

FORRESTER®

The Total Economic Impact™ Of IBM Planning Analytics with Watson

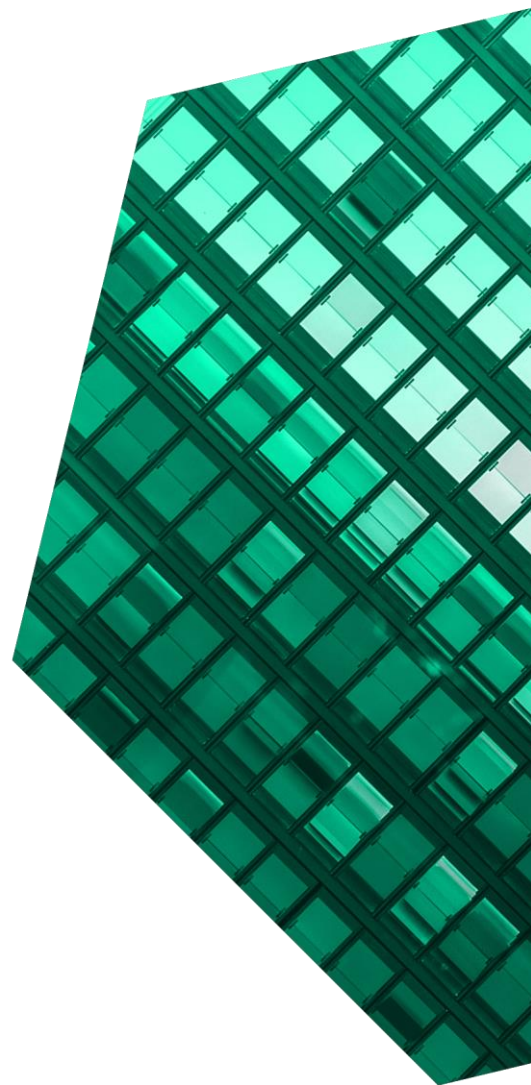
Cost Savings And Business Benefits
Enabled By Planning Analytics with Watson

DECEMBER 2021

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ABOUT FORRESTER CONSULTING

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Executive Summary

Modern businesses require purpose-built planning and analytics applications that cut across the enterprise. Gone are the days when these tools served only to support the planning and budgeting process. Instead, businesses have evolved to leverage planning and analytics solutions across any number of functions, such as sales, product, or supply chain.¹ These organizations require solutions they can flexibly deploy for various use cases while continuing to enable core financial planning and analysis.

[IBM Planning Analytics with Watson](#) is a comprehensive planning and analytics solution designed to integrate and streamline an organization's planning workflows, break down data silos across lines of business, and drive operational efficiencies for both knowledge and frontline workers.

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential ROI enterprises may realize by deploying IBM Planning Analytics with Watson. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of IBM Planning Analytics with Watson on their organizations.

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

Prior to leveraging IBM Planning Analytics with Watson, the interviewees' organizations lacked data cultures that would allow them to make the best decisions using accurate, real-time data. Frontline workers operated based on obsolete sales targets and inventory numbers while knowledge workers executed planning workflows using manual, spreadsheet-based tools and processes that were siloed, error-prone, and slow to compute.

KEY STATISTICS



Return on investment (ROI)

159%



Net present value (NPV)

\$3.2M

After the investment in Planning Analytics with Watson, the interviewees' organizations were able to unify their disparate planning systems while increasing the speed and reducing the back-office burden related to various planning workflows. At the same time, the organizations leveraged insights from Planning Analytics with Watson to generate maximum efficiency in frontline operations, which impacted everything from staffing models to real-time accounting of inventories.

KEY FINDINGS

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

- **Optimized frontline operations, including increased staffing efficiency and reduced inventory shrinkage.** Real-time reporting through Planning Analytics with Watson gave frontline managers the data they needed to discern how many employees their organizations would need at any given moment to meet

customer demand, which allowed managers to staff their branches with 10% more efficiency. Frontline managers also had better insight into their organizations' inventory levels, and they were able to reduce annual inventory shrinkage by up to 80%. For the composite organization, these operational benefits are worth a three-year PV of \$1.8 million.



Increased staffing efficiency
10%

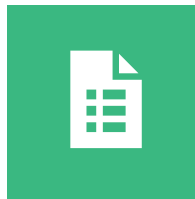
- Increased topline revenue.** With improved sales benchmarking and reporting, the interviewees' organizations were able to set more accurate sales targets, monitor and measure the performance of individual associates, and develop action plans or incentive structures around specific levels of performance. For the composite organization, this increased visibility leads to a sales uplift equal to 0.5% of its total gross revenues. From a subsequent gross profit perspective, the composite organization experiences present value net cash flows of \$424,000.



Sales uplift
0.5%

- Streamlined budgeting cycle.** Centralizing planning processes on an enterprise level allowed the interviewees' organizations to break siloes across disparate departments and lines of business, all contributing separately to the broader annual budget. In doing so, IBM Planning Analytics with Watson promoted collaboration and communication, created a

single and real-time source of truth, and streamlined burdensome administrative steps such as data collection and consolidation. The composite organization experiences a 63% reduction in labor effort needed to complete its annual budgeting cycle, which leads to a three-year PV cost savings of \$1.2 million.



Reduced budgeting effort
63%

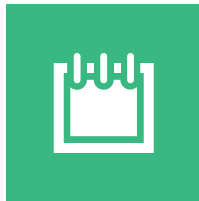
- Accelerated system processing.** Leveraging the powerful IBM TM1 calculation engine, the interviewees' organizations reduced the average time to run a planning system refresh from 45 minutes with their legacy planning systems to less than 10 minutes. With hundreds of reports refreshed during month-end reporting cycles, the organizations quickly experienced material time savings from faster system processing speeds. The composite organizations benefits from an 80% increase in the processing speed associated with report generation, which leads to efficiencies valued at a three-year PV of more than \$1 million.



Faster data processing
80%

- Streamlined forecasting process.** By leveraging templates and preexisting modules to seed historical data prior to calculating forecasting metrics for future periods, planning professionals spent less time on manual data collection and input, and they spent more time

reviewing and analyzing forecast results. During a three-year period, the composite organization reduces the labor effort of completing annual forecasts by 70%, amounting to a cost savings PV of \$195,000.



Reduced forecasting effort
70%

- **Reduced technical debt.** Interviewees said IBM Planning Analytics with Watson replaced their organizations' legacy planning solutions with a simple IT data feed. This created a centralized repository applicable across multiple planning use cases while simultaneously reducing fees for hardware, software, support, and professional services associated with legacy systems. For the composite organization, the cost savings total a three-year PV of \$689,000.

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

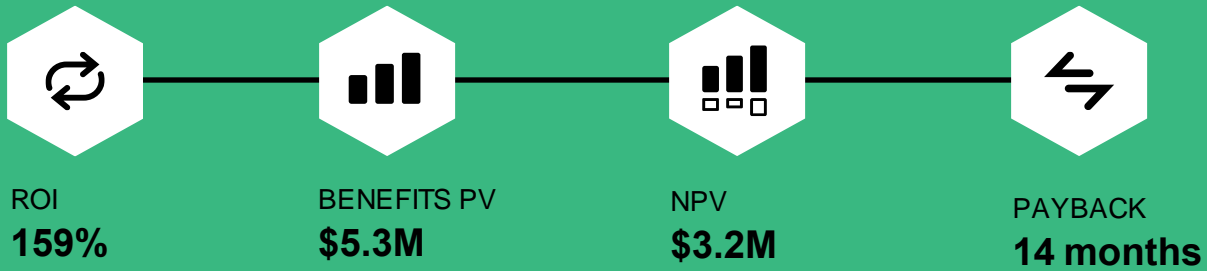
- Reduced risk of errors.
- Improved data hygiene and consistency.
- Increased collaboration.

Costs. Risk-adjusted PV costs include:

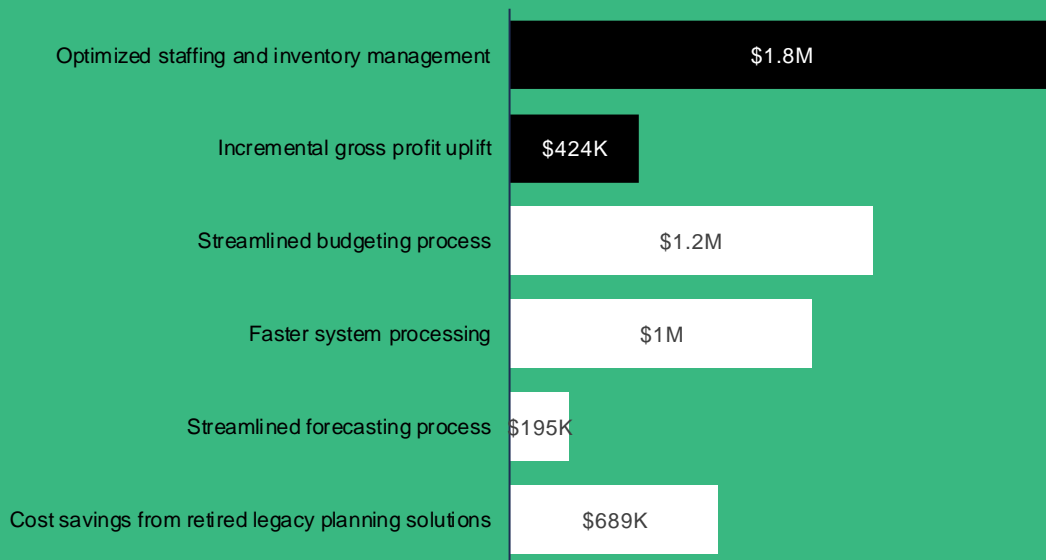
- **Licensing, support, and implementation services.** Interviewees said their organizations engaged IBM Business Partners to assist in the initial implementation, customization, and configuration of IBM Planning Analytics with Watson for their unique planning use cases. Furthermore, the organizations paid software licensing fees to IBM or an IBM Business Partner based on the number and types of users. For the composite organization, these costs total a three-year PV of \$951,000.

- **Frontline deployment costs.** The interviewees' organizations migrated legacy branch-level data into Planning Analytics with Watson to empower both branch managers and store associates to make data-driven decisions based on factors such as daily sales targets, inventory levels, and customer footprints. They migrated this data in phases, each consisting of a subset of the organization's total branch footprint. For the composite organization, frontline deployment costs total a three-year PV of \$563,000.
- **Internal deployment costs.** Interviewees said dedicated internal teams consisting of both technical and project management resources coordinated with IBM and IBM Business Partners during each implementation of Planning Analytics with Watson. For the composite organization, the associated labor amounts to a three-year PV of \$337,000.
- **User training.** End users spent hours to weeks training to use IBM Planning Analytics with Watson, depending on the user's role. For the composite organization, training costs amount to a three-year PV of \$141,000.
- **Report development.** Interviewees said that although the majority of their organizations' Planning Analytics with Watson users are those who consume reports and data, their organizations still needed to dedicate a number of people to build and modify the source models. For the composite organization, the cost of these resources total a three-year PV of \$51,000.

The decision-maker interviews and financial analysis found that a composite organization experiences benefits of \$5.3 million over three years versus costs of \$2 million, adding up to a net present value (NPV) of \$3.2 million and an ROI of 159%.



Benefits (Three-Year)



Frontline benefits from Planning Analytics with Watson

Internal benefits from Planning Analytics with Watson

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 IBM Planning Analytics with Watson.

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 IBM Planning Analytics with Watson 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 study to determine the appropriateness of an investment in the Planning Analytics with Watson.

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 IBM Planning Analytics with Watson.



DECISION-MAKER INTERVIEWS

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



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' 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 decision-makers.



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 Planning Analytics with Watson Customer Journey

■ Drivers leading to the Planning Analytics with Watson investment

| Interviewed Decision-Makers | | | |
|-----------------------------|---------------------|----------|------------------|
| Interviewee | Industry | Region | Revenue |
| Chief financial officer | Industrial services | EMEA | \$100M to \$500M |
| Commercial manager | Packaging | APAC | \$1B to \$5B |
| Business architect | Entertainment | Global | \$10B+ |
| Director of FP&A | Retail | Americas | \$10B+ |

KEY CHALLENGES

Interviewees said their organizations each performed three primary types of recurring planning activities: budgeting, forecasting, and reporting. Each of the organizations performed these activities on a monthly or annual basis during regular planning cycles, such as for financial planning. Prior to adopting IBM Planning Analytics with Watson, keeping track of and manually executing on these activities using spreadsheets created the following challenges:

- **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 the organizations often compiled data in batch reports, such as monthly sales reports. As a result, frontline workers had little visibility into their performance relative to their targets, and managers did not have the insights they needed to accurately forecast performance and create action plans.
- **Siloed planning workflows.** Organizations — particularly large enterprises — often adopt several different planning solutions catered to specific departments, functions, or planning cycles. Ultimately, however, the outputs of individual planning activities must roll up into a

single organizational hierarchy. This can be a challenge when two different solutions display the same data in different ways or they are configured to organize the data in a singular lens, such as a general ledger lens or a product lens. Interviewees from larger organizations with more complex planning cycles said the reconciliation of data from two or more different planning systems often required manual effort from dedicated resources.

“We used to have four different hierarchies for four different applications. Now, they all roll up to a single segment.”

Business architect, entertainment

- **Expensive and inflexible spreadsheet-based legacy planning systems.** Having siloed planning workflows also meant that the interviewees’ organizations needed to pay for additional licensing, hardware, and support for each planning system. Furthermore, these planning solutions required additional integration work so they could effectively communicate with each other. And any changes would require even

more integration and customization work, ultimately resulting in hefty piles of professional services fees paid to system integrators or other third-party providers.

“We had a billion dollars of sales over three businesses [and] on four ERPs linked through dozens of spreadsheets. You can see why that was a problem.”

Commercial manager, packaging

- Time- and labor-intensive planning activities.** With their legacy spreadsheet-based planning solutions, the interviewees’ organizations needed to manually populate, refresh, and pull data during planning cycles such as month-end reporting or forecasting. For example, a data refresh could take up to an hour to execute depending on the complexity and the amount of data being pulled, which would leave less time for review and analysis. Forecasting also required manual seeding of data from prior periods before any projections could even be made. The organizations repeated these manual processes for each planning cycle and workflow, which wasted valuable hours that could’ve be spent on other value-added activities.

COMPOSITE ORGANIZATION

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

Description of composite. The composite organization is a retail enterprise that operates in the Americas. It has 5,000 employees and generates

annual revenues of \$800 million. It previously relied on spreadsheet-based planning solutions for individual planning workflows. But as it continued to grow, repeating planning processes across the branch footprint became a time-consuming and expensive endeavor. This prompted the organization to engage IBM. The organization operates 30 retail branch locations in Year 1 of the deployment, and this increases to 35 by Year 3. Each branch acts as a separate revenue and cost center, which necessitated individual input toward annual budgeting and monthly forecasting and reporting.

Deployment characteristics. The composite organization migrates its legacy branch sales and performance data to Planning Analytics with Watson in phases. This includes 10% of branches in Year 1, 21% in Year 2, and 40% in Year 3. By Year 3, the organization has 329 users of IBM Planning Analytics with Watson, including 241 read-only users, 70 read/write users, and 18 power users (including administrators/modelers). The composite also deploys IBM Planning Analytics with Watson Cloud, leveraging both IBM Planning Analytics with Watson for Microsoft Excel and IBM Planning Analytics with Watson Workspace.

Key assumptions

- **Retail organization**
- **\$800M annual revenue**
- **153 users in Year 1**
- **329 users in Year 3**
- **Use cases include FP&A, sales planning, workforce planning, and inventory planning**
- **Cloud deployment**

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 | \$297,400 | \$672,212 | \$1,319,600 | \$2,289,212 | \$1,817,346 |
| Btr | Incremental gross profit uplift | \$74,800 | \$158,667 | \$299,200 | \$532,667 | \$423,923 |
| Ctr | Streamlined budgeting process | \$368,874 | \$507,202 | \$537,941 | \$1,414,017 | \$1,158,678 |
| Dtr | Faster system processing | \$279,936 | \$461,894 | \$489,888 | \$1,231,718 | \$1,004,278 |
| Etr | Streamlined forecasting process | \$54,432 | \$89,802 | \$95,256 | \$239,490 | \$195,267 |
| Ftr | Cost savings from retired legacy planning solutions | \$212,500 | \$314,500 | \$314,500 | \$841,500 | \$689,388 |
| Total benefits (risk-adjusted) | | \$1,287,942 | \$2,204,277 | \$3,056,385 | \$6,548,604 | \$5,288,880 |

OPTIMIZED STAFFING AND INVENTORY MANAGEMENT

Evidence and data. Interviewees praised Planning Analytics with Watson for its applicability to a diverse range of use cases. For example, organizations with frontline operations used Planning Analytics with Watson 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 they achieved visibility and transparency into their organizations' day-to-day operations.

By leveraging Planning Analytics with Watson to keep track of inventory levels, branch managers ensured that each item was properly accounted for at the end of each business day. This additional visibility encouraged managers and associates to keep themselves accountable and to ensure there was no accidental product loss or shrinkage.

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

- The composite deploys IBM Planning Analytics with Watson to three retail branches in Year 1, to seven branches in Year 2, and to 14 branches in Year 3.
- Each retail branch is staffed with 10 sales FTEs.
- The average level of inventory shrinkage prior to using Planning Analytics with Watson was 0.2% of the organization's total annual sales.
- The annual salary per sales associate is \$81,250. This assumes a 25% overhead burden rate.

“We have a much better employee experience today because our branches are always staffed with the right number of people to support the workload on any given day.”

Director of FP&A, retail

Risks. The impact of this benefit may vary based on the following factors.

- The number and growth of Planning Analytics with Watson deployments.
- The excess levels of staff and inventory related to its legacy environment.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$1.8 million.

“In the midst of [the COVID-19 pandemic], Planning Analytics with Watson helped us quickly respond to some issues in our approach to labor planning, which helped support our business in a dire time of need.”

Director of FP&A, retail

Optimized Staffing And Inventory Management

| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
|---------------------------------------|--|---------------|--|-----------|-------------|
| A1 | Number of branches | Composite | 30 | 33 | 35 |
| A2 | Percentage of branches leveraging IBM Planning Analytics with Watson | Composite | 10% | 21% | 40% |
| A3 | Number of retail branches leveraging IBM Planning Analytics with Watson | A1*A2 | 3 | 7 | 14 |
| A4 | Average store associates staffed per retail branch before IBM Planning Analytics with Watson | Composite | 10 | 10 | 10 |
| A5 | Average store associates staffed per retail branch after IBM Planning Analytics with Watson | Composite | 9 | 9 | 9 |
| A6 | Fully burdened sales associate salary | TEI Standard | \$81,250 | \$81,250 | \$81,250 |
| A7 | Staffing optimization using IBM Planning Analytics with Watson | A3*(A4-A5)*A6 | \$243,750 | \$568,750 | \$1,137,500 |
| A8 | Average inventory shrinkage per retail branch before IBM Planning Analytics with Watson | B2*0.2% | \$53,333 | \$48,485 | \$45,714 |
| A9 | Average inventory shrinkage per retail branch after IBM Planning Analytics with Watson | Interviews | \$10,667 | \$9,697 | \$9,143 |
| A10 | Improved inventory management using Planning Analytics with Watson | A3*(A8-A9) | \$128,000 | \$271,515 | \$512,000 |
| At | Optimized staffing and inventory management | A7+A10 | \$371,750 | \$840,265 | \$1,649,500 |
| | Risk adjustment | ↓20% | | | |
| Atr | Optimized staffing and inventory management (risk-adjusted) | | \$297,400 | \$672,212 | \$1,319,600 |
| Three-year total: \$2,2890,212 | | | Three-year present value: \$1,817,346 | | |

INCREMENTAL GROSS PROFIT UPLIFT

Evidence and data. In addition to using Planning Analytics with Watson to promote operational excellence at the branch level, the interviewees' organizations also leveraged Planning Analytics with Watson to directly drive sales.

Before deploying Planning Analytics with Watson, 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. To proactively drive incremental growth, managers would instead set targets based on historical performance rather than on real-time data.

Using Planning Analytics with Watson, 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.

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

- The composite deploys IBM Planning Analytics with Watson to three retail branches in Year 1, to

seven branches in Year 2, and to 14 branches in Year 3.

- The average gross margins are 22%.

“With high-quality data at such a granular level, [we] can make really good commercial decisions. Data-driven decision-making was a huge part of our turnaround story.”

Commercial manager, packaging

Risks. The impact of this benefit may vary based on the following factors:

- The number and growth of Planning Analytics with Watson deployments.
- Individual gross margins.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$424,000.

“Even though we were losing revenue during [the COVID-19 pandemic], we were actually able to increase our profitability because of the scenario-planning exercises we did with Planning Analytics with Watson. Thanks to those, we were able to allocate the right number of people to our growing resources and divest from our shrinking ones.”

Chief financial officer, industrial services

| Incremental Gross Profit Uplift | | | | | |
|------------------------------------|--|------------|--|--------------|--------------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| B1 | Number of retail branches leveraging IBM Planning Analytics with Watson | A3 | 3 | 7 | 14 |
| B2 | Annual sales per retail branch | Composite | \$26,666,667 | \$24,242,424 | \$22,857,143 |
| B3 | Average percentage sales uplift using IBM Planning Analytics with Watson | Interviews | 0.5% | 0.5% | 0.5% |
| B4 | Incremental sales uplift using IBM Planning Analytics with Watson | B1*B2*B3 | \$400,000 | \$848,485 | \$1,600,000 |
| B5 | Average gross margin | Composite | 22% | 22% | 22% |
| Bt | Incremental gross profit uplift | B4*B5 | \$88,000 | \$186,667 | \$352,000 |
| | Risk adjustment | ↓15% | | | |
| Btr | Incremental gross profit uplift (risk-adjusted) | | \$74,800 | \$158,667 | \$299,200 |
| Three-year total: \$532,667 | | | Three-year present value: \$423,923 | | |

STREAMLINED BUDGETING PROCESS

Evidence and data. Interviewees said a common pain point across their organizations is the time it takes to complete an annual budgeting cycle. For some organizations, this process can take up to six months from beginning to end, including the time to create budget templates, input historical and forecasted data, compile and merge datasets, and review and finalize the consolidated plan. Producing the annual budget involves input from various functions, branches, and lines of business, each often working with different templates and even different planning systems or software. The end result is often a disjointed budgeting process that is iterative rather than cumulative and requires significant hours of rework and review.

Interviewees said IBM Planning Analytics with Watson tackled these challenges by acting as a central planning system that could be integrated across different endpoints and planning workflows within their organizations. End users could therefore create their inputs with the confidence that they were

working with the latest historical and forecast data and under a singular view that was aligned and used across the organization — from executive leadership down to individual business managers. By accessing a single source of truth, the organizations increased communication and collaboration during the budgeting process, reduced the frequency and likelihood of errors, and lessened the need for multiple, iterative review cycles.

“[Previously,] any changes to the budget carried a two-week cycle time. Now, all updates are done in the same day. It sounds corny, but it really is [done with] just a click of a button.”

Commercial manager, packaging

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

- The composite uses a bottom-up approach for its annual budgeting process and each retail branch individually contributes to the master plan.
- The number of retail branches grows organically from 30 in Year 1 to 33 in Year 2 and to 35 in Year 3.
- In Year 2, the composite deploys IBM Planning Analytics with Watson for operational and product-level planning that involves an additional FTE per branch across the organization's footprint for annual budgeting.
- The fully burdened hourly rate per planning FTE is \$60.

Risks. The impact of this benefit may vary depending on the following factors:

- Industry- and organization-specific characteristics that impact the complexity of the organization's annual budgeting process. For example, small organizations often have less siloed planning workflows and processes compared to larger enterprises.
- The organization's budgeting approach, which can impact the amount of overhead needed to complete its annual budgeting cycle. For example, using a top-down approach relies on fewer inputs than using a bottom-up approach.
- The organization's legacy planning environment, which will impact the efficiency of its annual budgeting process prior to adopting IBM Planning Analytics with Watson, and ultimately, the magnitude of improvement it achieves with it.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$1.2 million.

| Streamlined Budgeting Process | | | | | |
|--------------------------------------|--|--------------|--|-----------|-----------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| C1 | Number of branches | Composite | 30 | 33 | 35 |
| C2 | Number of hours spent on annual budgeting cycle per planning FTE | Composite | 90 | 90 | 90 |
| C3 | Number of planning FTEs involved in annual budgeting cycle per branch | Composite | 4 | 5 | 5 |
| C4 | Time needed to execute annual budgeting cycle with legacy planning environment (hours) | C1*C2*C3 | 10,800 | 14,850 | 15,750 |
| C5 | Percent reduction in time needed to execute annual budgeting cycle with IBM Planning Analytics with Watson | Interviews | 63.25% | 63.25% | 63.25% |
| C6 | Time saved by executing annual budgeting cycle with IBM Planning Analytics with Watson (hours) | C4*C5 | 6,831.0 | 9,392.6 | 9,961.9 |
| C7 | Fully burdened hourly rate of planning FTE | TEI Standard | \$60 | \$60 | \$60 |
| Ct | Streamlined budgeting process | C6*C7 | \$409,860 | \$563,558 | \$597,713 |
| | Risk adjustment | ↓10% | | | |
| Ctr | Streamlined budgeting process (risk-adjusted) | | \$368,874 | \$507,202 | \$537,941 |
| Three-year total: \$1,414,017 | | | Three-year present value: \$1,158,678 | | |

FASTER SYSTEM PROCESSING

Evidence and data. Interviewees said that when it came to month-end reporting, their organizations faced similar challenges to those they experienced during annual budgeting cycles. These challenges included inefficiencies related to organizational siloes, lack of collaboration, and multiple sources of the truth.

Additionally, due to the number of reports run and accounts closed during month-end reporting, interviewees said the processing times of legacy planning systems presented another significant pain point. During month-end reporting, their organizations would reconcile and close hundreds of books, which would trigger multiple system refreshes along the way.

Interviewees said their organizations' legacy planning systems struggled with the volume of data that needed to be processed during this period, resulting in slow refreshes that could take up to an hour each.

With IBM Planning Analytics with Watson, the organizations could refresh, calculate, and pull data in a fraction of the time required with their legacy planning platforms. Furthermore, this speed remained consistent across both on-premises and cloud-based deployments.

On average, the interviewees' organizations slashed the time needed to refresh a single report from 45 minutes to 9 minutes.

“We cut two days out of every month-end reporting cycle because we can now get the data we need in an hour instead of waiting for the data to go through multiple ERP systems.”

Commercial manager, packaging

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

- The number of retail branches grows organically from 30 in Year 1 to 33 branches in Year 2 and to 35 branches in Year 3.
- In Year 1, the composite deploys IBM Planning Analytics with Watson for core financial planning. This process involves two FTEs per branch across the organization’s footprint for month-end reporting.
- In Year 2, the composite deploys IBM Planning Analytics with Watson for operational and product-level planning. This involves an

additional FTE per branch across the organization’s footprint for month-end reporting.

- The composite posts entries for month-end reporting during a three-day period, during which an average of four reports are refreshed per day.
- The fully burdened hourly rate per planning FTE is \$60.

Risks. The impact of this benefit may vary based on the following factors:

- The organization’s legacy planning environment, which will impact the efficiency of its month-end reporting process prior to adopting IBM Planning Analytics with Watson and, ultimately, the magnitude of improvement it achieves with it.
- The cadence of reporting workflows, which will determine the number of reports refreshed in a given year. For example, some organizations report on a quarterly basis and others report monthly.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$1 million.

| Faster System Processing | | | | | |
|--------------------------------------|--|-----------------------|--|-----------|-----------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| D1 | Number of branches | Composite | 30 | 33 | 35 |
| D2 | Number of times a report is refreshed during month-end reporting per planning FTE | Composite | 144 | 144 | 144 |
| D3 | Number of planning FTEs involved in month-end reporting per branch | Composite | 2 | 3 | 3 |
| D4 | Total number of reports refreshed during month-end reporting cycle | $D1 * D2 * D3$ | 8,640 | 14,256 | 15,120 |
| D5 | Time needed to refresh a single report with legacy planning environment (hours) | Interviews | 0.75 | 0.75 | 0.75 |
| D6 | Time needed to refresh a single report with IBM Planning Analytics with Watson (hours) | Interviews | 0.15 | 0.15 | 0.15 |
| D7 | Fully burdened hourly rate of planning FTE | TEI Standard | \$60 | \$60 | \$60 |
| Dt | Faster system processing | $D4 * (D5 - D6) * D7$ | \$311,040 | \$513,216 | \$544,320 |
| | Risk adjustment | ↓10% | | | |
| Dtr | Faster system processing (risk-adjusted) | | \$279,936 | \$461,894 | \$489,888 |
| Three-year total: \$1,231,718 | | | Three-year present value: \$1,004,279 | | |

STREAMLINED FORECASTING PROCESS

Evidence and data. Similar to reporting workflows, interviewees said their organizations also forecasted workflows multiple times per year, which allowed for frequent adjustments in response to major profit and loss (P&L)-driving events or changing market conditions.

They said that before projecting future outcomes, they first needed to seed historical data into their organizations' planning systems. With legacy spreadsheet-based planning systems, this process typically involved manual input and reorganization of data, and it required hours of up-front work to prepare a forecasting template.

Interviewees noted that IBM Planning Analytics with Watson made this seeding process a near-instantaneous exercise. Instead of manually creating

and updating forecasting templates for individual cost and revenue centers, their organizations could leverage IBM Planning Analytics with Watson to automatically populate and prepare preexisting forecasting templates with the most up-to-date historical data. This shaved 70% from the total hours needed to produce monthly forecasts.

“With a thousand different classes and roll-ups, business analysts were probably spending 40 hours a month preparing P&Ls. We’ve dropped that down to 2 to 3 hours of time.”

Director of FP&A, retail

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

- The number of retail branches grows organically from 30 in Year 1 to 33 branches in Year 2 and to 35 branches in Year 3.
- In Year 1, the composite deploys IBM Planning Analytics with Watson for core financial planning. This process involves two FTEs per branch across the organization's footprint for month-end forecasting.
- In Year 2, the composite deploys IBM Planning Analytics with Watson for operational and product-level planning. This involves an additional FTE per branch across the organization's footprint for month-end forecasting.
- The fully burdened hourly rate per planning FTE is \$60.

Risks. The impact of this benefit may vary based on the following factors:

- The organization's legacy planning environment, which will impact the efficiency of its month-end forecasting process prior to adopting IBM Planning Analytics with Watson and, ultimately, the magnitude of improvement it achieves.
- The cadence of the organization's reporting workflows, which will determine the number of reports run in a given year. For example, some organizations run forecasts on a quarterly basis while others forecast monthly.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$195,000.

| Streamlined Forecasting Process | | | | | |
|------------------------------------|--|--------------|--|----------|-----------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| E1 | Number of branches | Composite | 30 | 33 | 35 |
| E2 | Number of hours spent on monthly forecasting per planning FTE | Composite | 24 | 24 | 24 |
| E3 | Number of planning FTEs involved in monthly forecasting, per branch | Composite | 2 | 3 | 3 |
| E4 | Time needed to execute monthly forecasting with legacy planning environment (hours) | E1*E2*E3 | 1,440 | 2,376 | 2,520 |
| E5 | Percentage reduction in time needed to execute monthly forecasts by seeding data with IBM Planning Analytics with Watson | Composite | 70% | 70% | 70% |
| E6 | Time saved by performing monthly forecasting with IBM Planning Analytics with Watson, (hours) | E4*E5 | 1,008 | 1,663 | 1,764 |
| E7 | Fully burdened hourly rate of planning FTE | TEI Standard | \$60 | \$60 | \$60 |
| Et | Streamlined forecasting process | E6*E7 | \$60,480 | \$99,780 | \$105,840 |
| | Risk adjustment | ↓10% | | | |
| Etr | Streamlined forecasting process (risk-adjusted) | | \$54,432 | \$89,802 | \$95,256 |
| Three-year total: \$239,490 | | | Three-year present value: \$195,267 | | |

COST SAVINGS FROM RETIRED LEGACY PLANNING SOLUTIONS

Evidence and data. Interviewees said their organizations' legacy planning solutions were inherently siloed because they were designed to fit specific use cases or planning workflows. As a result, they would adopt multiple planning point solutions across their organizational footprints. So, the organizations needed to manually reconcile numbers across solutions, which led to the inefficiencies discussed earlier in this study and to engaging professional services to facilitate change management or integration support. Over time, the costs of licensing, hardware, professional services, and support for these legacy solutions became overwhelming, and the total cost of ownership would often run well into the millions.

Interviewees said that because IBM Planning Analytics with Watson is equally compatible across cloud and on-premises deployments and because it's designed to be use-case agnostic, their organizations were able to gradually expand IBM Planning Analytics with Watson throughout while replacing legacy planning solutions.

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

- The composite replaces its core financial planning and analysis (FP&A) solution, which cost the organization an average of \$250,000 per year in licensing, hardware, professional services, and support.

- In Year 2, the composite replaces its supply chain and operational planning solution, which cost the organization an average of \$150,000 per year in licensing, hardware, professional services, and support. In its place, the composite uses a single IT data feed integrated with IBM Planning Analytics with Watson, which costs the organization \$30,000 per year.

Risks. The impact of this benefit may vary based on the total cost of ownership of the organization’s legacy planning solutions and the number and type of IBM Planning Analytics with Watson deployments that replace them.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$689,000.

| Cost Savings From Retired Legacy Planning Solutions | | | | | |
|---|---|-----------|-------------------------------------|-----------|-----------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| F1 | Licensing, hardware, professional services, and support for legacy planning solutions | Composite | \$250,000 | \$400,000 | \$400,000 |
| F2 | Cost of incremental data feed to Planning Analytics with Watson | Composite | \$0 | \$30,000 | \$30,000 |
| Ft | Cost savings from retired legacy planning solutions | F1-F2 | \$250,000 | \$370,000 | \$370,000 |
| | Risk adjustment | ↓15% | | | |
| Ftr | Cost savings from retired legacy planning solutions (risk-adjusted) | | \$212,500 | \$314,500 | \$314,500 |
| Three-year total: \$841,500 | | | Three-year present value: \$689,388 | | |

UNQUANTIFIED BENEFITS

Interviewees’ said their organizations had benefited from IBM Planning Analytics with Watson in ways that could not necessarily be quantified but that were significant. They noted the following benefits:

- Reduced risk of errors.** Using IBM Planning Analytics with Watson, the organizations automated manual, spreadsheet-based processes, which minimized the possibility of human error. Additionally, by centralizing planning processes instead of having separate components managed and updated by individual contributors and teams and that would later be consolidated, the organizations based projections and budgets on a single source of truth. This increased the accuracy and reliability of the data.
- Improved data hygiene and consistency.** Interviewees said gathering input data for a

planning process is a time-consuming activity that often involves multiple departments and stakeholders. Without the presence of a dedicated project manager periodically gathering and consolidating these inputs, individual departments seldom updated planning spreadsheets and documents until it was

“Planning Analytics with Watson is so easy to use that even our salespeople have been successfully using it to create top-line budgets for their customers.”

Chief financial officer, industrial services

required for a specific planning process (e.g., for budgeting or forecasting).

However, interviewees said that because IBM Planning Analytics with Watson is easy to use and update in real time, it empowered departments to update central planning documents more frequently. This allowed users who needed to access and analyze these documents to consistently access up-to-date data.

- **Increased collaboration.** Interviewees said that in their organizations' legacy planning environments, it was difficult to effectively share data across teams and lines of business. Spreadsheets would be formatted inconsistently, important data points would be missing, the wrong people could access the documents, and maintaining version control was a challenge. By leveraging IBM Planning Analytics with Watson as the sole platform housing and powering a department's planning processes, it was easier to break siloes and work across different teams and contributors involved in an integrated planning process.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Planning Analytics with Watson and later realize additional uses and business opportunities, and this includes hybrid configuration. Because Planning Analytics with Watson functions identically across cloud and on-premises deployments, organizations can deploy it for multiple planning environments without risking lack of interoperability from one environment to the next. Additionally, this allows organizations to take advantage of the benefits of hybrid computing while maintaining their preferred deployment models.

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 |
| Gtr | Licensing, support, and implementation services | \$315,000 | \$334,060 | \$186,732 | \$237,535 | \$1,073,327 | \$951,478 |
| Htr | Frontline deployment costs | \$181,384 | \$149,040 | \$298,080 | \$0 | \$628,504 | \$563,222 |
| Itr | Internal deployment costs | \$209,790 | \$139,860 | \$0 | \$0 | \$349,650 | \$336,935 |
| Jtr | IBM Planning Analytics with Watson user training | \$0 | \$104,627 | \$40,063 | \$16,448 | \$161,138 | \$140,583 |
| Ktr | Report development | \$31,680 | \$7,920 | \$7,920 | \$7,920 | \$55,440 | \$51,376 |
| | Total costs (risk-adjusted) | \$737,854 | \$735,507 | \$532,795 | \$261,903 | \$2,268,059 | \$2,043,594 |

LICENSING, SUPPORT, AND IMPLEMENTATION SERVICES

Evidence and data. Interviewees said that in order to successfully launch IBM Planning Analytics with Watson, their organizations first needed to engage IBM Professional Services or an IBM Business Partner to assist in creating and configuring modules, templates, and cubes; perform data integrations; and conduct user experience testing.

For core FP&A implementations, interviewees from organizations that deployed Planning Analytics with Watson in the cloud said implementation times ranged from six to 12 months, while those from organizations that deployed on-premises said implementation times ranged from 12 to 18 months.

Additionally, the interviewees' organizations paid IBM software licensing and support fees based on their active IBM Planning Analytics with Watson user bases broken down by the number of users with read-only capabilities, those with read/write capabilities, and power users with modeling capabilities.

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

- The composite opts for a cloud-only deployment of Planning Analytics with Watson with implementation cycle times lasting an average of six months across planning use cases.
- Partner service fees for the initial implementation of IBM Planning Analytics with Watson for core FP&A planning total \$300,000.
- During Year 1, the organization executes its second deployment of Planning Analytics with Watson for supply chain and operational planning. This costs an additional \$200,000 in partner service fees.
- The number of read-only users grows from 93 in Year 1 to 160 users in Year 2 and to 241 users in Year 3.
- The number of read/write users grows from 48 in Year 1 to 66 users in Year 2 and to 70 users in Year 3.

- The number of power users grows from 12 in Year 1 to 16 users in Year 2 to 18 users in Year 3.

Risks. The impact of this cost may vary based on the following factors:

- The number and composition of users, which will determine licensing and support fees quoted in the annual contract. And discounts based on discretionary relationships or volume directly through IBM or IBM partners can further alter these fees.

- Partner implementation fees, which will vary widely based on the number and types of Planning Analytics with Watson deployments, the complexity of the organization’s existing planning environment, and the specific partner that delivers the services.

Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$951,500.

Licensing, Support, And Implementation Services

| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
|--------------------------------------|---|------------|--|-----------|-----------|-----------|
| G1 | Partner implementation services | Composite | \$300,000 | \$200,000 | | |
| G2 | Planning Analytics with Watson licensing and ongoing support | Interviews | | \$118,152 | \$177,840 | \$226,224 |
| Gt | Licensing, support, and implementation services | G1+G2 | \$300,000 | \$318,152 | \$177,840 | \$226,224 |
| | Risk adjustment | ↑5% | | | | |
| Gtr | Licensing, support, and implementation services (risk-adjusted) | | \$315,000 | \$334,060 | \$186,732 | \$237,535 |
| Three-year total: \$1,073,327 | | | Three-year present value: \$951,478 | | | |

FRONTLINE DEPLOYMENT COSTS

Evidence and data. Interviewees said their organizations typically deployed Planning Analytics with Watson in phases and often migrated all necessary files relevant to one department or branch before moving to another. Once all the legacy sales and performance data was migrated into the Planning Analytics with Watson system, IT configured firewall rules, user access, and single sign-on for branch managers and store associates who would access Planning Analytics with Watson.

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

- One architect manages the onboarding process during a period of 1.5 months.

- A team of five migration experts manages the legacy data migration process during the span of six months.
- The average daily salaries of an enterprise architect and data migration expert are \$625 and \$360, respectively. Forrester assumes the overhead burden rate is 25%.

Risks. The impact of this cost may vary based on the following factors:

- The number and complexity of data sources migrated.
- The expertise of the migration team.
- Professional services support.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of \$563,200.

| Frontline Deployment Costs | | | | | | |
|------------------------------------|--|--------------|--|-----------|-----------|--------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| H1 | Number of architects who facilitate onboarding process | Composite | 1 | | | |
| H2 | Time allocated for initial onboarding (days) | Composite | 45 | | | |
| H3 | Fully burdened software architect daily rate | TEI Standard | \$625 | | | |
| H4 | Onboarding costs | H1*H2*H3 | \$28,125 | | | |
| H5 | Number of FTEs on data migration team | Composite | 2 | 2 | 4 | |
| H6 | Time allocated to legacy data migration (days) | Composite | 180 | 180 | 180 | |
| H7 | Fully burdened business analyst daily rate | TEI Standard | \$360 | \$360 | \$360 | |
| H8 | Legacy data migration costs | H5*H6*H7 | \$129,600 | \$129,600 | \$259,200 | |
| Ht | Frontline deployment costs | H4+H8 | \$157,725 | \$129,600 | \$259,200 | \$0 |
| | Risk adjustment | ↑15% | | | | |
| Htr | Frontline deployment costs (risk-adjusted) | | \$181,384 | \$149,040 | \$298,080 | \$0 |
| Three-year total: \$628,504 | | | Three-year present value: \$536,222 | | | |

INTERNAL DEPLOYMENT COSTS

Evidence and data. Interviewees said successfully deploying IBM Planning Analytics with Watson required a full-time effort not only from IBM Professional Services or IBM Business Partners, but also from their organizations.

In fact, they dedicated a number of technical and administrative resources to ensure seamless projects. Deployment teams typically consisted of a project manager from the business (who worked with IBM or an IBM Business Partner to identify and deliver on business requirements) and several IT resources, including engineers, developers, and architects (who provided guidance throughout the technical components of the implementation).

The organizations' implementation processes took anywhere from six months to 18 months to complete, depending on the deployment model, characteristics of the implementation partner, and the organization's legacy environment. During this time, internal deployment teams also contributed an average of two to three months of full-time labor toward the implementation.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The internal deployment team consists of one project manager at a daily rate of \$368, three software developers at a daily rate of \$409, and one software architect at a daily rate of \$625.

- Initial deployment of Planning Analytics with Watson for core FP&A planning requires 90 days of full-time labor across the deployment team.
- The organization's second deployment of Planning Analytics with Watson for supply chain and operational planning requires 60 days of full-time labor across the deployment team.

deployment team and the number and types of Planning Analytics with Watson deployments across the organization's footprint.

Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$337,000.

Risks. The impact of this costs may vary based on the size, makeup, and compensation rate of the

| Internal Deployment Costs | | | | | | |
|------------------------------------|--|--------------------------------|--|-----------|--------|--------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| I1 | Number of full-time days required to deploy Planning Analytics with Watson | Composite | 90 | 60 | | |
| I2 | Number of software architects on internal Planning Analytics with Watson deployment team | Composite | 1 | 1 | | |
| I3 | Fully burdened software architect daily rate | TEI Standard | \$625 | \$625 | | |
| I4 | Number of software developers on internal Planning Analytics with Watson deployment team | Composite | 3 | 3 | | |
| I5 | Fully burdened software developer daily rate | TEI Standard | \$409 | \$409 | | |
| I6 | Number of project management FTEs on internal Planning Analytics with Watson deployment team | Composite | 1 | 1 | | |
| I7 | Fully burdened project manager daily rate | TEI Standard | \$368 | \$368 | | |
| I _t | Internal deployment costs | $I1*((I2*I3)+(I4*I5)+(I6*I7))$ | \$199,800 | \$133,200 | \$0 | \$0 |
| | Risk adjustment | ↑5% | | | | |
| I _{tr} | Internal deployment costs (risk-adjusted) | | \$209,790 | \$139,860 | \$0 | \$0 |
| Three-year total: \$349,650 | | | Three-year present value: \$336,935 | | | |

IBM PLANNING ANALYTICS WITH WATSON USER TRAINING

Evidence and data. For the interviewees' organizations, user training consisted of two primary steps. First, IBM or an IBM Business Partner trained administrators and modelers (power users), and this enabled them to customize and configure the platform, to create and modify modules and cubes, and to provide basic product support. Then these power users became the trainers for other end users

within the organization. Training times differed by user type: Power users naturally took the longest to ramp up, and read-only users who often work through a familiar spreadsheet-based interface required several hours.

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

- Read-only users require two hours of training.
- Read/write users require 40 hours of training.

- Power users require 80 hours of training.
- The average, fully burdened, blended hourly user rate of power users, read/write users, and read-only users is \$32.50.

Risks. The impact of this cost will vary based on the number and type of users as well as individual user proficiency.

Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$140,600.

| IBM Planning Analytics with Watson User Training | | | | | | |
|--|---|--------------------------------|--|-----------|----------|----------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| J1 | Number of incremental Planning Analytics with Watson read-only users | Composite | | 93 | 67 | 81 |
| J2 | Time for read-only user training required for IBM Planning Analytics with Watson (hours) | Interviews | | 2 | 2 | 2 |
| J3 | Number of incremental Planning Analytics with Watson read/write users | Composite | | 48 | 18 | 4 |
| J4 | Time for read/write user training required for IBM Planning Analytics with Watson (hours) | Interviews | | 40 | 40 | 40 |
| J5 | Number of incremental Planning Analytics with Watson power users | Composite | | 12 | 4 | 2 |
| J6 | Time for power user training required for IBM Planning Analytics with Watson (hours) | Interviews | | 80 | 80 | 80 |
| J7 | Fully burdened, blended hourly user rate | TEI Standard | | \$32.50 | \$32.50 | \$32.50 |
| Jt | IBM Planning Analytics with Watson user training | $((J1*J2)+(J3*J4)+(J5*J6))*J7$ | \$0 | \$99,645 | \$38,155 | \$15,665 |
| | Risk adjustment | ↑5% | | | | |
| Jtr | IBM Planning Analytics with Watson user training (risk-adjusted) | | \$0 | \$104,627 | \$40,063 | \$16,448 |
| Three-year total: \$161,138 | | | Three-year present value: 140,583 | | | |

REPORT DEVELOPMENT

Evidence and data. To facilitate consumption of reports for read-only users (e.g., frontline store managers and associates), the interviewees’ organizations typically dedicated several business analysts to create report templates. Although the amount of time needed to produce these templates differed by organization, interviewees said the actual build process was as simple and intuitive as using a spreadsheet and that the addition of tools such as

natural language processing (NLP) further abstracted the need for manual work.

Therefore, report development time was mostly driven by reviewing and validating internal business needs, rather than on the actual builds themselves.

Additionally, in subsequent years after developing an initial report, business analysts continued 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 assumes the following:

- The time required for the initial report build is 40 days. In each subsequent year, business analysts spend an average of 10 days modifying reports based on user needs.
- The daily salary per business analyst is \$360. Forrester assumes the overhead burden rate is 25%.

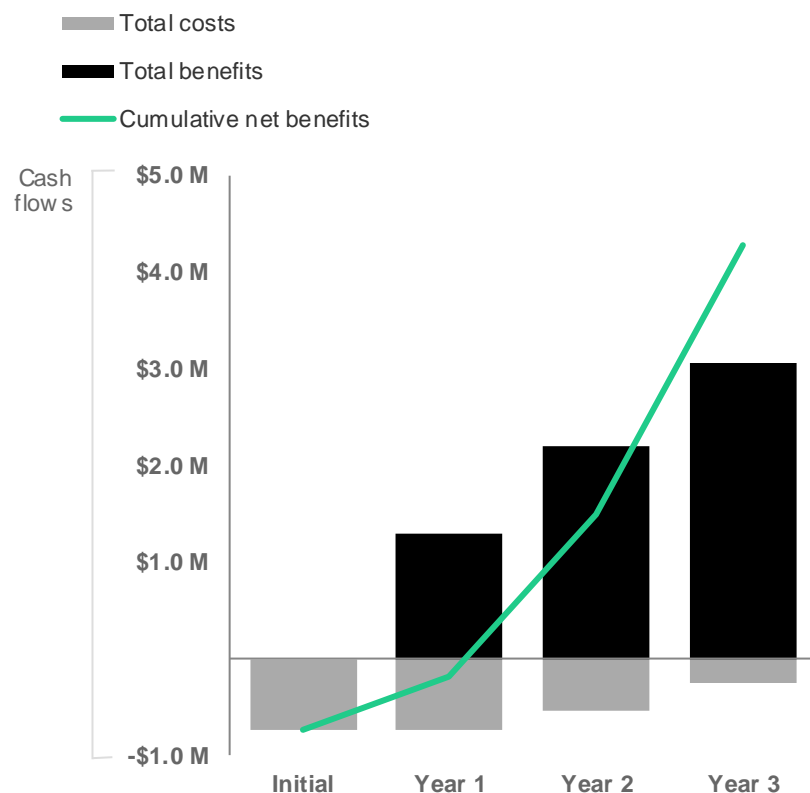
Risks. The impact of this cost may vary based on the number and complexity of reporting use cases.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$51,400.

| Report Development | | | | | | |
|-----------------------------------|--|----------------|---|---------|---------|---------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| K1 | Number of business analysts building and modifying reports | Composite | 2 | 2 | 2 | 2 |
| K2 | Time allocated to building or modifying reports (days) | Composite | 40 | 10 | 10 | 10 |
| K3 | Fully burdened daily salary per business analyst | TEI Standard | \$360 | \$360 | \$360 | \$360 |
| Kt | Report development | $K1 * K2 * K3$ | \$28,800 | \$7,200 | \$7,200 | \$7,200 |
| | Risk adjustment | ↑10% | | | | |
| Ktr | Report development (risk-adjusted) | | \$31,680 | \$7,920 | \$7,920 | \$7,920 |
| Three-year total: \$55,440 | | | Three-year present value: \$51,376 | | | |

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS



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 | (\$737,854) | (\$735,507) | (\$532,795) | (\$261,903) | (\$2,268,059) | (\$2,043,594) |
| Total benefits | \$0 | \$1,287,942 | \$2,204,277 | \$3,056,385 | \$6,548,604 | \$5,288,880 |
| Net benefits | (\$737,854) | \$552,435 | \$1,671,482 | \$2,794,482 | \$4,280,545 | \$3,245,286 |
| ROI | | | | | | 159% |
| Payback | | | | | | 14.0 |

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.

Appendix B: Endnotes

¹ Source: "Follow The Money: DOP Planning And Analytics Redefines Enterprise Performance Management," Forrester Research, Inc., March 1, 2021.

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