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The Total Economic Impact™ Of Algolia
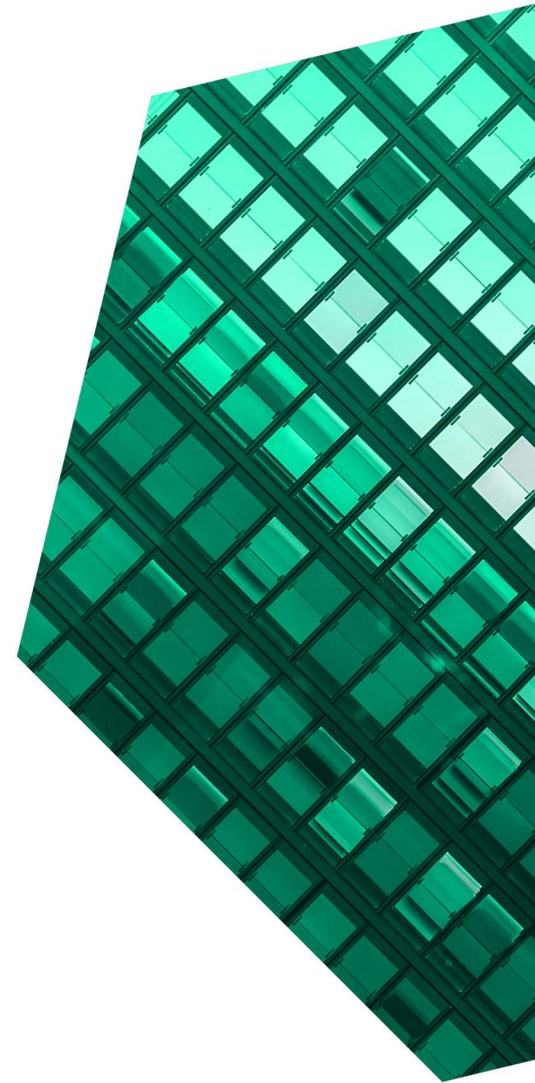
Cost Savings And Business Benefits Enabled By Algolia

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Executive Summary

The e-commerce industry is highly competitive and challenging. Companies that take a headless, component-based approach to commerce can more readily keep up with customer expectations, put their unique touches on front-end experiences, and quickly expand into new channels and markets. Algolia's search as a service via APIs simplifies search and recommendation tasks, making the experience faster, more tailorable, and more relevant to users, transforming the way retailers are able to run their businesses.

Algolia helps businesses create scalable search and discovery experiences for their sales teams and customers that are fast, relevant, and deliver better digital experiences. Algolia's API-First Search and Discovery platform empowers builders to compose experiences at internet scale to predict what customers want with fast search and create an application-browse experience that leads to more remarkable discovery. The Algolia platform is cloud-native, scalable, and flexible, which streamlines the developer experience. Algolia indexes customer content and puts it in motion, thus simplifying the search and discovery task.

Algolia commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying its search and discovery platform.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Algolia on their organizations.

KEY STATISTICS

Return on investment (ROI)
382%

Net present value (NPV)
$3.54M

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

Prior to using Algolia, the interviewees used the built-in search functions provided by their e-commerce platforms or they built their own using open-source technology. However, these solutions performed poorly where download speeds were unacceptably slow, search functionality was restrictive, customization was challenging, integration of data was difficult, and there were significant inefficiencies among developers and merchandisers with too much work being done by hand or requiring manual intervention. These limitations exposed these businesses to lost sales opportunities and customers, the delivery of poor customer experiences, and hindered their efforts to adapt and grow in a

Payback period:

<6 months

dramatically changed post-pandemic retail environment.

After the investment in Algolia, the interviewees' organizations were able to improve search speeds and serve up more relevant search results and recommendations, creating a better shopping experience and generating increased sales, which by itself justified the investment. Automation eliminated most of the manual work done by merchandisers, freeing them to work on other sales initiatives. Development on the platform was simplified with headless architecture and component-based APIs enabling new applications and sites brought to market faster.

KEY FINDINGS

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

- **Re-ranking of search results and page displays drives $859,100 in incremental revenue.** Organizations use Algolia's AI-powered search algorithms to improve the relevance of search results, resulting in higher conversion rates and incremental sales for sessions that involve search. The use of search increases, as

does the percentage of search accounting for sales.

- **Use of Algolia's recommendations drives a $1.2 million uplift in revenue.** An interviewee said their organization deployed Algolia's recommendations tool on its product pages and in its shopping cart ahead of Black Friday, and it experienced a £7 million uplift in revenue from the cart additions alone compared to with its previous solution. Additional revenue uplift comes from product page recommendations.

- **Automation of merchandising and personalization tasks saves $225,600.** Use of Algolia's Dynamic Re-Ranking leverages AI to analyze individual users' actions on digital properties and surface the most relevant content to them, whether they search or navigate. By automatically ranking the most performant content first, Dynamic Re-Ranking optimizes for both relevance and business results while reducing repetitive, manual tasks, which saves merchandisers' time, especially during peak sales periods. Tasks that used to require one FTE per week can now be done in a matter of hours. The hours saved give retailers more room

> " **It's actually one of the best investments we could've made as a company.** "
>
> — Global director of e-commerce and CRM, luxury sportwear

to maneuver in their use of the merchandising team, empowering them to work on other initiatives to drive sales, and the automation of tasks had the additional benefit of enabling one interviewee's retail organization to maintain conversion rates throughout those peak periods, which is something it hadn't been able to do before.

- **Algolia's platform enables the transition toward a headless architecture and streamlined digital experience development, saving $1.6 million.** Interviewees' organizations were able to take advantage of Algolia's robust API libraries saved significant time building out search- and recommend-related features and applications after switching to Algolia. Developers to build projects in a fraction of the time taken previously.

- **Algolia's API First Search and Discovery platform eliminates nearly all maintenance costs, saving $549,000.** Algolia's platform makes prior maintenance tasks irrelevant, which reduces the time spent on management and maintenance from two FTEs to a small fraction of that amount.

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

- **Fast search improves in-store, hybrid retail, and mobile experience.** Interviewees from retailers using Algolia search for in-store sales applications said associates were able to perform searches more successfully and be more productive, they were able to spend more time with their clients, and they delivered better in-store experiences. This benefit extends to online shoppers experiencing faster page loads, which is especially important to mobile customers.

- **Merchandisers are able to complete tasks previously done by development teams.** Using Algolia's Visual Editor enables merchandisers to

set up and manage rules in an intuitive and easy manner with simple drag-and-drop functionality.

- **Federated Discovery enables developers to pull in content from multiple data sources and index them at the same time, allowing retailers to present a variety of results to consumers in a single, unified interface.** Interviewees said Algolia's taxonomy and data schema are easy to work with and that they are able to blend data from across the business to improve search algorithms.

> **"It's a great search engine, but it's way more than that. For me, it's a user-friendly platform to build catalogs from scratch."**
>
> *Head of product content and media, luxury goods*

- **User-friendly analytics provide insights more immediately.** Two interviewees said their retail organizations used Algolia's analytic capabilities to gain insights into customer behavior they could act on to improve sales. One interviewee said the tool was more useful because of its useability and ease of use compared to other analytic tools.

- **Algolia reduces workloads on other systems.** By allowing Algolia to populate collection pages and serve product information driving search, retailers are able to shift processing tasks off of their shopping platforms.

- **Algolia's platform holds up during peak shopping periods.** Interviewees remarked on the platform's strong performance and reliability under peak loads. One interviewee said the platform received 17,000 search requests per second during one Black Friday period and that it held up fine.

- **Algolia provides great customer service and account management.** Interviewees called out the Algolia customer success and account management teams, which are support functions included in the base contract. These teams work to understand the organizations' goals and needs, provide guidance on implementing Algolia functionality, and share best practices.

Costs. For the composite organization, risk-adjusted PV costs over three years come to $926,500, including implementation and licensing costs, ongoing maintenance, and enhancements. Interviewees said their organizations incurred no external training or professional services costs. Algolia uses a subscriber model in which users pay

as they go based on the number of search and recommend requests in a given month.

The decision-maker interviews and financial analysis found that a composite organization experiences benefits of $4.47 million over three years versus costs of $926,500, adding up to a net present value (NPV) of $3.54 million and an ROI of 382%.

> " **If I had to make the decision again, I'd do it even faster than I did the first time. I love the tech, I love the product, and all of the people that I get to interact with are top-notch.** "
>
> — Director of digital product and experience, luxury menswear

ROI
382%

BENEFITS PV
$4.47M

NPV
$3.54M

PAYBACK
<6 months

Benefits (Three-Year)

Incremental revenue uplift from re-ranking search	$859.1K
Incremental revenue uplift from upselling recommendations	$1.2M
Merchandiser time savings from automation	$225.6K
Developer time savings building new apps	$1.6M
Developer time savings on maintenance	$549.0K
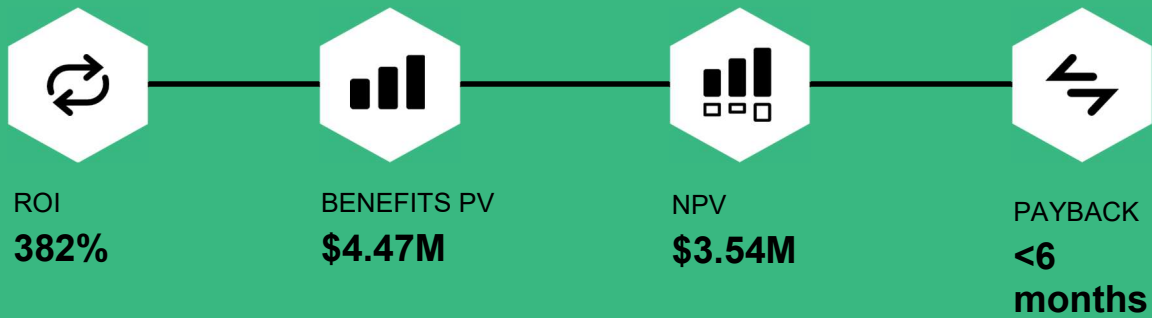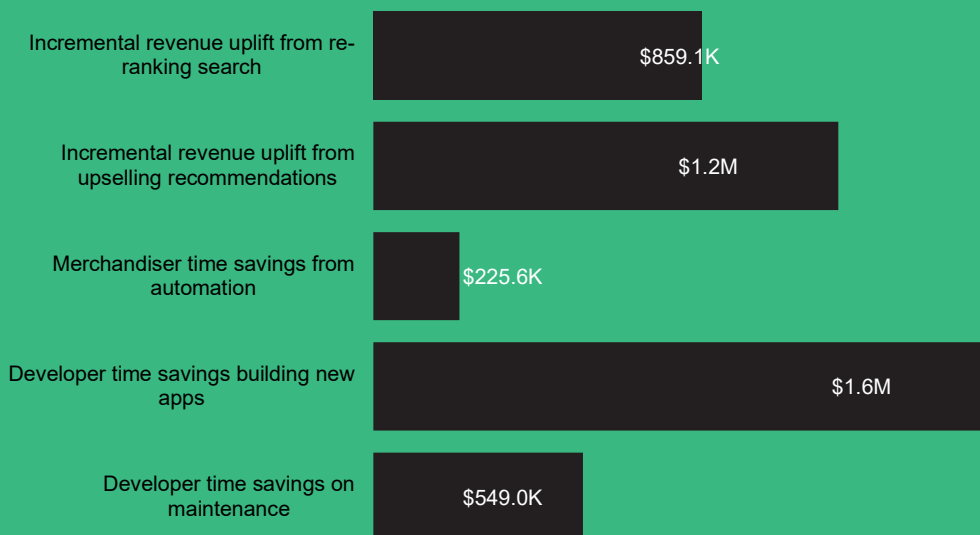
" **There's something very addictive, something really positive about using [Algolia] that makes the business want to do more with them. It's like a fly-wheel effect.** "

— Director of digital product and experience, luxury menswear

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 Algolia.

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 Algolia can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Algolia 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 Algolia's search and recommend APIs.

Algolia 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.

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

DUE DILIGENCE
Interviewed Algolia stakeholders and Forrester analysts to gather data relative to its search and recommend solution.

DECISION-MAKER INTERVIEWS
Interviewed four decision-makers at organizations using Algolia 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 Algolia Customer Journey

Interviewed Decision-Makers			
Interviewee	**Retail Sector**	**Region**	**Revenue (percent e-commerce)**
Head of product content and media	Luxury goods	Global	$5B to $10B (<25%)
Product manager service layer	Fitness apparel	Global	$500M to $750M (~100%)
Director of digital product and experience	Luxury menswear	North America	$500M to $750M (20% to 25%)
Global director of e-commerce and CRM	Luxury sportwear	Global	$100M to $250M (20% to 25%)

KEY CHALLENGES

The interviewees are with retailers adjusting to rapid expansion of e-commerce, which accelerated even faster due to changing shopping behaviors as a result of the pandemic. Three of the four interviewees' organizations had long, rich histories in brick-and-mortar retail, but they were newer to e-commerce. The other interviewee's organization is a pure e-commerce player planning its first physical store. Prior to adopting Algolia, the organizations used the built-in search functions provided by their e-commerce platforms or they built their own using open-source technology.

The interviewees noted how their organizations struggled with common challenges, including:

- **Faster search for better digital experience.** One interviewee said slow download speeds for their retailer's in-store apps threatened its reputation for high-touch service. Another interviewee noted the added complexity of in-store search, which needs to take in-store inventory into consideration along with size, color, style, etc. Sales associates literally have their hands full locating products for customers in real time. Each minute lost to navigating what can be a vast product catalog degrades the shopping experience.

> **"The faster and more accurate you deliver on search, the better the experience in-store. For this generation, it is horrible to have a salesperson looking for information on their phone for, like, 10 minutes and not talking to you as a client. It is a disaster."**
>
> *Head of product content and media, luxury goods*

- **Prior search tools that were too restrictive and unable to influence results.** Interviewees described having their hands tied in terms of being able to configure and customize search results for specific use cases. Searches were unable to filter on specific fields in the product record while ignoring others, returning irrelevant items in the searches. Commenting on their organization's previous tool, a product manager service layer at a fitness apparel retailer said: "We weren't able to influence the results very much. It wasn't configurable. It worked to some degree out of the box, and that was the end of it. We couldn't really do anything with it beyond what it was set up to do out of the box."

- **Highly localized search capabilities.** Three of the four interviewees' retailers operate in multiple countries, so searches have to reflect local languages and terminologies, including recognition of synonyms and tolerance for unconventional spellings and typos.

- **Too much manual labor required for merchandising.** Interviewees noted a lot of time spent on repetitive tasks related to merchandising. This was especially the case during sales events like Black Friday periods when merchandisers worked around the clock to re-sort product listings based on rapidly shifting inventory levels.

> **"We desperately needed a better way of merchandising. Our e-commerce platform's merchandising capabilities are basic. We want to do a bit more."**
>
> *Product manager service layer, fitness apparel*

- **Ability for rapid development in a fast-changing, fast-growing retail environment.** The retail industry — especially e-commerce — is highly competitive. Each of the interviewees' organizations were challenged to continually improve upon customer experiences, both in-store and online, while simultaneously expanding into new channels and markets with the development resources they had.

- **Ability to host and harmonize large amounts of non-standardized data.** One interviewee's retailer that was relatively new to e-commerce struggled with a siloed legacy organization with no prior standardization of product data. Because it operated in more than 40 countries, product data also had to be translated and adapted to each market.

- **Out-of-hand total cost of operations (TCO).** One interviewee said the development costs for maintaining prior solutions were spiraling out of control for their organization. It was in a constant reactive state and fixing performance leaks while being unable to deliver the kinds of experiences the organization wanted for its customers. When the COVID-19 pandemic hit and all of its stores closed, the organization became a pure-play online retailer overnight and realized it had to move off its tech stack just to get by. Commenting on their organization's previous solution, a director of digital product and experience at a luxury menswear retailer said, "The amount of development we had to pour into it was just so expensive, and we were always in reactive mode."

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that:

- Was easy to use, easy to manage, and didn't require a lot of developers or a complicated technology stack.

- Could pull together a large amount of information from multiple sources.

- Could use easy-to-exploit APIs to build and deploy applications quickly.

- Enabled search, product catalog and content management independent of the store.

- Could automate merchandising capabilities.

- Could improve the customer experience and increase sales while reducing TCO.

- Supported a wider strategy toward headless architecture for e-commerce overall.

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 global, multibillion-dollar retail organization provides sales, customer support, and service/warranty support for its consumer products. The organization has a strong brand, global operations, a growing customer base, and a strong online and offline presence. Customers visit the company's retail stores in more than 50 countries, and they search for the company's products on the website from their desktops/laptops or on their handheld mobile devices. Website visitors perform 200 million searches annually.

Deployment characteristics. A digital experience team of eight developers supports 20 merchandisers spread across three continents. The organization provides search capabilities on its website (desktop and mobile), in the mobile app, and on in-store workstations and mobile devices for sales associates.

The organization subscribes to Algolia's premium-level service for Search and Recommend and takes advantage of as much of Algolia's functionality as it can, including its rules engine for multi-indexes management, search and recommend APIs, search and event analytics, A/B testing, dynamic re-ranking and synonym suggestions, relevant sort and personalization, and Visual Editor for merchandising.

> **"Of all the third-party, off-the-shelf solutions out there, we felt Algolia was the best mainly because [it was] very committed to API-first, headless platform."**
>
> *Product manager service layer, fitness apparel*

Key assumptions
- **Global retail organization specialized in apparel**
- **$1 billion annual revenue**
- **50% e-commerce/50% brick and mortar**
- **Retail operations in 50+ countries**
- **Website visitors perform 175 million searches and 60 million recommendation requests**
- **8 developers support 20 merchandisers**

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	Incremental revenue uplift from re-ranking search	$315,000	$346,500	$381,150	$1,042,650	$859,091
Btr	Incremental revenue uplift from upselling recommendations	$446,250	$490,875	$539,963	$1,477,088	$1,217,045
Ctr	Merchandiser time savings from automation	$90,720	$90,720	$90,720	$272,160	$225,607
Dtr	Developer time savings building new apps	$650,654	$650,654	$650,654	$1,951,961	$1,618,080
Etr	Developer time savings on maintenance	$220,750	$220,750	$220,750	$662,250	$548,973
	Total benefits (risk-adjusted)	$1,723,374	$1,799,499	$1,883,236	$5,406,109	$4,468,796

INCREMENTAL REVENUE UPLIFT FROM RE-RANKING SEARCH

Evidence and data. Interviewees' organizations used Algolia's ranking algorithms to improve the relevance of search results, resulting in higher conversion rates and incremental sales for sessions that involved search. The use of search or "searchandising" increased, as did the percentage of search accounting for orders. Searchandising comprises a discovery journey that could begin with the consumer searching or browsing and navigating or receiving recommendations. Searchandising can include both intent-active signals (ready to buy) or intent-passive signals (just learning) and anything in-between. A/B testing of re-ranking on collection pages confirmed a measurable commercial impact.

- Interviewees' organizations measured 40% to 50% increases in the use of search, especially by mobile customers. A director of digital product and experience for a luxury menswear retailer said, "Once we re-platformed to Algolia, the number of sessions that did search online doubled."

- One interviewee discussed the A/B testing their organization conducted on Algolia's ranking algorithms that compared sales for products that Algolia put in the top position against what their merchandising teams picked. A test in one product category drew 3.4 times more clicks and generated a 6% uplift in revenues, while a second test in another category drew 2.4 times more clicks and grew revenues in that category from 3.9% to 15%. This interviewee estimated a £4 million annual revenue uplift across all collection pages due to re-ranking.

- Another interviewee said using Algolia's dynamic re-ranking functionality measured a 10% increase in conversion in the initial test and was able to maintain the higher rate through subsequent sales periods. This retailer measured an 8.5% increase in revenue as a result of the improved search experience.

- Interviewees valued the ability to introduce additional attributes into ranking algorithms to shape and personalize the search experience even further for product inventory levels, insight

about products selling well in-store, and size and color preferences based on shoppers' purchase histories. One interviewee's retailer adjusted search algorithms for shoppers new to the site to prioritize on products with lower return rates, to improve the chances of a more successful experience with those products. A director of digital product and experience for a luxury menswear retailer said their organization sent inventory depth into Algolia's custom ranking attributes for its sales page, which allowed it to surface items that had a higher likelihood of being in that customer's size. The interviewee said their organization's sales page was one of the most heavily trafficked pages, but that its previous solution couldn't deliver an experience in which customers were consistently presented with products in their size. The interviewee said, "[With Algolia,] our offline informs our sales page of inventory breadth and depth, so that before you land on a page, we only surface up the items that have the highest likelihood of your size."

- Interviewees noted that their organizations' merchandising teams looked at analytics quite a bit to learn from searches that failed to return results and make adjustments to improve conversion rates.

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization.

- The composite's annual e-commerce revenues are $500 million and grow 10% annually.

- The organization experiences a 1% revenue uplift from re-ranking.

Risks. Risks that could impact the realization of this benefit include:

- The number of website visitors, average order size, and conversion rate.

- The organization's ability to effectively use Algolia's search capabilities, including use of analytics, synonyms, personalization, and A/B testing, to refine shoppers' search experiences to greatest effect.

Results. To account for these risks, Forrester, adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $859,100.

Incremental Revenue Uplift From Re-Ranking Search					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	E-commerce revenue (10% annual growth)	Composite	$500,000,000	$550,000,000	$605,000,000
A2	Percent revenue uplift from re-ranking	Interviews	1%	1%	1%
A3	Margin	TEI Standard	7%	7%	7%
At	Incremental revenue uplift from re-ranking search	A1*A2*A3	$350,000	$385,000	$423,500
	Risk adjustment	↓10%			
Atr	Incremental revenue uplift from re-ranking search (risk-adjusted)		$315,000	$346,500	$381,150
Three-year total: $1,042,650			Three-year present value: $859,091		

INCREMENTAL REVENUE UPLIFT FROM UPSELLING RECOMMENDATIONS

Evidence and data. One interviewee said their retailer introduced Algolia's recommendations tool on product pages and in the cart ahead of a Black Friday sales period after initial tests demonstrated strong performance. The interviewee noted more customers interacted with recommendations, both in the cart and on product pages, and realized a revenue uplift of £7 million from the higher cart additions on the product pages alone compared to the previous solution.

> **"On the product pages alone, Algolia outperforms the previous solution to the tune of about £7 million a year. There was no change in UI. It was visually identical. It was just based on the quality of the recommendation."**
>
> *Product manager service layer, fitness apparel*

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- The composite's annual e-commerce revenues are $500 million and grow 10% annually.

- The organization experiences a 1.5% revenue uplift from upselling recommendations.

Risks. Risks that could impact the realization of this benefit include:

- The number of website visitors, average order size, and conversion rate.

- The organization's ability to effectively use Algolia's recommend capabilities, including use of personalization to suggest more relevant product options, based on customers' shopping and browsing histories, as well as general insights such as popular products in the shoppers' ZIP code at that time of year.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $1.2 million.

Incremental Revenue Uplift From Upselling Recommendations					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	E-commerce revenue (10% annual growth)	Composite	$500,000,000	$550,000,000	$605,000,000
B2	Percent revenue uplift from upselling	Interviews	1.5%	1.5%	1.5%
B3	Margin	TEI Standard	7%	7%	7%
Bt	Incremental revenue uplift from upselling recommendations	B1*B2*B3	$525,000	$577,500	$635,250
	Risk adjustment	↓15%			
Btr	Incremental revenue uplift from upselling recommendations (risk-adjusted)		$446,250	$490,875	$539,963
Three-year total: $1,477,088			Three-year present value: $1,217,045		

MERCHANDISER TIME SAVINGS FROM AUTOMATION

Evidence and data. Automation of merchandising tasks saved considerable time both during major sales events and outside of those events, and the hours saved gave retailers more room to maneuver in their use of the merchandising teams, which empowered them to work on other initiatives to drive sales. The automation of tasks had the additional benefit of enabling one interviewee's retailer to maintain conversion rates throughout those peak periods, which is something it hadn't been able to do before.

- That retailer connected a data workflow management tool to Algolia, inputting stock and sales data every 30 minutes to automate what the merchandising team used to do manually during Black Friday periods. The interviewee, a product manager service layer for a fitness apparel retailer, described the impact of depleted product inventories during those peak sales periods as follows: "Pre-Algolia, when the trading team was merchandising everything manually, they were working more or less around the clock for a week or two. When they went offline, we'd see a quick drop-off in conversion rate because products that got sold out were still prominent in the search. And when they dealt with it the next morning, conversion rates went back up. We didn't see that at all for the last two Black Friday periods, [and it was the] same for the summer clearance periods."

- A global director of e-commerce and CRM at a luxury sportwear retailer said their organization reduced the time spent manually ranking products from five days a week down to six hours.

  The interviewee said: "Before, we worked five days a week just to keep sorting the product: two days to manually rank it, two more days to extract the inventory and make a prediction model for the

> **"Whereas they [the trading team] were working around the clock before, it's set up in advance. You intervene when necessary, rather than continually solving problems throughout the period. It saved a huge amount of time."**
>
> *Product manager service layer, fitness apparel*

week, and one more day for any last-minute adjustments. Now, with Algolia, we can rank all of the products in all of the store views within a day." The interviewee noted that their organization still performs a small amount of manual intervention to sync up products on top of categories with its promotions, but the time involved is less than 6 hours per week for one individual. The hours saved through automation freed up merchandisers to work on other initiatives to drive sales. The interviewee said, "The hours saved have been used to double newsletter output, and our sales rose due to the increased traffic brought on by the newsletters."

> **"Business users feel energized by Algolia. Algolia can do really cool things for your search. It is not a black box. It has all kinds of features, and anybody who we interact with at Algolia knows their stuff and they care about our business. When we talk to them, any interaction we have with Algolia, it just makes us want to do more with it."**
>
> *Director of digital product and experience, luxury menswear*

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- The composite organization employs 20 merchandisers responsible for e-commerce, and it holds two major sales events annually.

- Before Agolia, the entire merchandising team put in 16-hour days for the two weeks preceding and encompassing the event.

- With Algolia, the team spends an average of 4 hours per day on merchandising activities during the two-week course of the event.

- Outside of those two major sales events, and before Algolia, sorting and ranking products required the equivalent of one FTE per week.

- After Algolia, time spent sorting and ranking products is reduced to 6 hours per week.

Risks. Risks that could impact the realization of this benefit include:

- The size and fully loaded compensation of the merchandising team responsible for e-commerce and the time and effort devoted to merchandising activities during and outside of sales events.

- The number and duration of major sales events held during the course of a year.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $225,600.

Merchandiser Time Savings From Automation					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Size of merchandising team	Composite	20	20	20
C2	Number of major sales events per year	Composite	2	2	2
C3	Hours per person spent manually merchandising during major sales events before Algolia	Interviews	160	160	160
C4	Hours per person spent merchandising during major sales events after Algolia	Interviews	40	40	40
C5	Percent of time saved applied to additional work	Assumption	25%	25%	25%
C6	Subtotal: Hours per year saved during major sales events	(C1*C2)*(C3-C4)*C5	1,200	1,200	1,200
C7	Hours per year spent manually merchandising outside of major sales events before Algolia	Interviews	1,920	1,920	1,920
C8	Hours per year spent merchandising outside of major sales events after Algolia	Interviews	288	288	288
C9	Percent of time saved applied to additional work	Assumption	50%	50%	50%
C10	Subtotal: Hours per year saved outside of major sales events	(C7-C8)*C9	816	816	816
C11	Total hours saved	C6+C10	2,016	2,016	2,016
C12	Fully burdened hourly compensation for merchandiser	TEI Standard	$50	$50	$50
Ct	Merchandiser time savings from automation	C11*C12	$100,800	$100,800	$100,800
	Risk adjustment	↓10%			
Ctr	Merchandiser time savings from automation (risk-adjusted)		$90,720	$90,720	$90,720
Three-year total: $272,160		**Three-year present value: $225,607**			

DEVELOPER TIME SAVINGS BUILDING NEW APPS

Evidence and data. Interviewees told Forrester their organizations saved significant time developing search- and recommend-related features and applications after switching to Algolia. Because Algolia uses a headless architecture, digital experience developers were able to exploit API libraries to build projects in a fraction of the time taken previously.

- One interviewee estimated that major projects that would have taken 10 months now take only

three months, and shorter projects that would have taken three months to push out were able to be completed in two to three weeks. This interviewee's team was tasked with building mobile apps for use by in-store sales associates. When they started working on the apps, they realized the data hosting requirements could not be handled by a traditional sales platform, especially given the need to localize the content for international markets. They found Algolia to be an ideal technical stack for hosting and sharing data. Within a matter of days, they were able to pull product data from different sources

into a single channel and build a front on top of it. In the early phase of the COVID-19 pandemic, the organization was able to launch retail apps in 33 countries within a two-week period to stay close to clients.

> **"Without Algolia, I don't think I would have been able to do it. It was not the strategy at the time, but it turned out to be the best moment to invest and expand, and it was a real success."**
>
> *Head of product content and media, luxury goods*

- A product manager service layer at a fitness apparel retailer said that developing on the Algolia platform is simplified thanks to its headless architecture. The interviewee described struggling with their organization's previous recommendations solution because it wasn't API-driven. They said: "It became a fairly contentious issue to stop it conflicting with other things. We realized it would take less work to onboard Algolia for this solution than it would to fix the problem, because it works with the exact same data scheme, and all of the front-end elements were already built to work with the data structure. We had proof of concept within two days, and it took two developers a couple weeks to get it into production. With Algolia, the developer experience has been much better."

- Interviewees said Algolia continues to invest in product improvements and enhancements. One interviewee said using the merchandising tool, Visual Editor (recently added to Search) saved the effort of sourcing a new tool to replace their organization's old one.

> **"Developers like working with Algolia because the documentation is good. APIs work the way they're supposed to, [and] code libraries are comprehensive. When we need to onboard something, it typically goes well from a technical standpoint."**
>
> *Product manager service layer, fitness apparel*

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- The composite organization has eight developers on the team supporting the company's digital experience, and it works on two major projects each year.

- Before Algolia, these projects took six months to complete on average.

- With Algolia, they take one-third of that time at a little less than two months.

Risks. Risks that could impact the realization of this benefit include:

- The size and fully loaded compensation of the development team assigned to improving digital experience for the organization.

- The number and size of search- and recommend-related development projects the organization wishes to complete in a given year.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $1.6 million.

Developer Time Savings Building New Apps

Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Number of developers involved in building new apps	Composite	8	8	8
D2	Number of projects per year	Composite	2	2	2
D3	Duration of project before Algolia (months)	Interviews	6	6	6
D4	Duration of project after Algolia (months)	Interviews	1.8	1.8	1.8
D5	Total months saved	D1*D2*(D3-D4)	67.2	67.2	67.2
D6	Percent of time saved applied to additional work	Assumption	75%	75%	75%
D7	Fully burdened monthly compensation for developer	TEI Standard	$15,188	$15,188	$15,188
Dt	Developer time savings building new apps	D5*D6*D7	$765,475	$765,475	$765,475
	Risk adjustment	↓15%			
Dtr	Developer time savings building new apps (risk-adjusted)		$650,654	$650,654	$650,654
	Three-year total: $1,951,961		**Three-year present value: $1,618,080**		

DEVELOPER TIME SAVINGS ON MAINTENANCE

Evidence and data. Interviewees told Forrester Algolia's search and recommend solution required virtually no maintenance compared to prior solutions.

- A global director of e-commerce and CRM for a luxury sportwear retailer said that before deploying code, their organization had to take down the site and put in a temporary page at least once per week for a half hour during roughly 30 to 40 hours per year. They said, "Algolia makes that irrelevant now."

- Another interviewee confirmed their organization was able to manage ongoing maintenance with a single product owner working part time, whereas another solution would have required three technicians working full time to maintain the platform.

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- Two developers are required to manage the prior search and recommend solution full-time.

- After Algolia, maintenance is reduced to one developer working a half day per week.

Risks. Risks that could impact the realization of this benefit include:

- The effort needed to maintain the prior search and recommend solution.

- The fully loaded compensation of developers responsible for maintenance.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $549,000.

> **"With Algolia, we don't need a huge team for ongoing maintenance. We are stable, and we have no issues. We don't need to manage infrastructure or manage incidents. You pay for Algolia, and you're pretty sure you will never have any problem. The more we can rely on SaaS (software-as-a-service) platforms that are stable, the better it is for us."**
>
> *Head of product content and media, luxury goods*

Developer Time Savings On Maintenance

Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Number of developers maintaining search solution before Algolia	Interviews	2	2	2
E2	Number of developers maintaining search solution after Algolia	Interviews	10%	10%	10%
E3	Percent of time saved applied to additional work	Assumption	75%	75%	75%
E4	Fully burdened annual compensation for developer	TEI Standard	$182,250	$182,250	$182,250
Et	Developer time savings on maintenance	(E1-E2)*E3*E4	$259,706	$259,706	$259,706
	Risk adjustment	↓15%			
Etr	Developer time savings on maintenance (risk-adjusted)		$220,750	$220,750	$220,750
	Three-year total: $662,250			Three-year present value: $548,973	

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- **Fast search improved in-store, hybrid retail and mobile experience.** Interviewees from retailers using Algolia search for in-store sales applications said associates were able to perform searches more successfully. This allowed them to be more productive, able to spend more time with their clients, and able to deliver better in-store experiences.

  A global director of e-commerce and CRM at a luxury sportwear retailer said this benefit extended to online shoppers. They said: "Algolia is faster because everything is through index. It can do searches in real time without any delay. We have seen a decrease of 7% in page-load time over the last few months. The impact of faster page loads is difficult to measure, but at the very least, it is a better perceived experience by customers — especially mobile customers with 3G or 4G service. Seventy percent of our revenue comes from mobile customers. Even if I cannot measure it, it's a good bonus anyway."

- **Merchandisers were able to complete tasks previously done by development teams.** Algolia's Visual Editor enabled merchandisers to set up and manage rules in an intuitive and easy manner with simple drag-and-drop functionality. This user-friendly interface was easy for merchandisers to work with directly, shifting workload away from digital experience developers. A product manager service layer for a fitness apparel retailer explained how their organization's training team was able to take on a load of capacity previously carried by the developer team after shifting to Algolia. They said: "Two years ago, they would have had to get

development resources to do things. Now, if they want to change weighting of different attributes in the search algorithm [or] change the way particular collections and merchandise work, this is all stuff they can get in and now do without using our development resources."

- **Federated discovery enabled developers to pull in data from multiple data sources and index them at the same time, which allowed retailers to present a variety of results to customers in a single, unified interface.** Interviewees said they found Algolia's taxonomy and data schema easy to work with. A product manager service layer at the fitness apparel retailer explained: "We can put whatever we want in a record, which allows us to be flexible, able to pull from anywhere in the business and blend it in Algolia. At different times of the year, we change how re-rankings are weighted to adjust to changes in customer behavior. We're able to override very easily to let other considerations drive how we do things."

  Similarly, a director of digital product and experience at a luxury menswear retailer described how their organization uses Algolia's ability to blend data from across the business to increase sales. They said: "We've got an analytics team that analyzes the whole business and is able to rank products based on popularity across channels. They take that analysis and send it into Algolia so that web searches are influenced by those attributes. How products perform online is only part of the business. Something may perform poorly online because it's only been published for two weeks, but maybe that product is selling like hotcakes in the store. So, in that scenario, we can leverage offline sales data and give the product greater visibility online. We're trying to ensure that things

sell well in the business holistically regardless of sales channel. If we didn't have that fast offline data coming online, your results are skewed, and you may not be able to sell through things at as fast a turnover as possible."

- **User-friendly analytics provided insights more immediately.** Two of the interviewees said their retailers used Algolia's analytics capabilities to gain insights into consumer behavior they could act on to improve sales. A global director of e-commerce and CRM for a luxury sportswear retailer said: "It's more useful because it's more usable than other analytics tools we use. I could have achieved the same results [using another tool], but Algolia made it easier, more natural. It gives you a different perspective and more immediately. I wouldn't have gotten it as fast using the other tool."

> **"The trading team use analytics quite a bit, looking at searches that are not returning results to see if there's anything we can learn about what our customers are looking for that we're not providing."**
>
> *Product manager service layer, fitness apparel*

- **Algolia reduced workload on other systems.** A product manager service layer of a fitness apparel retailer said: "We took a load off our shopping platform, not using it to populate collection pages or serve product information or drive search. If the licensing for that platform was based on usage, we would have saved money for sure."

- **Algolia's platform held up during peak shopping periods.** Interviewees remarked on the platform's strong performance and reliability under peak loads. A product manager service layer at a fitness apparel retailer said: "At one

point last Black Friday, we were sending Algolia 17,000 requests per second, and it held up. Typically, we get 300,000 users a day — maybe 400,000 if we have new products."

- **Algolia provides great customer service and account management.** Interviewees praised the Algolia customer success and account management teams, which are support functions included in the base contract. These teams worked to understand interviewees' goals and needs, provided guidance on implementing Algolia functionality, and shared best practices. A director of digital product and experience at a luxury menswear retailer spoke of Algolia's team this way: "They're engaged with our accounts. They truly are. I think of them truly as partners. They are co-invested in our success. Effectively, they are a fly on the wall in the conversations we have. Even with these A/B tests, we'll meet with them and say, 'Hey, look at the results of the most recent ones. Let's chart out a strategy for the next upcoming ones.' They organize with us, which is effective. They definitely accelerated where we plot ourselves along the Algolia maturity curve."

FLEXIBILITY

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

- **Extending search to other products (e.g., Algolia Recommend) and adding new features.** Each of the interviewees said their organization plans to expand the use of Algolia and experiment with additional data streams such as purchase history and new features such as voice-enabled search for in-store (clientelling) applications, adding other languages to serve additional markets, and looking to add search to website content and other customer touchpoints such as content search to reduce customer

service representative (CSR) hours spent answering routine inquiries from customers.

A director of digital product and experience at a luxury menswear retailer told Forrester: "Algolia, to boil it down to its most simple explanation, is a high-performance search index for anything. In an e-commerce context, it's products but also customers, and next we're going to do editorial context and, after that, purchase history. We can leverage Algolia to surface up all this complicated data like purchase history. We already have the foundation in place. All we need to do is send the data up. These use cases, which are important for customer engagement, Algolia can service quite well. They were not part of the initial set of use cases, which drove our decision to sign with [Algolia], yet here we are. We have a partner that can do this. It's quite refreshing."

> **"We realized a while ago that one of the biggest drivers of retention is the first product someone buys from us. If you buy a product that you are really thrilled with, you've got a much higher chance of ordering again than if you bought a product that has a really high rate of return for whatever reason. We're looking at setting up a different set of rules for people who have never bought from us before, to try and stay toward products that have really low returns."**
>
> *Product manager service layer, fitness apparel*

- **Expanding and tailoring use of recommendations.** Interviewees also spoke of expanding and refining Algolia's recommendations feature based on insights drawn from analytics. A head of product content and media at a luxury goods retailer said, "We

are working toward that." And a product manager service layer at the fitness apparel retailer noted: "We've got a load of changes we want to make. There will be continuous improvement in things we do [and] optimizing how we use Algolia Recommend. That's going to be ongoing for the next six to 12 months."

> **"[Algolia] employs a lot of really smart people who are doing cutting-edge stuff. They've got [people] who are working on voice, [and people] who are working on intent as opposed to semantics search. [It's] really next-level stuff."**
>
> *Director of digital product and experience, luxury menswear*

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**
Ftr	Software license fees	$0	$231,000	$275,000	$335,500	$841,500	$689,339
Gtr	Implementation and enhancement costs	$209,594	$0	$17,466	$17,466	$244,527	$237,152
	Total costs (risk-adjusted)	$209,594	$231,000	$292,466	$352,966	$1,086,027	$926,491

SOFTWARE LICENSE FEES

Evidence and data. Algolia uses a subscriber model where users pay as they go based on the number of Search and Recommend requests in a given month. There are standard and premium packages for Search, and a single pricing package for Recommend. Access to Algolia's API libraries, training and documentation is included, and interviewees said Algolia's customer success team was on hand to provide advice on structuring the data to be migrated onto the platform.

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- The organization subscribes to Algolia's premium-level service for Search, and it also subscribes to Recommend.

- Website visitors perform 175 million searches and 60 million recommendation requests the first year, with the number of requests growing 20% annually thereafter.

Risks. Licensing costs can vary based on.

- The number of Search and Recommend requests experienced in a given month, which can vary widely during the course of a year.

- Volume discounts for higher numbers of Search requests, starting at 10,000 requests per month.

- Committed-use discounts available for annual or multi-year commitments.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $689,300.

Software License Fees						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Premium level service	Composite		$210,000	$250,000	$305,000
Ft	Software license fees	Algolia	$0	$210,000	$250,000	$305,000
	Risk adjustment	↑10%				
Ftr	Software license fees (risk-adjusted)		$0	$231,000	$275,000	$335,500
	Three-year total: $841,500			Three-year present value: $689,339		

IMPLEMENTATION AND ENHANCEMENT COSTS

Evidence and data. Interviewees said Algolia was easy to implement. Because Algolia handled most of the back-end heavy lifting and provided comprehensive front-end libraries, most of the work was usually to redesign and rethink the user experience of a website or application. The biggest piece of work involved preparing the data for migration. Data preparation efforts ranged from 15 days to four months, given the different sizes and complexities of the interviewee's organization and the level of sophistication of the team managing the deployment. Moving the data into Algolia took anywhere from 20 days to one month, followed by testing to ensure confidence in the solution.

- A global director of e-commerce and CRM at a luxury sportwear retailer said: "It was mostly me and the systems integrator. I have a technical background, so I decided to move it myself. I wanted to be 100% sure that the technical integration was made as simple as it could be to avoid trouble with indexes and indexing."

- A product manager service layer at a fitness apparel retailer characterized their organization's deployment as a pretty quick process that took four front-end developers about six weeks to execute. However, they ended up migrating a

second time six months in, as they realized that the way they had structured data was preventing them from taking advantage of certain features. The interviewee said: "The rework took a lot of planning. We did a lot of work to make sure we got the schema right. It actually took just a week or two of mostly one person's time. We've been fine ever since."

- Costs for ongoing maintenance are minimal. A head of product content and media at a luxury goods retailer said: "It's a SaaS platform [and] super stable. I had one incident a year and a half ago, and Algolia managed to solve it within one day just with localizing the data. [There was] no other intervention. [It was] just Algolia putting the system back on track. Typically, it's pretty stable and reliable."

  A product manager service layer for a fitness apparel retailer said: "For the most part, it just kind of runs itself. We only incur costs and time when we want to do something new or add something. There's no sort of overhead. We do incur development costs, but it's just the work we're trying to do."

- Interviewees' organizations incurred no external training costs. Algolia provided training materials through Algolia Academy. Interviewees said the

course material was good and that the documentation was excellent. A director of digital product and experience at a luxury menswear retailer said, "[The materials were] written for normal human beings, which is really refreshing."

- Interviewees estimated that developers and business users were able to start working with Algolia within one week. A global director of e-commerce and CRM for a luxury sportswear retailer said Algolia was straightforward to use. They said: "I have an intern who has been with us 10 days. I saw her sorting Algolia, so she's already picking it up."

> **"They were very supportive, ensuring that we were really getting off the ground running as fat as possible and as effectively as possible."**
>
> *Director of digital product and experience, luxury menswear*

Modeling and assumptions. Based on customer interviews, Forrester assumes the following for the composite organization:

- The composite organization does not incur outside professional services or training costs to utilize Algolia.

- Algolia's customer success team provides advice on how to best structure the data for API integration and tool use.

- After implementation, one developer works with the Algolia team for four weeks every year to support the introduction of new search and recommend features.

Risks. The cost can vary based on.

- The size and scope of the deployment across business units and geographies.

- Integration requirements with other data streams and tools.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of $237,200.

Implementation And Enhancement Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Number of developers involved in Algolia implementation and enhancements	Interviews	4		1	1
G2	Duration of project (months)	Interviews	3.0		1.0	1.0
G3	Fully burdened monthly compensation for developers	TEI Standard	$15,188		$15,188	$15,188
Gt	Implementation and enhancement costs	G1*G2*G3	$182,256	$0	$15,188	$15,188
	Risk adjustment	↑15%				
Gtr	Implementation and enhancement costs (risk-adjusted)		$209,594	$0	$17,466	$17,466
	Three-year total: $244,527			**Three-year present value: $237,152**		

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

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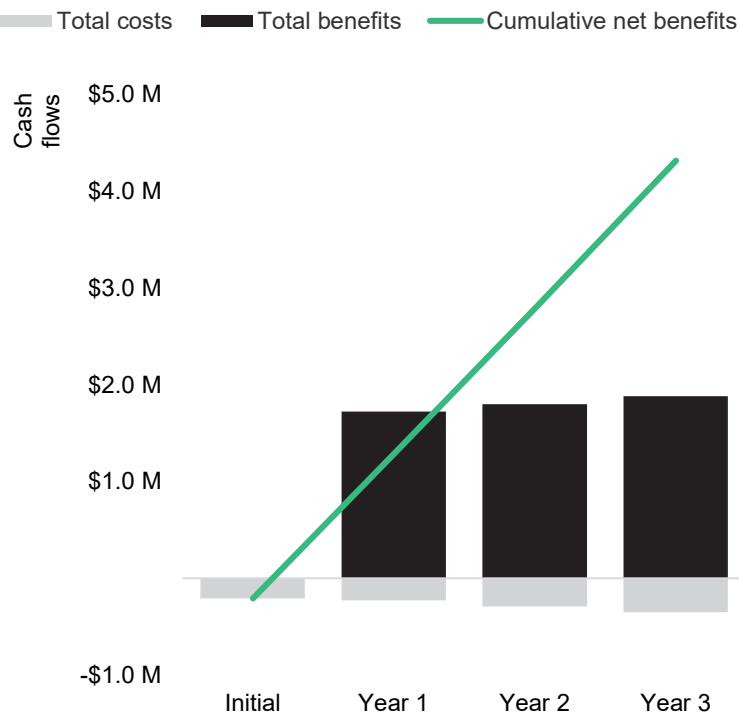
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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	($209,594)	($231,000)	($292,466)	($352,966)	($1,086,027)	($926,491)
Total benefits	$0	$1,723,374	$1,799,499	$1,883,236	$5,406,109	$4,468,796
Net benefits	($209,594)	$1,492,374	$1,507,033	$1,530,270	$4,320,082	$3,542,305
ROI						382%
Payback						<6 months

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: Supplemental Material

Related Forrester Research

"Must-Have E-Commerce Features," Forrester Research, Inc., February 18, 2022

"2021 Smartphone And Tablet Online Retail Forecast, US," Forrester Research, Inc., April 8, 2021

"Digital Experience FAQ: Do I Need To Move To Headless Commerce?," Forrester Research, Inc., July 20, 2020

Appendix C: Endnotes

[1] 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.

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