Forrester converted these figures to USD at a fixed conversion rate of 0.1446, which was the conversion rate on the date of contract signing.

- The original charges that D4t4 billed to customers were in British Pound Sterling (GBP). Forrester converted these figures to USD at a fixed conversion rate of 1.2624 GBP/USD, which was the conversion rate on the date of contract signing.

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