

FORRESTER®

The Total Economic Impact™ Of IBM Garage

Cost Savings And Business Benefits
Enabled By IBM Garage

OCTOBER 2020

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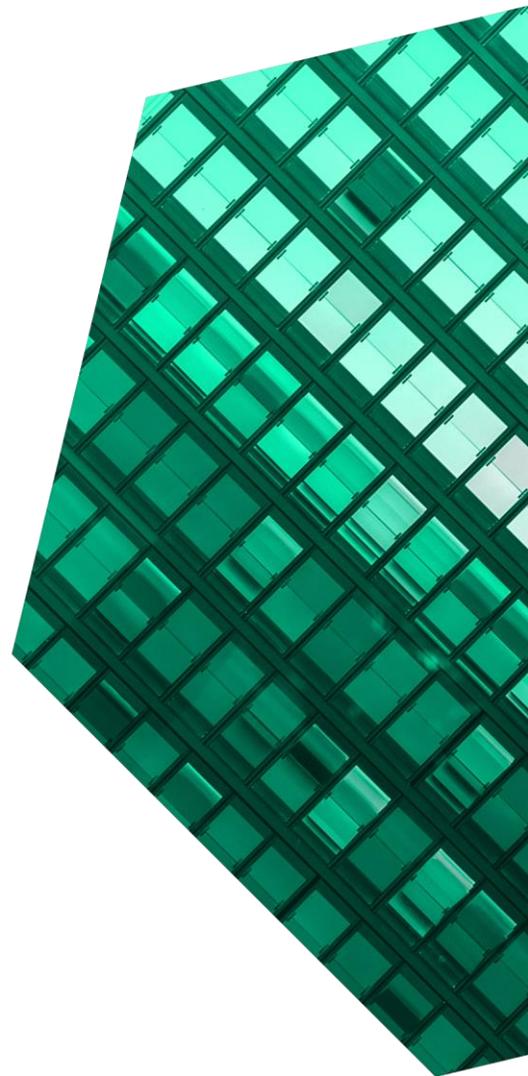
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ABOUT FORRESTER CONSULTING

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Executive Summary

Organizations must invest in structured innovation programs to meet today's demands for growth and transformation. IBM Garage helps its clients drive innovation, modernization and transform culture with a prescriptive approach built on design thinking and agile techniques applied at scale. As a result, interviewed IBM Garage clients have generated 10x more innovation ideas, slashed time-to-market by 67%, and released 6x more projects into production — without increasing delivery team headcount.

Innovation and modernization are more important than ever to meet rising demands from customers, employees, shareholders, and regulators amidst the disruptive backdrop of the COVID-19 pandemic and other ecological and geopolitical challenges. Unfortunately, innovation and modernization efforts have stumbled due to impediments such as waterfall processes, siloed teams, missing data, legacy technology, and the lack of methodological rigor.

Forrester surveyed 461 digital strategy decision-makers and found that successful innovation programs invest in six tenets: customer obsession, agile ways of working, exponential technology, tracking metrics, end-to-end program management, and cross-functional alignment on outcomes. Organizations investing in only one to three of these tenets generate no more innovation ideas than those without any innovation program at all, while organizations that invest in four to five tenets boost ideation by 56% and those that fully harness all six tenets of innovation boost ideation by 90%.¹

However, structured innovation isn't easy — and many organizations need help to succeed.

TEI OVERVIEW

IBM commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study examining the potential return on investment (ROI) enterprises may realize by partnering with [IBM Garage](#). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of IBM Garage for their delivery teams and organization.

IBM Garage helps its clients innovate like startups—even large enterprises burdened with waterfall process and legacy technology. The IBM Garage Methodology unites design thinking's customer-centric, cross-functional cocreation with the speed and agility of agile and DevOps, backed by continuous tracking and reporting of business value metrics plus IBM's technical and industry acumen.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed decision-makers at five IBM Garage clients and aggregated their experiences in a single [composite organization](#) with a representative financial analysis of the impact of investing in IBM Garage for a department of 150 developers.



102% return on investment (ROI)



2.5 to 3.2x faster per-project payback



10x more innovation ideas



3x faster time-to-market



2x higher release rate for tested ideas

KEY FINDINGS

Quantified benefits. Forrester modeled three-year risk-adjusted present value (PV) benefits for the composite organization. The composite organization:

- **Accelerates time-to-market for projects by 3x, returning \$2.0 million.** Early-stage, cross-functional alignment and cocreation with end users plus rigorous agile workflows and IBM's technical expertise reduce delivery timelines by 67% from nine to three months.
- **Doubles the number of tested innovation ideas that are released to production, returning \$4.5 million.** Aligned cocreation plus a 10x increase in the number of ideas generated ensures that ideas selected for testing are at least twice as likely to meet real end-user or business needs and get released to production.
- **Improves relevancy and quality of released projects, boosting cash flows by at least 15% and returning \$1.3 million.** Customer and cross-functional cocreation identify more ideas and better ideas, ensuring that projects in production are more likely to solve real needs with larger opportunities — delivering greater cost savings and revenue.
- **Identifies new opportunities and frees capacity, releasing 40 additional projects that return \$8.9 million.** Faster projects free capacity to test 3x more projects at double the success rate, getting 6x more innovative projects completed and released to market.
- **Fuels permanent cultural change and adoption of the IBM Garage Methodology, enabling teams to release 11 additional projects that return \$837,000.** IBM Garage partners with teams for six delivery cycles over 18 months, with lower involvement each quarter as delivery teams become fully self-sufficient by the seventh quarter at using the IBM Garage Methodology without IBM services.

“We deliver better software, deliver software faster, and make a real difference for customers.”

Systems portfolio manager, financial services

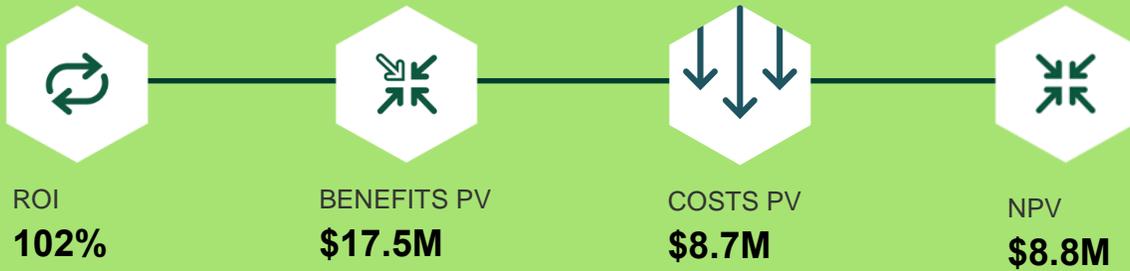
Unquantified benefits. Benefits that are not quantified for this study include:

- **Improved technology adoption without shadow IT or vendor bias.** IBM Garage finds the right technology for each project's need.
- **Avoided risk and sunk costs from inflexible consulting engagements.** Usage-based pricing was flexible for course changes without penalty.
- **Business continuity for customers and internal teams during the pandemic.** IBM Garage helps delivery teams continue to operate virtually and quickly discover, test, and deploy services that meet new business demands.
- **Enhanced employee experience (EX).** Employees learn new skills, use better technology, break down siloes, complete work faster, see meaningful results, and are empowered to innovate and help make decisions.

Costs. Forrester modeled three-year risk-adjusted PV costs for the composite organization, including:

- **IBM consulting fees totaling \$7.8 million.** The composite onboards 15 teams over 21 months with IBM Garage for six quarters each, until the organization applies the methodology on its own.
- **Project management and coordination labor totaling \$884,000.** Leaders and cross-functional employees play key roles throughout delivery.

Synopsis. The customer interviews and financial analysis found that a composite organization experiences benefits of \$17.5M over three years versus costs of \$8.7M, adding up to a net present value (NPV) of \$8.8M and an ROI of 102%.



IBM Garage increases capacity to **test 3x more innovation ideas**, delivering value from otherwise untapped opportunities.

Teams deliver projects **3x faster**, **release 2x more projects** to production, and **boost project results by 15%** with IBM Garage.

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 Garage.

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 Garage can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by IBM and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in IBM Garage.

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 Garage.



CUSTOMER INTERVIEWS

Interviewed five decision-makers at organizations using IBM Garage to obtain data with respect to costs, benefits, risks, and flexibility.



COMPOSITE ORGANIZATION

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



FINANCIAL MODEL FRAMEWORK

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



CASE STUDY

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

The IBM Garage Customer Journey

Drivers leading to the IBM Garage investment

Interviewed Organizations			
Industry	Region	Annual Revenue	Interviewee
Energy	Global, based in Europe	Over \$50 billion	•Director of product and partnerships •VP of consumer products and platforms
Energy	Global, based in Europe	Over \$50 billion	Head of innovation
CPG	Global, based in North America	\$10 billion to \$50 billion	Senior director of digital transformation
Financial services	South America	\$10 billion to \$50 billion	•Head of digital business •IT director •Systems portfolio manager
Energy	Asia Pacific	\$1 billion to \$10 billion	Chief digital officer

KEY CHALLENGES

Forrester's interviews with decision-makers from five IBM Garage clients identified common challenges that led to partnering with IBM Garage, including:

- **Inability to meet urgent business demands.** Rising customer and employee expectations, increased competition, shifting market and regulatory dynamics, the COVID-19 pandemic, natural disasters, and the need to adapt to climate change all necessitated massive innovation and modernization — but legacy culture and technology held companies back.
- **Slow delivery speeds with constant failures.** Teams made decisions without cross-functional input or ample data on end-user needs. Projects went through sluggish and frustrating processes that took far too long, wasted labor, and often ended in failure. Specifically, waterfall processes led to 18-month projects for the interviewed CPG company, meeting goals only 25% of the time.

“We chose IBM Garage to immerse our people with a digital operating model and gain immediate value outcomes.”

VP of consumer products and platforms, energy

“Our delivery teams would get the requirements, go into a cave for 18 months, and say ‘Tada, here’s your new digital widget’ — whether it was relevant or not.”

Senior director of digital transformation, CPG

- **Fragmented, inconsistent, and redundant innovation.** An energy company found that innovation primarily consisted of pet projects, lacking rigor and consistency. Even worse, there were many identical projects across divisions fueled by excessive shadow IT.
- **Change-resistant culture and poor EX.** Getting teams to embrace new technology architectures, agile ways of working, cross-functional collaboration, customer-centricity, and decision-making never seemed to stick. Organizations struggled to attract and retain talent due to poor EX from bad systems, lack of progress, lack of empowerment and creativity, and a disconnect from real customer outcomes.
- **Reluctant leadership and rigid rules, systems, and processes.** Automated or human processes often conflicted with the needs of innovation and modernization, and organizations were inflexible

to making it work. Leaders and approval processes often stopped innovation before it could start, with unnecessary and illogical requirements dictating progress rather than customer pain points, reasoned market opportunities, or business case justification. For example, one energy company had to prove that ideas were scalable before a proof of concept (POC) could even begin, preventing innovation and modernization from even starting.

- **Reluctance to try again after past failures to drive cultural change.** Several companies had previously established internal innovation teams or partnered with third-party consultancies for digital transformation, only to get years down the road without lasting cultural change.

“The key differentiator is that IBM Garage does it with you, not to you — and it’s not exclusive. They’re very different from everyone else we’ve worked with.”

Chief digital officer, energy

PARTNER REQUIREMENTS

Interviewed organizations typically chose to partner with IBM Garage for their perception of IBM’s:

- Structured innovation process that combines design thinking, agile, DevOps, and use of modern platforms and technologies.
- Strong industry, design, architecture, and digital transformation expertise.
- Strong technology expertise including for technologies from IBM, Red Hat, open source, and a wide array of third-party vendors.
- Focus on real-time business value measurement.
- Flexible and scalable contracts that enable quick pivots, growth, or even project stoppages without risk of lock-in to a long-term contract.

KEY RESULTS

By partnering with IBM Garage and employing the IBM Garage Methodology, interviewed organizations:

- **Generated 10x more innovation ideas.** Cocreation with customers and cross-functional employees generated more ideas. Instead of testing one idea per three proposed, teams identified 33 ideas per one selected for testing.
- **Released 2x more projects to production.** Aligned cocreation and increased idea generation caused innovation ideas selected for testing to be at least twice as likely to meet real end-user or business needs and get released to production.
- **Slashed project delivery timelines by 67%.** Early-stage cross-functional alignment and end-user input combined with rigorous agile workflows and IBM’s technical expertise helped teams get from idea to release 3x faster.
- **Released 6x more innovations.** Faster projects freed capacity to test 3x more projects at double the success rate, getting 6x more innovative projects completed and released to market.
- **Improved project returns by at least 15%.** Customer and cross-functional cocreation identified more and better ideas, ensuring that completed projects were more likely to solve real needs with larger opportunities — delivering greater cost savings and business growth.
- **Enhanced technology adoption.** IBM identified the best modern technologies and frameworks for a project, helped deploy them with best practices, and helped reduce shadow IT.
- **Improved EX.** Teams felt empowered and energized using the new model.
- **Enabled business continuity despite unprecedented challenges.** Teams quickly adapted to remote delivery to release solutions that met new customer behaviors and government regulations from the pandemic.

VOICE OF THE CUSTOMER

Interviewed customers shared:

- “We’re growing faster, and our costs per development unit are better than other business units that haven’t made the investment. IBM Garage is a key factor.”
– IT director, financial services
- “Our e-commerce team is the highest-performing team in delivering capabilities because we have IBM Garage helping us generate ideas ahead of development capacity, and we see immediate results.”
– Senior director of digital transformation, CPG
- “We chose IBM Garage so we could start small and could call the project at any time; it lets us manage risk. So we eased ourselves into it, got the feedback loop to say, ‘Is this working? Yes? Then let’s continue.’ The risk is that culture wouldn’t change, and the method wouldn’t work. But we got feedback, found things that didn’t happen as expected, and adapted. IBM Garage has done a phenomenal job driving change — and change is not easy.”
– Chief digital officer, energy
- “Don’t underestimate the value of human-centricity that IBM Garage brings, with commitment and empathy. This can be hard to find in the market.”
– Director of product and partnerships, energy
- “We switched to IBM Garage because of leadership and process-oriented packaging of agile and design-led innovation.”
– Senior director of digital transformation, CPG
- “One project had two weeks of face-to-face meetings, and then everything went virtual with the pandemic. Despite the added complexity, business sponsors and stakeholders responded very, very positively. They asked, ‘How the hell did you pull this off?’”
– VP of consumer products and platforms, energy
- “The cost of IBM Garage is maybe 15% to 20% of what it would have cost in developer labor.”
– Senior director of digital transformation, CPG
- “End-to-end innovation is where you get the most efficiencies and value. We used to have each function do their part and send it over to the next. Now, we bring all the stakeholders together. For one HR project, we had hiring managers, legal, IT, security, procurement, emergency management, and even recent hires all come together. These leads all sat on a decision acceleration forum to eliminate any impediments to get results right away.”
– Chief digital officer, energy
- “We would have spent 10 weeks developing a dashboard for our customers, but IBM Garage instead pivoted to a totally different solution. ... It reduced our dwell time [from over 5 minutes] to under 4 minutes and increased basket size [by 19%].”
– Senior director of digital transformation, CPG
- “IBM Garage isn’t just about speed. It’s the way you did it, what you learned, and the quality of work you produced.”
– VP of consumer products and platforms, energy

Financial Model

Model of the rollout of IBM Garage and its impacts for the composite organization

REFERENCE TABLES

Forrester's financial model for the composite organization illustrates how the IBM Garage engagement grows from pilot to full adoption to permanent cultural change without continuing IBM services involvement.

The following reference tables show the average benefits per project led using the IBM Garage Methodology, which are recognized at scale over the three-year analysis for the composite organization. This study references these values throughout the quarterly timeline, benefit, and cost sections.

Impact Of IBM Garage On Innovation Returns For The Composite Organization			
Ref.	Metric	Calc.	Value
R1	Number of developers per project team	Composite	10
R2	Weeks to test an innovation with traditional methods	Interview data	39
R3	Developer fully burdened hourly pay	Composite	\$65
R4	Development cost with traditional methods	$R1 \times R2 \times 40 \times R3$	\$1,014,000
R5	Typical payback period with traditional methods (weeks)	Interview data	78
R6	Weekly cash flows with traditional methods per released innovation	$R4/R5$	\$13,000
R7	Percent increase in returns with IBM Garage	Interview data	15%
R8	Incremental increase in returns with IBM Garage	$R6 \times R7$	\$1,950
R9	Weekly cash flows with IBM Garage per released innovation	$R6 + R8$	\$14,950

Impact Of IBM Garage On Innovation Speed For The Composite Organization			
Ref.	Metric	Calc.	Value
R10	Weeks to test an innovation with traditional methods	R2	39
R11	Percent reduction in project length with the IBM Garage Methodology	Interview data	67%
R12	Weeks to test an innovation with the IBM Garage Methodology (rounded)	$R10 \times (1 - R11)$	13
R13	Weeks saved per tested innovation with the IBM Garage Methodology	$R10 - R12$	26

Impact Of IBM Garage On Innovation Release Rate For The Composite Organization			
Ref.	Metric	Calc.	Value
R14	Number of innovative ideas tested, traditional methods	Survey data	20
R15	Percent of tested innovations released, traditional methods	Survey data	26%
R16	Number of innovations released, traditional methods (rounded)	$R14 \times R15$	5
R18	Percent of tested innovations released, IBM Garage	Interview data	50%
R19	Number of innovations released, IBM Garage	$R14 \times R18$	10
R19	Increased number of innovations released with IBM Garage	$R19 - R16$	5

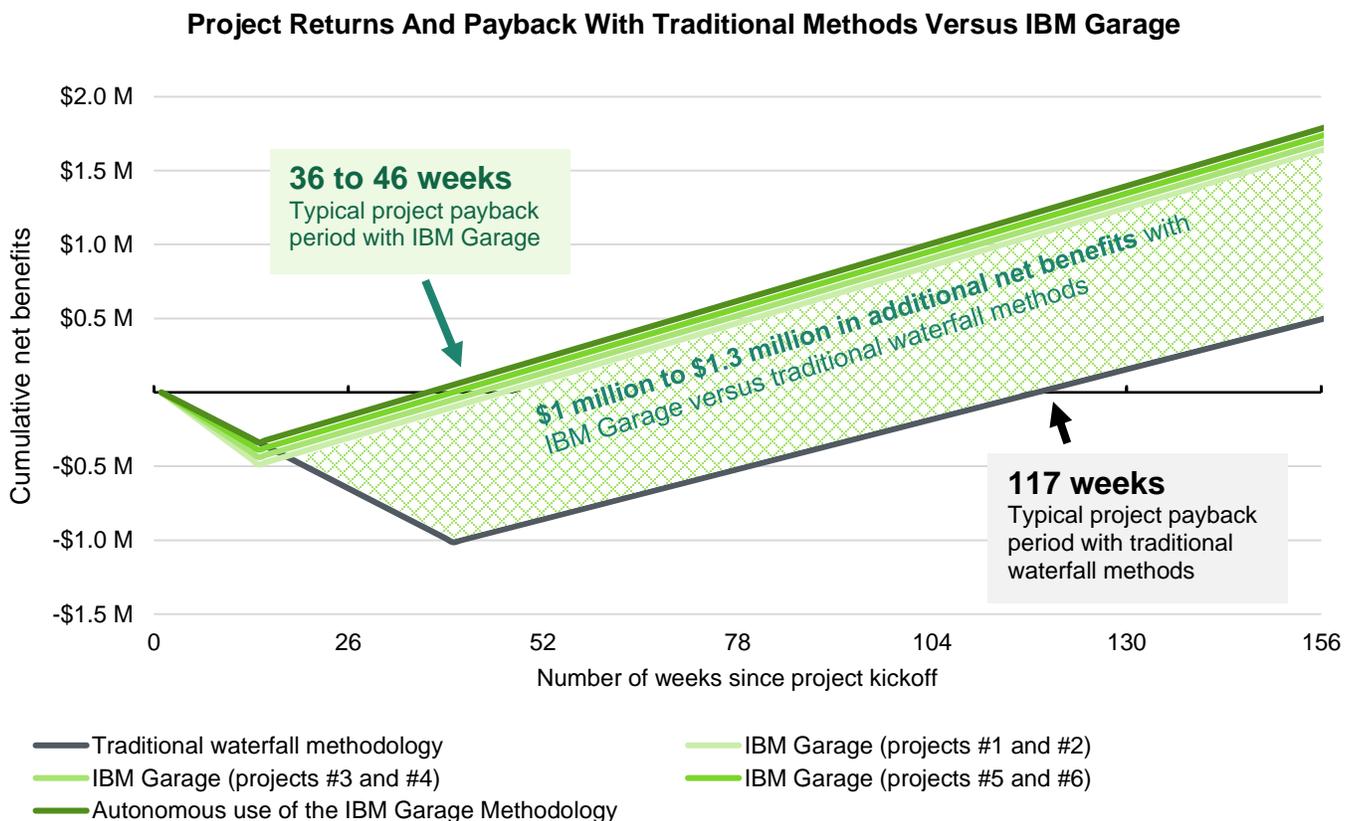
PER-PROJECT PAYBACK

IBM Garage projects cost between \$300,000 and \$500,000 including both internal delivery labor and IBM services costs, as compared to \$1 million in delivery costs for projects using traditional waterfall methods. On average, IBM Garage projects reach production in 13 weeks versus 39 weeks for traditional projects, generating cash flows 6 months

earlier. IBM Garage projects also see 15% higher weekly returns on average as compared to baseline.

As a result, IBM Garage projects break even within 36 to 46 weeks versus 117 weeks to break even with traditional methods — 2.54x to 3.25x faster. Over a three-year period, IBM Garage projects therefore generate \$1 million to \$1.3 million in additional returns as compared to traditional projects.

Project Returns And Payback With Traditional Methods Versus IBM Garage						
Delivery Method	Time-To-Market	Development Cost Per Week	IBM Garage Cost Per Week	Weekly Returns	Three-Year Net Benefits	Payback Period
Traditional waterfall methodology	39 weeks	\$26,000	\$0	\$13,000	\$507,000	117 weeks
IBM Garage, 1 st and 2 nd projects (new to IBM)	13 weeks	\$26,000	\$11,538	\$14,950	\$1.5 million	46 weeks
IBM Garage, 3 rd and 4 th projects (partially trained)	13 weeks	\$26,000	\$7,692	\$14,950	\$1.6 million	43 weeks
IBM Garage, 5 th and 6 th projects (mostly trained)	13 weeks	\$26,000	\$3,846	\$14,950	\$1.7 million	39 weeks
Autonomous use of the IBM Garage Methodology	13 weeks	\$26,000	\$0	\$14,950	\$1.8 million	36 weeks



Baseline assumptions

- **15 delivery teams.**
- **10 developers per team.**
- **Nine-month average project length.**
- **Tests 20 innovation ideas per year.**
- **Releases 5 innovation ideas per year.**
- **18-month average payback period per completed project.**

COMPOSITE ORGANIZATION

Forrester constructed a TEI framework, a composite organization that is representative of the five organizations that Forrester interviewed, and an aggregate ROI analysis that illustrates the areas financially affected. Before partnering with IBM Garage, the composite organization:

- **Employed 150 developers across 15 delivery teams of 10 developers each.** Delivery teams worked using a traditional waterfall method, with decisions and business requirements passed down from above. Developers earned an average fully burdened salary of \$135,000 per year.
- **Tested 20 innovation ideas and released five to production each year.** One team led the average innovation project over a nine-month period, with only 26% of innovations released to production. Innovation and modernization projects had varying goals: new revenue streams, improved customer experience (CX), internal labor efficiencies, and material and technology operating cost savings.

- **Tested innovation ideas that offer projected payback within 18 months.** With an average development labor cost of just over \$1 million, funding criteria dictated that projects must expect at least \$13,000 per week in recognized benefits to be selected for testing investment.

ADOPTION OF IBM GARAGE

The composite organization realizes it must break the shackles of slow-moving culture, waterfall processes, and aging technology. It seeks to behave more like a startup, centered on customer needs as it innovates and delivers software with speed and quality. The composite selects IBM Garage for IBM's:

- Structured innovation process that combines design thinking, agile, DevOps, and use of modern platforms and technologies.
- Industry and technology expertise across vendors, not just IBM and Red Hat solutions.
- Focus on real-time business value measurement.

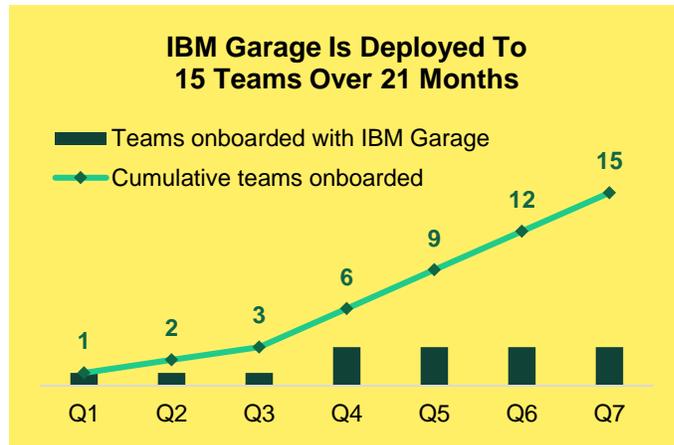
The partnership is designed to be temporary rather than perpetual, without lock-in to a long-term contract. IBM Garage drives adoption and permanent cultural change using the IBM Garage Methodology so that delivery teams continue to leverage the methodology (and receive its benefits) long after the professional services engagement ends. The composite:

- Runs a three-month pilot project with one delivery team paired with IBM Garage.
- Onboards all its 15 delivery teams to the IBM Garage Methodology in seven quarters after seeing early wins and evangelizing the methodology.
- Assigns 1 to 1.5 IBM resources per internal resource in a paired programming model, easing to zero over 18 months to ensure teams sustain the methodology without active involvement of IBM services.

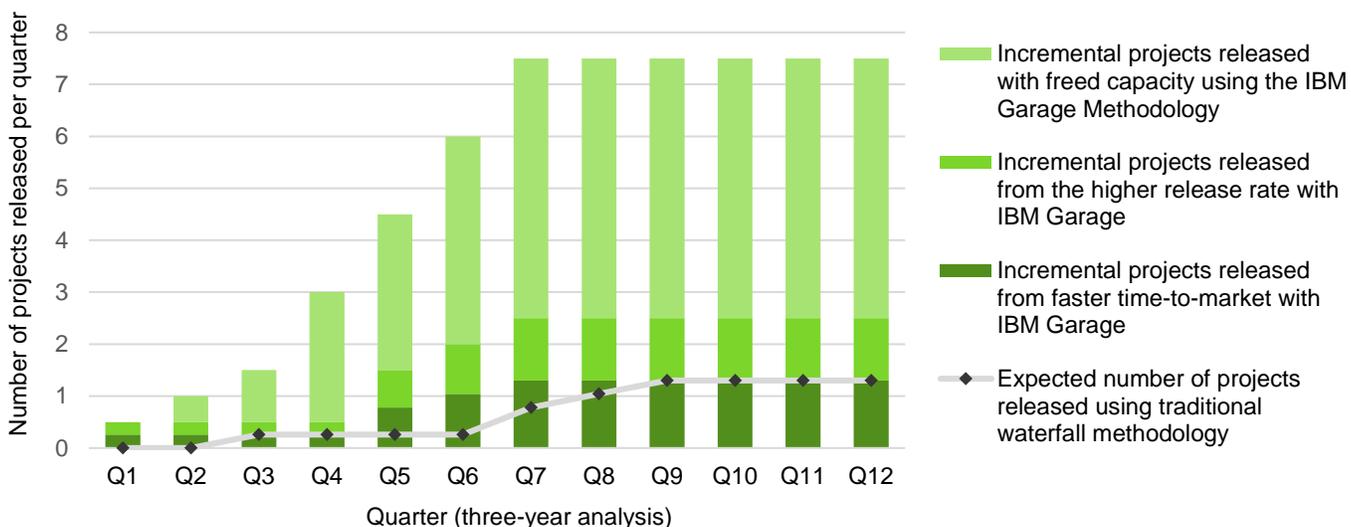
QUARTERLY ANALYSIS

IBM Garage helps companies deliver projects in an average of three months. Forrester has therefore measured the number of teams, the number of ideas tested, and the cumulative number of projects released by the composite organization on a quarterly basis across the three-year analysis as it increases its partnership with IBM Garage.

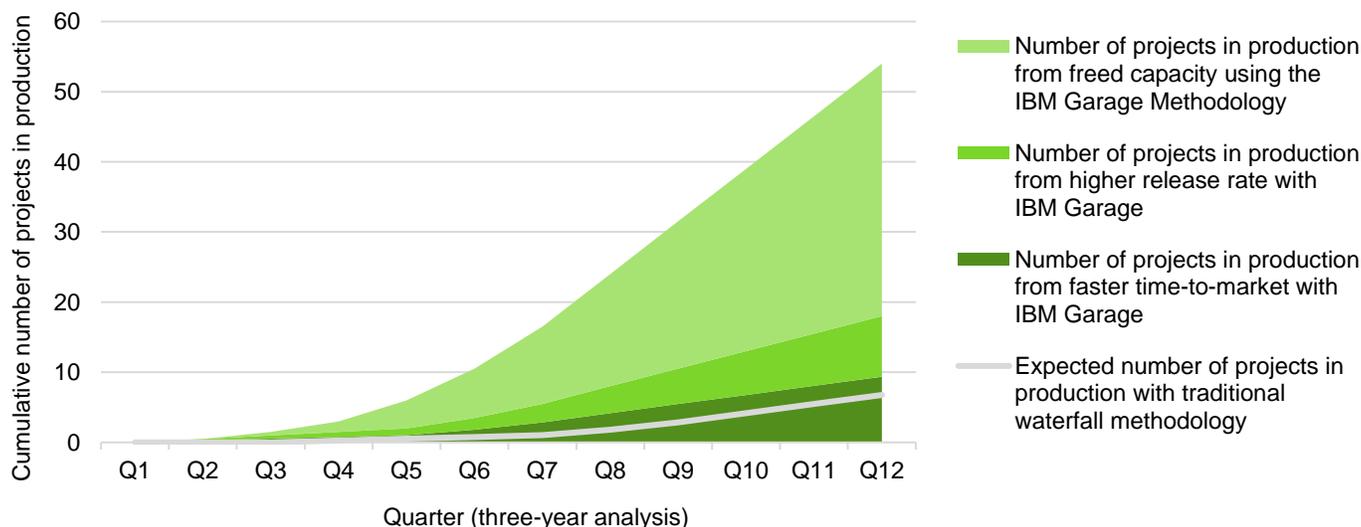
The values from the following quarterly charts feed into the annualized benefit and cost quantification tables later in this study.



IBM Garage Increased The Number Of Projects Completed Per Quarter By 6x



Cumulative Projects Released Over Three Years With IBM Garage



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	Time-to-market	\$244,648	\$978,590	\$1,223,238	\$2,446,476	\$1,950,196
Btr	Release rate	\$212,940	\$1,384,110	\$4,167,540	\$5,764,590	\$4,468,609
Ctr	Quality and relevancy	\$64,643	\$409,403	\$1,228,208	\$1,702,253	\$1,319,886
Dtr	Efficiency and capacity	\$165,198	\$3,113,973	\$8,259,875	\$11,539,046	\$8,929,478
Etr	Cultural change	\$0	\$23,322	\$1,088,360	\$1,111,682	\$836,976
	Total benefits (risk-adjusted)	\$687,428	\$5,909,398	\$15,967,221	\$22,564,047	\$17,505,145

Projects using the IBM Garage Methodology were cheaper, faster, and more successful than traditional projects because organizations:

- Identified more ideas for innovation and modernization using design thinking and cross-functional cocreation ...
- ... which were more relevant and likely to meet real needs for end users and could be winnowed to only the most likely to succeed ...
- ... which were delivered faster using agile processes and a structured approach for eliminating impediments ...
- which were more likely to be released to production with better relevance, structured processes, and IBM's technical expertise ...
- and which drove higher business results than those run with traditional methods due to enhanced solution-market fit, faster realization of benefits, and improved technical architecture.

Organizations also freed significant delivery capacity and discovered far more opportunities — testing and releasing more innovations to market. They achieved permanent cultural adoption of the IBM Garage Methodology, driving benefits into the future even after IBM services engagements end.

Organizations will recognize benefits in aggregate, but to provide greater insight, the following analysis isolates the financial impact of each distinct driver.

TIME-TO-MARKET

Evidence and data. IBM Garage helps teams ideate, plan, design, build, test, and deploy innovations 3x faster — reaching the market six months sooner. Projects therefore return two quarters of additional returns for recurring revenue or cost savings, provide greater competitive advantage, and increase the present value of expected one-time cash flows.

- An energy company's director of product and partnerships shared: "We built a new app and customer experience that went from nothing to a product in market from March to June. It wasn't easy. If we did it in traditional ways, we never would have succeeded. We would still be strategizing in September, let alone building."

! Faster delivery and better design slashed labor hours. Freed time could boost delivery output, be reallocated, or cut. To avoid double-counting, Forrester quantified the higher number of projects completed by the same delivery teams rather than costs savings based on hours saved and salary. The appropriate approach will vary by company.

- A CPG company’s senior director of digital transformation shared: “IBM freed us up from the legacy tech and typical processes we follow so we could be nimble, quick, and able to make real-time decisions. We could quickly test business hypotheses without the typical legacy constraints — despite being at an organization with many decades of technical debt.” Fewer labor-wasting sprints reduced project costs by 80% to 85%.

Modeling and assumptions. Forrester quantified time-to-market using the following model:

- The composite organization accelerates the release of already planned projects by 26 weeks.
- Each project was expected to return at \$13,000 per week in cost savings or operating profits, equating to an 18-month payback period as compared to the traditional costs of development.
- The composite focuses 75% of funding to projects that generate recurring cost savings or

revenues due to market disruptions and risks including the COVID-19 pandemic. Each week saved generates additional cash flows.

- The other 25% of cash flows are one-time and are received six months earlier, providing a higher present value at a discount rate of 10%.
- Additional benefits of competitive advantage from faster time-to-market are not quantified.

Risks. IBM Garage consistently accelerated delivery for all interviewed organizations. Although speed and benefit recognition will vary per project, this aligns with Forrester’s broader research on the benefits of agile and design thinking and is therefore assigned a “low” risk.

Synopsis. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of almost \$2 million.

Time-To-Market					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of projects released faster with IBM Garage	Quarterly charts	1	4	5
A2	Percent of project returns that are recurring savings or revenues	Composite	75%	75%	75%
A3	Weeks saved per tested project with IBM Garage	R13	26	26	26
A4	Weekly cash flows with traditional methods per released project	R6	\$13,000	\$13,000	\$13,000
A5	Additional returns generated with faster time-to-market	A1*A2*A3*A4	\$253,500	\$1,014,000	\$1,267,500
A6	Percent of project returns that are recurring savings or revenues	1-A2	25%	25%	25%
A7	Expected cash flows received sooner with IBM Garage	A1*A3*A4*A6	\$84,500	\$338,000	\$422,500
A8	Present value of expected cash flows without faster time-to-market	PV assumes 10% annual discount rate for 26 weeks	\$80,476	\$321,905	\$402,381
A9	Increased present value of cash flows with faster time-to-market	A7-A8	\$4,024	\$16,095	\$20,119
At	Time-to-market	A5+A9	\$257,524	\$1,030,095	\$1,287,619
	Risk adjustment	↓5%			
Atr	Time-to-market (risk-adjusted)		\$244,648	\$978,590	\$1,223,238
Three-year total: \$2,446,476			Three-year present value: \$1,950,196		

RELEASE RATE

Evidence and data. IBM Garage projects are twice as likely to be completed and released to market than those conducted with traditional processes because:

- Design thinking brings together leaders, delivery teams, cross-functional employees, and end users or customers for human-centered design and cocreation. These sessions simultaneously produce more innovation ideas that are more likely to meet key needs.

“We identified 70 ideas to modify the experience of just one product by learning from our customers.”

Head of digital business, financial services

- Structured innovation aligns delivery teams to efficiently complete projects with more successful product-market fit. Organizations set up and track business metrics from the start to ensure that work delivers key business outcomes and that leaders understand and value project value. Teams can incorporate metrics and user feedback early and often, avoiding late-breaking cancellations or excess rework.

“We’re generating 100 ideas with IBM Garage for every two to three that we select for a proof of concept.”

Head of innovation, energy

- IBM Garage’s technical expertise helped companies select the right architecture and tools, build with best practices, and complete projects that passed requirements and functioned well.

Modeling and assumptions. The composite organization doubles the success rate of projects conducted with IBM Garage instead of traditional processes, releasing 0.25 to 1.25 new projects to production per quarter. The composite releases 12 additional projects over three years, generating 493 incremental weekly returns of \$13,000 per week.

Risks. Increased release rate will depend on the effectiveness of traditional processes replaced by IBM Garage and organizations’ willingness to listen to and use the findings of IBM’s expertise and design thinking sessions.

Synopsis. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$4.5 million.

Release Rate					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Quarters of returns generated by additional released projects	Quarterly analysis	1.4	9.1	27.4
B2	Additional weeks of returns generated with higher release rate	B1*13	18.2	118.3	356.2
B3	Weekly cash flows with traditional methods per released project	R6	\$13,000	\$13,000	\$13,000
Bt	Release rate	B2*B3	\$236,600	\$1,537,900	\$4,630,600
	Risk adjustment	↓10%			
Btr	Release rate (risk-adjusted)		\$212,940	\$1,384,110	\$4,167,540
Three-year total: \$5,764,590			Three-year present value: \$4,468,609		

QUALITY AND RELEVANCY

Evidence and data. IBM Garage boosts investment returns as compared to traditional methods because of increased customer-centric idea generation, structured delivery with agility to pivot based on continuous data and feedback, faster time-to-market, and better technical architectures. Customer-focused innovations led to higher Net Promoter Scores (NPS), improved CX and user experience (UX), higher retention, and higher basket sizes for interviewees, while internal-focused innovations reduced both IT and non-IT operating expenses, automated and streamlined end-user processes, eliminated redundant processes, and cut down on both costs and risks of shadow IT.²

- A CPG company leveraged IBM to deploy a dashboard for customers, but IBM Garage identified that the planned idea would not have the intended consequences and instead pivoted to an alternative digital experience. This reduced dwell time from 5 minutes to under 4 minutes, boosted basket size by 19%, and increased retention of abandoned orders from 20% to 85%. Had the originally planned dashboard been released, dwell time would have increased to almost 10 minutes based on early testing.
- An energy company overhauled its employee onboarding process with IBM Garage — reducing

materials cost, saving weeks of labor for hiring managers and trainees, and setting up new employees with the technology and training they need without any frustrating wait time. Labor savings from the first several months are projected to break even within 12 to 18 months.

- A financial services company improved CX with IBM Garage, as it aimed to fight off new market competitors. The IT director shared, “We hoped to improve NPS by 10 percentage points over the next two years; with IBM Garage, we succeeded in just one year.” The team’s products are growing faster than other business units that are not working with IBM Garage.

Modeling and assumptions. The composite organization boosts average savings and revenue returns from projects released with IBM Garage by 15% from \$13,000 to \$14,950 per week, with 79 cumulative quarters of innovations in production.

Risks. The impact of IBM Garage on investment returns will vary greatly given each project’s revenue or savings opportunity, learnings identified from end users and business metrics, and the implementation of these learnings in the completed project.

Synopsis. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$1.3 million.

Quality And Relevancy					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Quarters of returns from projects released using the IBM Garage Methodology versus traditional methods	Quarterly analysis	3.0	19.0	57.0
C2	Weekly cash flows with traditional methods per released projects	R6	\$13,000	\$13,000	\$13,000
C3	Percent increase in returns with IBM Garage	R7	15%	15%	15%
Ct	Quality and relevancy	C1*13*C2*C3	\$76,050	\$481,650	\$1,444,950
	Risk adjustment	↓15%			
Ctr	Quality and relevancy (risk-adjusted)		\$64,643	\$409,403	\$1,228,208
Three-year total: \$1,702,253			Three-year present value: \$1,319,886		

EFFICIENCY AND CAPACITY

Evidence and data. Delivery teams tripled output with IBM Garage due to increased efficiency, speed, idea generation, and ability to track and prove results to garner additional investment.

- IBM Garage helped the CPG company identify and release innovations, such as a method of accelerating the processing of \$1 billion in annual revenue by three days. The company also identified that 20% of sales and service visits were no-shows due to the pandemic and released a solution to automatically address gaps in service and provide better CX.
- Delivery output soared for a financial services company. The systems portfolio manager explained, “We’re delivering six times more story points than before per sprint, on average.” The head of digital business added, “Now we can take out each business complexity point with 300% better productivity.”
- The financial services company also slashed time required to solve a customer-reported issue, according to the IT director. “It used to take us 300 days to solve an issue submitted by a customer; now, we do it in a single 15-day sprint. Customer needs are changing; we can’t wait 300 days.”

Modeling and assumptions. Forrester modeled innovation from freed capacity for the composite organization using the following assumptions:

- Delivery teams complete two additional projects for every one already planned project with the freed capacity from accelerated projects, testing 80 new ideas and releasing 40 to market.
- The composite completes projects with a three-month average timeline, 50% release rate, and \$14,950 in average returns per week.
- Only 50% of additional cash flows are attributed to IBM Garage as many factors may play a role.
- Time saved could also be measured as labor hours saved multiplied by average pay if capacity is instead reallocated to other work or cut. Readers should only use one of these approaches to avoid double-counting.

Risks. Increased project output will depend on how time saved is reallocated, each project’s revenue or savings opportunity, learnings identified from end users and business metrics, and the implementation of these learnings in the completed project.

Synopsis. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$8.9 million.

Efficiency And Capacity					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Quarters of returns from additional projects tested and released with freed capacity (while using IBM Garage services)	Quarterly analysis	2.0	37.7	100.0
D2	Weekly cash flows with IBM Garage per released project	R9	\$14,950	\$14,950	\$14,950
D3	Percent of new project returns attributable to IBM Garage	Forrester	50%	50%	50%
Dt	Efficiency and capacity	D1*13*D2*D3	\$194,350	\$3,663,498	\$9,717,500
	Risk adjustment	↓15%			
Dtr	Efficiency and capacity (risk-adjusted)		\$165,198	\$3,113,973	\$8,259,875
Three-year total: \$11,539,046			Three-year present value: \$8,929,478		

“We’re delivering six times more story points than before per sprint, on average.”

Systems portfolio manager, financial services

CULTURAL CHANGE

Evidence and data. Teams adopt the IBM Garage Methodology as a new way of working, continuing to release projects with the same customer-centricity, speed, and success even after the IBM Garage services team is no longer paired with them.

- A financial services company is creating autonomous internal teams that can find and solve customer problems without going up the corporate hierarchy or relying on a professional services partner. “We are trying to learn to learn with IBM Garage,” shared the systems portfolio manager. Cultural adoption is under way, as the head of digital business shared, “The culture to learn fast and modernize hard skill sets spread through 7% of the team in the first six months.”
- An energy company established an innovation team with IBM Garage that generated 530 ideas and built seven to scale in only eight months. Several departments have become self-sufficient with coaching from IBM Garage; the head of innovation shared, “IBM Garage has successfully managed to create a different culture.”
- Another energy company interviewee shared how past consulting projects “went nowhere,” but with IBM Garage “everyone gets converted” and teams can finally get leadership to recognize the “outrageous costs” of the impediments and constraints faced by teams. The company turned to IBM Garage, with the chief digital officer sharing how crucial change was: “We have a business issue we have tried to solve 26 times. Really. If we do not change our behaviors of how we work, we’ll have a 27th failure on our hands.”

- A third energy company has seen significant culture adoption. The chief digital officer shared: “I brought IBM Garage into my company last August to commence our first initiative. It was hard because I was introducing a totally foreign concept to a company of predominantly engineers who had always done waterfall projects and didn’t even understand agile. They wondered how it would all work and doubted we could really go at the speed of a startup in our enterprise. It was quite different culturally, and it was hard getting people to buy in. So I funded the first initiative and brought the other divisions along so they would see what could happen. Now the other divisions are picking up IBM Garage and taking it out into the greater world.”

“IBM is helping us upskill with the Garage Methodology, without trying to force us to keep spending on professional services in perpetuity. ... IBM Garage has successfully managed to create a different culture.”

Head of innovation, energy

Modeling and assumptions. Forrester modeled sustained autonomous innovation for the composite organization using the following assumptions:

- IBM Garage is directly involved with each delivery team for 18 months until the team is autonomous in its ability to use the Garage Methodology without support of IBM services.
- The composite therefore tests 22 innovation ideas and deploys 11 to market using the IBM Garage Methodology without IBM services support, generating 199 weeks of additional returns at \$14,950 per week.
- Only 50% of additional cash flows are attributed to IBM Garage as many factors may play a role.

Risks. Cultural change is notoriously difficult to achieve, as the senior director of digital transformation for a CPG company shared: “Culture eats strategy for lunch.” Change will require buy-in from leadership down to delivery teams with adequate partnership and training from IBM Garage. Interviewees shared that they were seeing permanent cultural change as IBM Garage rolled off some business units; however, it is uncertain if sustained innovation using the Garage Methodology will continue in the years to come.

“Garage is really about culture. If you want to change your way of working, you’ve got to get all the people who own processes to buy into it and be involved end to end. You’ve got to get the scores on the door.”

Chief digital officer, energy

Synopsis. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of \$837,000.

Cultural Change

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	Quarters of returns from additional projects tested and released due to freed capacity using the IBM Garage Methodology autonomously (without IBM services)	Quarterly analysis	0.0	0.3	14.0
E2	Weekly cash flows with IBM Garage per released project	R9	\$14,950	\$14,950	\$14,950
E3	Percent of new project returns attributable to IBM Garage	Forrester	50%	50%	50%
Et	Cultural change	E1*13*E2*E3	\$0	\$29,153	\$1,360,450
	Risk adjustment	↓20%			
Etr	Cultural change (risk-adjusted)		\$0	\$23,322	\$1,088,360
Three-year total: \$1,111,682			Three-year present value: \$836,976		

UNQUANTIFIED BENEFITS

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

- **Improved adoption of cloud, platform, and emerging technologies — without shadow IT or vendor bias.** IBM Garage helped companies accomplish difficult goals within their own technology ecosystems and ensured that lightweight POC testing did not lead to shadow IT fragmentation. Interviewees from all five companies shared that Garage did not come to the table with bias for IBM or Red Hat technology or against other vendors — focusing only on what was right for the customer’s unique situation with expertise across vendors and approaches.

- **Avoided risk and sunk costs from inflexible consulting engagements.** IBM Garage’s usage-based pricing model was flexible — helping companies scale, pivot, access different expertise, and change timelines without penalty. When one company’s innovation budget was slashed due to the COVID-19 pandemic, it simply paused the engagement until the funding returned. An energy company’s director of product and partnerships shared: “We’ve pivoted at least twice on our broader IBM Garage program to adapt to increasing demand beyond what was expected. We’ve generated a lot of interest across leadership and are replacing our workstream model with a circular model that puts customer and product experiences at the center.”

“IBM Garage helps us foster talents, gain competencies, provide better pace and structure to workflows, and give employees freedom to learn and harness their knowledge. They’ve done an amazing job building camaraderie, keeping people focused, creating a sense of duty, and helping people feel their input is recognized — even as the pandemic made us go remote. IBM created the right toolkit, the right ceremonies, and the right ways of working. Everyone essentially signed a social contract to each be accountable as citizens of the initiative.”

IT director, financial services

- **Business continuity for customers and internal teams during the COVID-19 pandemic.** IBM Garage helped companies quickly discover, test, and deploy services for customers like new digital offerings or processes to meet new market needs. Internally, IBM Garage helped companies adapt to a remote delivery model with ease — keeping DevOps working fast and efficiently even while virtual. An energy company’s chief digital officer shared: “One division kicked off a project just before the pandemic, but they did an amazing job working distributed agile while working remotely. Some of the people in the squads have never even met in person, but they delivered. The head of the program was absolutely amazed, with the output and despite the restrictions of COVID-19. It really is a different way of working, and it’s very doable. The pandemic has shown people that, yes, you can do this. It can work differently. You don’t need to physically be in the office to succeed.”
- **Enhanced EX.** Delivery teams learned new skills, used better technology, completed work faster, saw measurable outcomes, and were empowered to make decisions. They valued

working with cross-functional employees and felt more connected to teammates and end customers. Cultural change persisted even as IBM services engagements ended.

FLEXIBILITY

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

- **Avoiding opportunity costs and risk of building the wrong thing.** The CPG interviewee shared how IBM Garage pivoted one project before the org spent 10 weeks building a feature that would not have worked and avoided spending 18 months on another project that offered minimal promise. Similarly, an energy interviewee discussed how IBM Garage helped avoid building duplicate projects that aimed to accomplish the same goal.
- **Tackling future business challenges.** The CPG company is eyeing a massive project that processes billions in transactions a day, where a single day of downtime would cost eight digits. After a competitor had a two-week outage for a similar system, the company prioritized this initiative — but must ensure the work is done right with the help of a partner like IBM Garage.

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

“Our employee NPS (eNPS) was -70 when we got started. But teams are learning and improving with every sprint, and eNPS is now positive. People used to have to spend so much time learning and making mistakes with legacy code. Now it’s much, much faster.”

Director of product and partnerships, energy

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	IBM consulting fees	\$0	\$1,732,500	\$5,670,000	\$2,047,500	\$9,450,000	\$7,799,267
Gtr	Project management and coordination	\$0	\$108,108	\$459,459	\$540,540	\$1,108,107	\$884,114
	Total costs (risk-adjusted)	\$0	\$1,840,608	\$6,129,459	\$2,588,040	\$10,558,107	\$8,683,381

IBM CONSULTING FEES

IBM Garage engagements were flexible, with cost and resources scaling relative to the ongoing needs of the project. Pivoted or cancelled projects had no risk of being committed to a long-term contract. Interviewees found the costs of IBM Garage to be on par for “top-tier” professional services, emphasizing that you get what you pay for with fast delivery, strong returns, and low risk. Low-cost engagements or do-it-yourself innovation efforts, on the other hand, often ended in failure for interviewed companies.

Modeling and assumptions. Forrester modeled costs assuming each team incurs \$600,000 in total costs over the six quarters, with the highest cost per team in the initial months and reducing as fewer IBM resources are actively engaged. Composite cash flows per team are modeled at \$150,000 per quarter

for the first six months, \$100,000 per quarter for months seven through 12, and \$50,000 per quarter for months 13 through 18.

Since the composite organization starts with a single pilot and increases the partnership to all teams by Q7, costs rise from Year 1 to Year 2 and then subsequently fall in Year 3 as delivery teams begin to work independently without need for IBM services, but still using the IBM Garage Methodology.

Risks. Costs will vary based on the number of resources desired, the level of expertise needed, the length of projects, the number of project teams, and the region in which the resources are located.

Synopsis. Forrester applied an upward risk adjustment of 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$7.8 million.

IBM Consulting Fees						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Number of projects conducted with the IBM Garage services team	Quarterly charts	0	12	48	30
F2	IBM Garage consulting fees	\$50K to \$150K per team, per quarter		\$1,650,000	\$5,400,000	\$1,950,000
Ft	IBM consulting fees	F2	\$0	\$1,650,000	\$5,400,000	\$1,950,000
	Risk adjustment	↑5%				
Ftr	IBM consulting fees (risk-adjusted)		\$0	\$1,732,500	\$5,670,000	\$2,047,500
Three-year total: \$9,450,000			Three-year present value: \$7,799,267			

PROJECT MANAGEMENT AND COORDINATION

Structured innovation as conducted in the IBM Garage Methodology requires cross-functional employees and leaders to play a direct role in innovation. Design thinking workshops bring together leaders, cross-functional employees, delivery teams, and end users (internal or customers) to empathize, ideate, and cocreate. Interviewed organizations generally led these sessions in-person but transitioned to virtual sessions at the beginning of the COVID-19 pandemic with little to no disruption. This time is well spent, as teams make decisions quickly with all job types and level in alignment as the project kicks off.

Throughout the project, leaders also play a crucial role in reviewing and eliminating impediments raised by the project teams (typically in biweekly meetings). This time is also well spent, as organizations can eliminate blockers that used to stop projects for weeks or months in a day or two — saving significant delivery labor costs and accelerating delivery.

Modeling and assumptions. Forrester has included an average of five cross-functional participants at

three days per project beyond the standard delivery team for design thinking sessions and other project coordination. Leaders dedicate 2 hours biweekly to impediment meetings and other project management and coordination with IBM Garage. Labor costs are valued at a fully burdened hourly salary of \$65 but will vary based on region, organization, and level.

Labor hours may (and likely will) be offset by labor savings from legacy processes; however, Forrester has included these costs to ensure conservatism.

Risks. Actual labor costs will vary by organization, type of project, project complexity, project scale, regional salaries, virtual versus in-person sessions, and the number of projects conducted. Organizations should be tactical about what projects to take on and when. Interviewees recommended starting with a small pilot, evaluating and adjusting to find culture fit and work through conflicts, and then show results to build up the engagement over time.

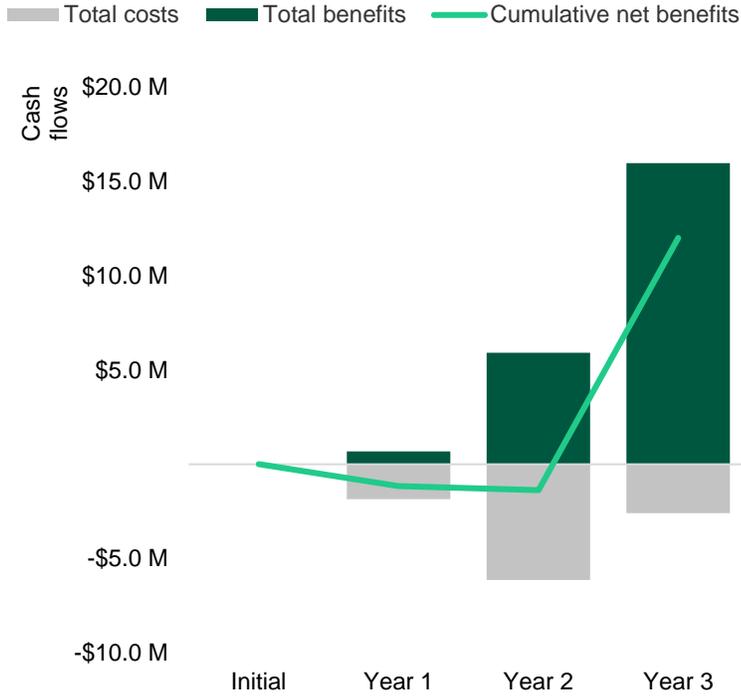
Synopsis. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$884,000.

Project Management And Coordination					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
G1	Number of projects using the IBM Garage method, with or without the IBM services team	Quarterly charts	12	51	60
G2	Project management and leadership hours per three-month project	4 hours per month	12	12	12
G3	Average number of cross-functional participants per project	Interview data	5	5	5
G4	Average hours per cross-functional participant	Interview data	24	24	24
G5	Hours of management and cross-functional support per project	$G2+G3*G4$	132	132	132
G6	Average fully burdened hourly salary	Forrester	\$65	\$65	\$65
Gt	Project management and coordination	$G1*G5*G6$	\$102,960	\$437,580	\$514,800
	Risk adjustment	↑5%			
Gtr	Project management and coordination (risk-adjusted)		\$108,108	\$459,459	\$540,540
Three-year total: \$1,108,107			Three-year present value: \$884,114		

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 and NPV for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI and NPV 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	\$0	(\$1,840,608)	(\$6,129,459)	(\$2,588,040)	(\$10,558,107)	(\$8,683,381)
Total benefits	\$0	\$687,428	\$5,909,398	\$15,967,221	\$22,564,047	\$17,505,145
Net benefits	\$0	(\$1,153,180)	(\$220,061)	\$13,379,181	\$12,005,940	\$8,821,764
ROI						102%

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."



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 studies commissioned by IBM

“The Total Economic Impact™ Of IBM Design Thinking,” a commissioned study conducted by Forrester Consulting on behalf of IBM, February 2018.

“Your Transformation Strategy Requires Structured Innovation,” an upcoming commissioned study conducted by Forrester Consulting on behalf of IBM, anticipated for release in Q4 2020.

Related Forrester Research

“Adopt Agile And DevOps To Drive Digital Business Success,” Forrester Research, Inc., January 7, 2020.

“Agile Leadership Requires A Different Kind Of Business Case,” Forrester Research, Inc., September 4, 2020.

“Build The Right Software Better And Faster With Agile And DevOps Metrics,” Forrester Research, Inc., November 29, 2018.

“Co-Innovate With Agile Development Service Providers To Deliver Better Software Faster,” Forrester Research, Inc., February 25, 2020.

“How To Successfully Structure Innovation Business Cases,” Forrester Research, Inc., November 25, 2019.

“Now Tech: Customer Experience Strategy Consulting Practices, Q3 2020,” Forrester Research, Inc., September 29, 2020.

“The Agile Enterprise Emphasizes Practice Over Process,” Forrester Research, Inc., July 2, 2020.

“The Business Impact Of Design: Five Best Practices For Measuring It,” Forrester Research, Inc., May 14, 2020.

“The Forrester Wave™: Application Modernization And Migration Services, Q3 2019,” Forrester Research, Inc., August 2, 2019.

“The Innovation Engine: Unleash Your Employees’ Potential To Innovate,” Forrester Research, Inc., February 26, 2020.

“The Pandemic Recession Demands A Digital Response,” Forrester Research, Inc., June 25, 2020.

“The ROI Of Design Thinking: Part 1, Overview,” Forrester Research, Inc., May 16, 2019.

“The ROI Of Design Thinking: Part 2, How To Calculate,” Forrester Research, Inc., July 15, 2020.

Appendix C: Endnotes

¹ Source: “Your Transformation Strategy Requires Structured Innovation,” an upcoming commissioned study conducted by Forrester Consulting on behalf of IBM, anticipated release November 2020.

² Net Promoter and NPS are registered service marks, and Net Promoter Score is a service mark, of Bain & Company, Inc., Satmetrix Systems, Inc., and Fred Reichheld.

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