

FORRESTER®

# The Total Economic Impact™ Of IBM Cognos Analytics

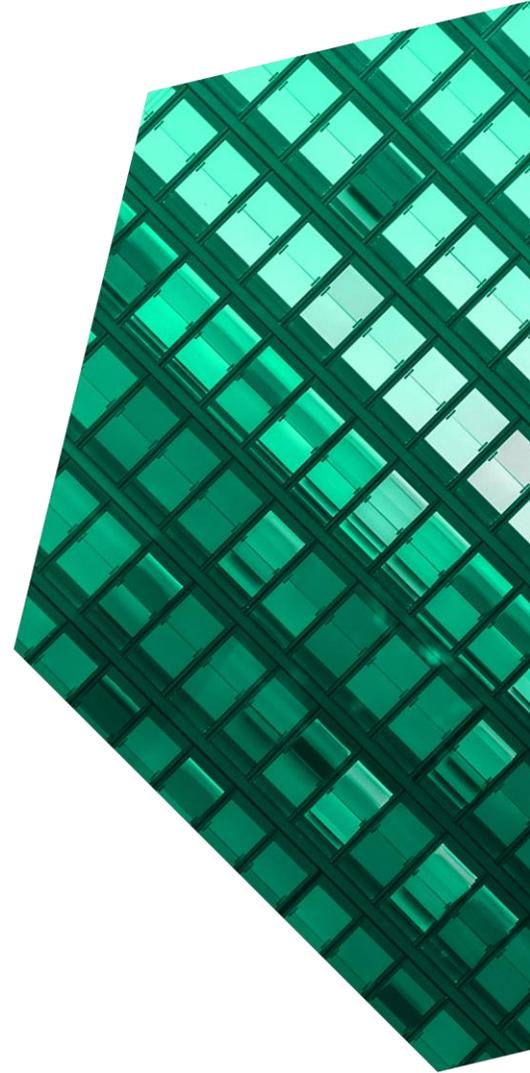
Cost Savings And Business Benefits  
Enabled By Cognos Analytics

December 2020

## Table Of Contents

Consulting Team: David Park

<b>Executive Summary</b> .....	<b>1</b>
<b>The IBM Cognos Analytics Customer Journey</b> ....	<b>6</b>
Key Challenges .....	6
Composite Organization .....	7
<b>Analysis Of Benefits</b> .....	<b>8</b>
Optimized staffing and inventory management.....	8
Incremental gross profit uplift.....	10
Self-service reporting.....	11
Flexibility .....	12
<b>Analysis Of Costs</b> .....	<b>13</b>
IBM Licensing and professional services.....	13
Onboarding and migration .....	14
Report development .....	15
<b>Financial Summary</b> .....	<b>17</b>
<b>Appendix A: Total Economic Impact</b> .....	<b>18</b>



### ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit [forrester.com/consulting](https://forrester.com/consulting).

© 2020, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on the best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies.

## Executive Summary

Data management is a key challenge for today's organizations that are seeking digital transformation. And as such, the reasons for this challenge are consistent across organizations: Data is often contained in organizational siloes and delivered in batches rather than in real time. This makes it difficult to mine, manipulate, and analyze. While several business intelligence solutions help to facilitate data consumption, few solutions can provide the governance capabilities required to create a data culture that allows data to be seamlessly accessed by the right people at the right time and place.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying [Cognos Analytics](#). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Cognos Analytics on their organizations. Cognos Analytics is an enterprise-class business intelligence suite of solutions that provides reporting, analytics, scorecarding, and monitoring capabilities across use cases for an organization's knowledge workers and frontline workers.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with experience using Cognos Analytics. For the purposes of this study, Forrester aggregated the experiences of the interviewed customers and combined the results into a single [composite organization](#).

Prior to using Cognos Analytics, customers had been leveraging legacy reporting systems or spreadsheets for the production and consumption of everything from line-of-business dashboards to sales performance reports. However, as organizations continued to grow in size and complexity, these methods failed to provide the speed, transparency, and governance needed to support an increasingly cross-functional enterprise. After the investment in Cognos Analytics, customers were able to align and empower both frontline and knowledge workers under a single, centralized business intelligence and analytics platform.

### KEY STATISTICS



Return on investment (ROI)  
**204%**



Net present value (NPV)  
**\$4.3M**

### KEY FINDINGS

**Quantified benefits.** Risk-adjusted present value (PV) quantified benefits include:



Increased staffing efficiency  
**10%**

- **Optimized frontline operations, including increased staffing efficiency and reduced inventory shrinkage.** Real-time reporting through Cognos Analytics gave frontline managers the data they needed to discern how many employees they would need at any given moment to meet customer demand, thereby allowing these managers to staff their branches with 10% more efficiency. Frontline managers also had better insight into their inventory levels and were able to reduce annual inventory shrinkage by up to 80%. Over three years, these

operational benefits accumulated a present value of \$3.5M.



Sales uplift

0.5%

- Increased topline revenue.** With improved sales benchmarking and reporting, organizations can set more accurate sales targets, monitor and measure the performance of individual associates, and develop action plans or incentive structures around specific levels of performance. This increased visibility resulted in a sales uplift equal to 0.5% of the organization’s total gross revenues. From a subsequent gross profit perspective, the composite organization experienced present value net cash flows of \$2.1M.



Streamlined reporting

93%

- Self-service reporting and analytics.** Knowledge workers across departments and functions could access Cognos Analytics on a self-serve basis instead of requesting reports from an analyst. For each report generated through self-service, organizations saved 1 hour of time, on average, while also enabling more rapid and accurate decision-making. Benefits from self-service reporting amounted to a three-year present value of \$744K.

**Unquantified benefits.** Benefits that are not quantified for this study include:

- Democratization of data.** Using legacy systems, the ability to access and manipulate data to gather insights was typically reserved to specific roles, such as business analysts, as this required some knowledge of the platform as well as experience in analysis and visualization. With IBM Cognos Analytics, and features such as natural language processing (NLP), the ability to pull specific data points and create visualizations from them was expanded to all users with minimum training required.
- Faster time-to-insight and decision-making.** Because organizations could give users self-service access to Cognos Analytics, users at all levels could consume data and execute reports as-needed without waiting for batch reporting or requesting custom reports from different departments. These users could then leverage any insights from the data to expedite the time-to-execute on business decisions.
- Consolidation of point solutions.** By deploying Cognos Analytics across the enterprise, organizations could replace any number of existing legacy business intelligence and analytics solutions with redundant functionality such as dashboarding and visualization or reporting tools. Benefits would include saving on the costs of any on-premises software, hardware, maintenance, and administration costs.

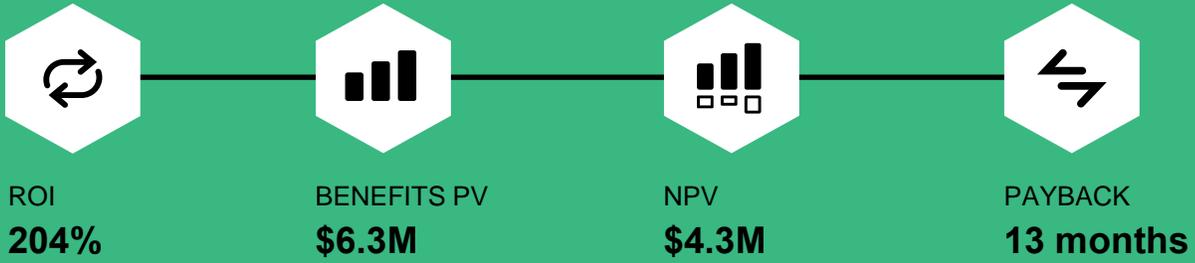
**Costs.** Risk-adjusted PV costs include:

- Licensing and professional services.** Fees paid to IBM include annual software licensing and professional services for deployment. Organizations incurred annual IBM fees to cover unlimited user software-as-a-service (SaaS) licensing for Cognos Analytics. Additionally, several organizations leveraged IBM or other third-party professional services to help deploy Cognos Analytics, facilitate any migration (from legacy systems), and provide onboarding and

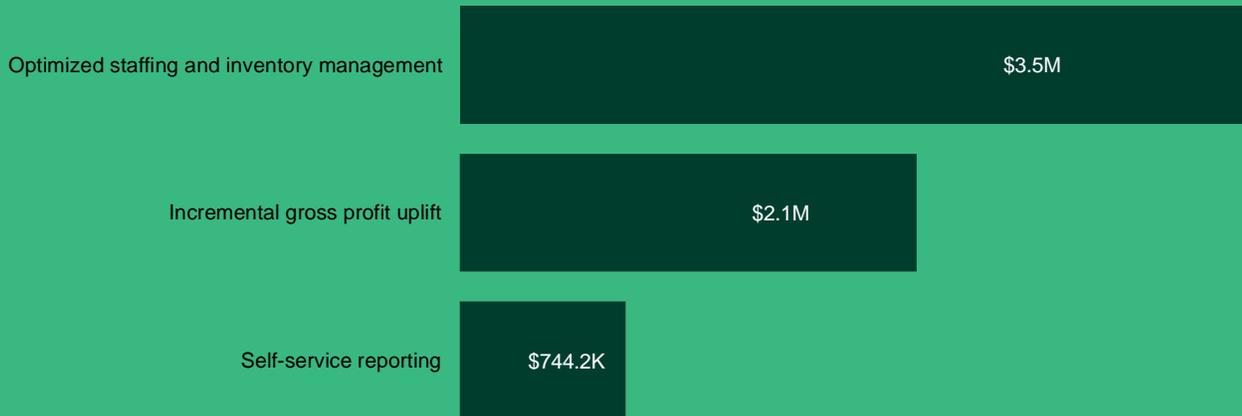
change management services. Over three years, these fees totaled a present value of \$997K.

- **Onboarding and migration.** Onboarding and migration took place over two distinct phases. First, organizations worked with either IBM or third-party systems integrators to implement Cognos Analytics and connect it to the organization's various data sources. After the initial implementation, internal resources worked over the span of six months to migrate legacy data files into Cognos Analytics. Over three years, the investment in completing the onboarding and migration process resulted in a present value of \$1M.
- **Report development.** While the vast majority of Cognos Analytics users were those consuming reports and data, organizations still needed to dedicate a number of people to building and modifying the source models. The cost of these resources totaled a three-year present value of \$56K.

The customer interviews and financial analysis found that a composite organization experiences benefits of \$6.3M over three years versus costs of \$2.1M, adding up to a net present value (NPV) of \$4.3M and an ROI of 204%.



### Benefits (Three-Year)



The above benefits of Cognos Analytics are applied to both frontline workers and knowledge workers across the enterprise.

## TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Cognos Analytics.

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 the Cognos Analytics can have on an organization.

### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM 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 the Cognos Analytics.

IBM 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 provided the customer names for the interviews but did not participate in the interviews.



### DUE DILIGENCE

Interviewed IBM stakeholders and Forrester analysts to gather data relative to the Cognos Analytics.



### CUSTOMER INTERVIEWS

Interviewed four decision-makers at organizations using the Cognos Analytics to obtain data with respect to costs, benefits, and risks.



### COMPOSITE ORGANIZATION

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



### FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.



### CASE STUDY

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

# The IBM Cognos Analytics Customer Journey

■ Drivers leading to the Cognos Analytics investment

Interviewed Organizations			
Revenue/budget	Industry	Deployment model	Interviewee
\$100M to \$500M	Nonprofit/research	SaaS	Business analyst
\$500M to \$1B	Retail	SaaS	Managing director
\$1B to \$5B	Manufacturing	SaaS	Technical development manager
\$5B to \$10B	Government	On-premises	Director of data and analytics

## KEY CHALLENGES

Prior to engaging IBM for Cognos Analytics, organizations struggled to make data an integral part of their internal and customer-facing operations, even as they continued to embark on their digital transformation journeys.

The interviewed organizations struggled with common challenges, including:

- **Inflexible legacy solutions.** Organizations typically used a combination of point solutions, such as spreadsheets and basic visualization tools, to pull data and package it into insights. However, these solutions were often distinct, non-integrated, and required significant overhead to properly leverage. Consequently, even seemingly simple and repeatable tasks such as producing monthly or quarterly reports took, on average, over 1 hour to execute when including the time needed to package, review, and deliver the data and insights.
- **Obsolete data and insights.** Even when data was made easy to consume and visually appealing, it would often be obsolete by the time it was delivered. This is because organizations often compiled data in batch reports, such as a monthly sales report. As a result, frontline workers had little visibility into their performance

relative to their targets, and managers did not have the insights needed to accurately forecast performance and create action plans.

**“A lot of our tools were built in-house and relied on legacy spreadsheets that took half an hour to open because they were linked to other spreadsheets. We got rid of all those dependencies and now everything is on Cognos Analytics.”**

*Technical development manager,  
manufacturing*

- **Lack of a data-driven culture.** Without real-time data driving the organization, preparing for the future came second to reconciling and making sense of what happened in the past. For example, without knowing day-to-day customer foot traffic in branch locations, managers would struggle to optimize their staffing and inventory levels. Then, by the time branch performance data came back to corporate departments such as human resources, compensation and bonus plans would be created based on historical data,

rather than on the latest figures, resulting in inaccurate targeting and forecasting.

**“Before, there was no way to set, monitor, and drive targets. Now, if we see an associate lagging their targets, we can focus on retraining and performance improvement.”**

*Managing director, retail*

#### Key assumptions

- **Retail organization**
- **\$900M USD revenue**
- **1,200 users**
- **Enterprise license**
- **SaaS deployment**

### COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

- Retail organization that operates across 30 retail branches in North America and Western Europe with \$900 million USD in gross annual revenues.
- One thousand two hundred active Cognos Analytics users.
- The Enterprise version of Cognos Analytics Version 11 is leveraged as a SaaS and web-based product deployed on IBM Cloud.

# Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Optimized staffing and inventory management	\$620,400	\$1,263,840	\$2,576,064	\$4,460,304	\$3,543,931
Btr	Incremental gross profit uplift	\$344,250	\$722,925	\$1,518,143	\$2,585,318	\$2,051,016
Ctr	Self-service reporting	\$299,250	\$299,250	\$299,250	\$897,750	\$744,190
	<b>Total benefits (risk-adjusted)</b>	<b>\$1,263,900</b>	<b>\$2,286,015</b>	<b>\$4,393,457</b>	<b>\$7,943,372</b>	<b>\$6,339,137</b>

## OPTIMIZED STAFFING AND INVENTORY MANAGEMENT

Interviewed organizations praised Cognos Analytics for its applicability to a diverse range of use cases. For example, organizations with frontline operations used Cognos Analytics to tightly manage and monitor their supply chains, staffing models, and inventory levels. In doing so, branch managers prevented overstaffing and overstocking of their branches and instead achieved visibility and transparency into their day-to-day operations. One organization was able to reduce its average staffing levels by between 10% and 20% just by being able to more accurately predict foot traffic in real time using Cognos Analytics. As this organization said: “You want to have enough staff to serve everyone that walks in, but you don’t want to have five extra people in the stores with nobody to serve or sell to. Cognos Analytics helps us achieve that staffing balance.” Similarly, branch managers leveraged Cognos Analytics to keep track of inventory levels, ensuring that each item was properly accounted for at the end of each business day. This additional visibility encouraged both managers and associates to keep themselves accountable and ensure that there was no accidental product loss or shrinkage.

**“We used to lose millions of dollars on product shrinkage because inventory would just disappear, and we’d only count it once a year. We’ve now eliminated the majority of that because we are keeping track weekly, and the data is aggregated and reported to our operations team.”**

*Managing director, retail*

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- IBM Cognos Analytics is deployed across 6, 12, and 24 retail branches in Years 1, 2, and 3, respectively.
- Each retail branch is staffed with an average of 10 sales FTEs.
- The average level of inventory shrinkage prior to Cognos Analytics was 0.2% of total annual sales.

- The annual salary per sales associate is \$81,250. This assumes a 25% overhead burden rate.

**Risks.** Optimized staffing and inventory management benefits experienced by other organizations may vary based on the following factors.

- Number and growth of Cognos Analytics deployments.
- Excess levels of staff and inventory under legacy environment.

To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$3,543,931.

### Optimized Staffing And Inventory Management

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Total retail branches		30	30	30
A2	Percentage of branches leveraging IBM Cognos Analytics		20%	40%	80%
A3	Number of retail branches leveraging IBM Cognos Analytics	$A1 \times A2$	6	12	24
A4	Average store associates staffed per retail branch, before IBM Cognos Analytics		10	10	10
A5	Average store associates staffed per retail branch, after IBM Cognos Analytics		9	9	9
A6	Fully burdened sales associate salary		\$81,250	\$81,250	\$81,250
A7	Staffing optimization using IBM Cognos Analytics	$A3 \times (A4 - A5) \times A6$	\$487,500	\$975,000	\$1,950,000
A8	Average inventory shrinkage per retail branch, before IBM Cognos Analytics	$B2 \times 0.2\%$	\$60,000	\$63,000	\$66,150
A9	Average inventory shrinkage per retail branch, after IBM Cognos Analytics		\$12,000	\$12,600	\$13,230
A10	Improved inventory management using Cognos Analytics	$A3 \times (A8 - A9)$	\$288,000	\$604,800	\$1,270,080
At	Optimized staffing and inventory management	$A7 + A10$	\$775,500	\$1,579,800	\$3,220,080
	Risk adjustment	↓20%			
Atr	Optimized staffing and inventory management (risk-adjusted)		\$620,400	\$1,263,840	\$2,576,064
<b>Three-year total: \$4,460,304</b>			<b>Three-year present value: \$3,543,931</b>		

### INCREMENTAL GROSS PROFIT UPLIFT

In addition to using Cognos Analytics to promote operational excellence at the branch level, organizations also leveraged Cognos Analytics to directly drive sales. Before Cognos Analytics, individual sales associates did not have real-time access to their current performance levels, and managers did not have the data to set realistic sales and growth targets for their associates. Managers would instead set targets based on historical performance, rather than on real-time data, in order to proactively drive incremental growth.

Using Cognos Analytics, associates could monitor their daily sales performance against established targets and understand when they needed to push harder or utilize different tactics to increase success rates. Similarly, managers could perform A/B testing with different sales strategies and provide coaching and retraining at the individual level as needed. As one organization said, “Cognos Analytics gave us the data we needed to build an entire sales program, impacting everything from hiring, to training, and eventually compensation.”

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- IBM Cognos Analytics is deployed across 6, 12, and 24 retail branches in Years 1, 2, and 3, respectively.
- Annual sales per branch grows at 5% each year.
- Average gross margins are 45%.

**Risks.** The incremental gross profit uplift experienced by other organizations may vary based on the following factors:

- Number and growth of Cognos Analytics deployments.
- Individual gross margins.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$2,051,016.

Incremental Gross Profit Uplift					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Number of retail branches leveraging IBM Cognos Analytics	A3	6	12	24
B2	Annual sales per retail branch		\$30,000,000	\$31,500,000	\$33,075,000
B3	Average percentage sales uplift using IBM Cognos Analytics		0.5%	0.5%	0.5%
B4	Incremental sales uplift using IBM Cognos Analytics	B1*B2*B3	\$900,000	\$1,890,000	\$3,969,000
B5	Average gross margin		45%	45%	45%
Bt	Incremental gross profit uplift	B4*B5	\$405,000	\$850,500	\$1,786,050
	Risk adjustment	↓15%			
Btr	Incremental gross profit uplift (risk-adjusted)		\$344,250	\$722,925	\$1,518,143
<b>Three-year total: \$2,585,318</b>			<b>Three-year present value: \$2,051,016</b>		

## SELF-SERVICE REPORTING

By integrating data from multiple sources and departments under Cognos Analytics, users could easily access cross-functional data without needing to make requests to specific individuals and departments. Self-service capabilities had several important benefits: First, access to data and reporting was democratized, meaning it could be easily accessed by any user in accordance with the user's access rights as preconfigured through Cognos Analytics. Next, the reporting and data gathering process was streamlined by removing or reducing the need for steps such as communication between departments and functions, manual modification of reports and spreadsheets, and data validation and review. Finally, business decision-makers could more quickly leverage the insights from data to reinforce or expedite a critical decision. Given these factors, organizations were able to reduce the total time to perform a distinct reporting task by 93%.

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- Cognos Analytics is deployed across five corporate departments, each running an average of 1,000 reports per year.
- The hourly salary per business analyst is \$45. This assumes a 25% overhead burden rate.

**Risks.** Self-service reporting benefits experienced by other organizations may vary based on the following factors:

- Number of Cognos Analytics deployments
- Effectiveness of legacy reporting and analytics tools.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$744,190.

**“We had one report that ran on a spreadsheet, and by the time we pulled the numbers, extracted the data, and did some analysis on it, a week would have already elapsed. That same task is now done within minutes with Cognos Analytics.”**

*Business analyst, nonprofit/research*

Self-Service Reporting					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Number of corporate departments leveraging IBM Cognos Analytics		5	5	5
C2	Average number of custom reports run annually, per department		1,000	1,000	1,000
C3	Time needed to manually build and validate custom reports, in hours		1.5	1.5	1.5
C4	Time needed to self-service custom reports using Cognos Analytics, in hours		0.1	0.1	0.1
C5	Fully burdened hourly salary per business analyst		\$45	\$45	\$45
Ct	Self-service reporting	$C1 * C2 * (C3 - C4) * C5$	\$315,000	\$315,000	\$315,000
	Risk adjustment	↓5%			
Ctr	Self-service reporting (risk-adjusted)		\$299,250	\$299,250	\$299,250
<b>Three-year total: \$897,750</b>			<b>Three-year present value: \$744,190</b>		

### FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Cognos Analytics and later realize additional uses and business opportunities, including:

- Custom analysis and visualization.** While interviewed organizations primarily leveraged Cognos Analytics for managed and production reporting purposes, these organizations mentioned testing the idea of using Cognos Analytics as a tool for conducting and visualizing ad hoc analysis. Because Cognos Analytics brings together data sources across the organization, interviewees saw this is an opportunity to gather cross-functional insights while gradually upskilling read-only users on the more sophisticated features of Cognos Analytics.

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

# Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Dtr	IBM licensing and professional services	\$500,000	\$200,000	\$200,000	\$200,000	\$1,100,000	\$997,370
Etr	Onboarding and migration	\$309,063	\$282,109	\$564,219	\$0	\$1,155,391	\$1,031,822
Ftr	Report development	\$34,375	\$8,594	\$8,594	\$8,594	\$60,156	\$55,746
	Total costs (risk-adjusted)	\$843,438	\$490,703	\$772,813	\$208,594	\$2,315,547	\$2,084,938

## IBM LICENSING AND PROFESSIONAL SERVICES

Organizations that deployed Cognos Analytics on the cloud paid yearly SaaS subscription fees to IBM based on their subscription tier and specific contract terms. Furthermore, those on an enterprise SaaS license enjoyed unlimited user licensing with a fixed yearly cost, encouraging organizations to add users and deployments over time without the need for a lengthy budgeting and approval process. Most organizations also worked closely with an IBM or third-party consultant who helped deploy Cognos Analytics. While the specific scope of engagement for these professional services differed by organization, external consultants were engaged on everything from the creation of data migration roadmaps and strategy exercises, to executing the technical implementation (including assisting with any integrations and configurations), to facilitating training and change management.

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- The composite organization can scale Cognos Analytics to as many users as needed under the enterprise licensing agreement.

- IBM professional services consist of one consultant engaged over the course of the initial deployment year.

**Risks.** IBM licensing and professional services costs are reflective of actual fees, and thus, no risk adjustment was made. Over three years, licensing and professional services yield a total PV (discounted at 10%) of \$997,370.

**“We engaged professional services to help train a team of between 40 to 50 people as we transitioned from Cognos Analytics Version 10 to Version 11.”**

*Director of data and analytics,  
government*

IBM Licensing And Professional Services						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
D1	IBM Cognos Analytics licensing			\$200,000	\$200,000	\$200,000
D2	IBM professional services		\$500,000			
Dt	IBM licensing and professional services	D1+D2	\$500,000	\$200,000	\$200,000	\$200,000
	Risk adjustment	0%				
Dtr	IBM licensing and professional services (risk-adjusted)		\$500,000	\$200,000	\$200,000	\$200,000
<b>Three-year total: \$1,100,000</b>			<b>Three-year present value: \$997,370</b>			

### ONBOARDING AND MIGRATION

Deploying Cognos Analytics on the cloud took place in two distinct steps. The first involved simply procuring the solution, configuring security and firewall rules, and setting up single sign-on. This process took roughly one to two months, on average. Next, organizations rewrote and migrated their legacy data sources to Cognos Analytics over the course of six to 12 months, depending on the number and complexity of legacy files being migrated. Organizations typically deployed Cognos Analytics in phases, often migrating all necessary files relevant to one department or branch first before moving to another.

**“The initial implementation on the cloud was quick because we didn’t have to provision the environment. Pretty much all we had to do was enable single sign-on, and enable our data sources.”**

*Managing director, retail*

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- The initial onboarding process is managed by a single architect over a period of 1.5 months.
- The legacy data migration process is managed by a team of five migration experts over the span of six months.
- The annual salaries per enterprise architect and data migration expert are \$187,500 and \$98,125, respectively. These salaries assume a 25% overhead burden rate.

**Risks.** Onboarding and migration costs incurred by other organizations may vary based on the following factors:

- Number and complexity of data sources migrated.
- Expertise of the migration team.
- Any professional services support.

To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of \$1,031,822.

Onboarding And Migration						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
E1	Number of architects facilitating onboarding process		1			
E2	Time allocated to initial onboarding, in years		0.125			
E3	Fully burdened annual salary per enterprise architect		\$187,500			
E4	Onboarding costs	$E1 * E2 * E3$	\$23,438			
E5	Number of FTEs in data migration team		5	5	10	
E6	Time allocated to legacy data migration, in years		0.5	0.5	0.5	
E7	Fully burdened annual salary per data migration FTE		\$98,125.00	\$98,125.00	\$98,125.00	
E8	Legacy data migration costs	$E5 * E6 * E7$	\$245,312.50	\$245,312.50	\$490,625.00	
Et	Onboarding and migration	$E4 + E8$	\$268,750.50	\$245,312.50	\$490,625.00	
	Risk adjustment	↑15%				
Etr	Legacy data migration (risk-adjusted)		\$309,063.07	\$282,109.38	\$564,218.75	\$0
Three-year total: \$1,155,390.62			Three-year present value: \$1,031,822.00			

## REPORT DEVELOPMENT

To facilitate consumption of reports for read-only users, organizations typically dedicated several business analysts to the creation of report templates for both production and managed reporting use cases. While the amount of time needed to produce these templates differed by organization, interviewees found that the actual build process was as simple and intuitive as using a spreadsheet; the addition of tools such as NLP further abstracted out the need for manual work. Therefore, report development time was mostly driven by reviewing and validating internal business needs, rather than on the actual build itself. Additionally, in subsequent years after the development of an initial report, business analysts would continue to tweak and modify report templates to accommodate any new

business requirements. These ongoing report modifications typically demanded only a fraction of the time of the initial build.

**Modeling and assumptions.** For the composite organization, Forrester makes the following assumptions:

- The time required for the initial report build is two months. In each subsequent year after launching, business analysts spend an average of two weeks modifying reports based on user needs.
- The monthly salary per business analyst is \$7,812.50. This assumes a 25% overhead burden rate.

**Risks.** Report development costs incurred by other organizations may vary based on the following factor:

- Number and complexity of reporting use cases.

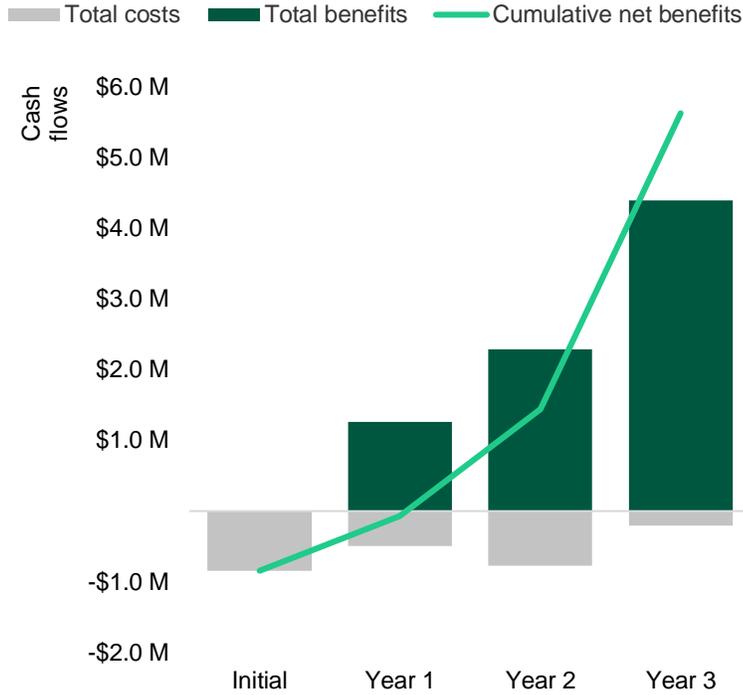
To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$55,746.

Report Development						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Number of business analysts building and modifying reports		2	2	2	2
F2	Time allocated to building or modifying reports, in months		2.0	0.5	0.5	0.5
F3	Fully burdened monthly salary per business analyst		\$7,812.50	\$7,812.50	\$7,812.50	\$7,812.50
Ft	Report development	$F1 * F2 * F3$	\$31,250.00	\$7,812.50	\$7,812.50	\$7,812.50
	Risk adjustment	↑10%				
Ftr	Report development (risk-adjusted)		\$34,375.00	\$8,593.75	\$8,593.75	\$8,593.75
<b>Three-year total: \$60,156.25</b>			<b>Three-year present value: \$55,746.00</b>			

# Financial Summary

## CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

### Cash Flow Chart (Risk-Adjusted)



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

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 Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$843,438)	(\$490,703)	(\$772,813)	(\$208,594)	(\$2,315,547)	(\$2,084,938)
Total benefits	\$0	\$1,263,900	\$2,286,015	\$4,393,457	\$7,943,372	\$6,339,137
Net benefits	(\$843,438)	\$773,197	\$1,513,203	\$4,184,863	\$5,627,825	\$4,254,199
ROI						204%
Payback						13.0

# 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.

FORRESTER®