

The Total Economic Impact™ Of FIS Code Connect

Cost Savings And Business Benefits Enabled By Code Connect

A FORRESTER TOTAL ECONOMIC IMPACT STUDY
COMMISSIONED BY FIS, MAY 2024

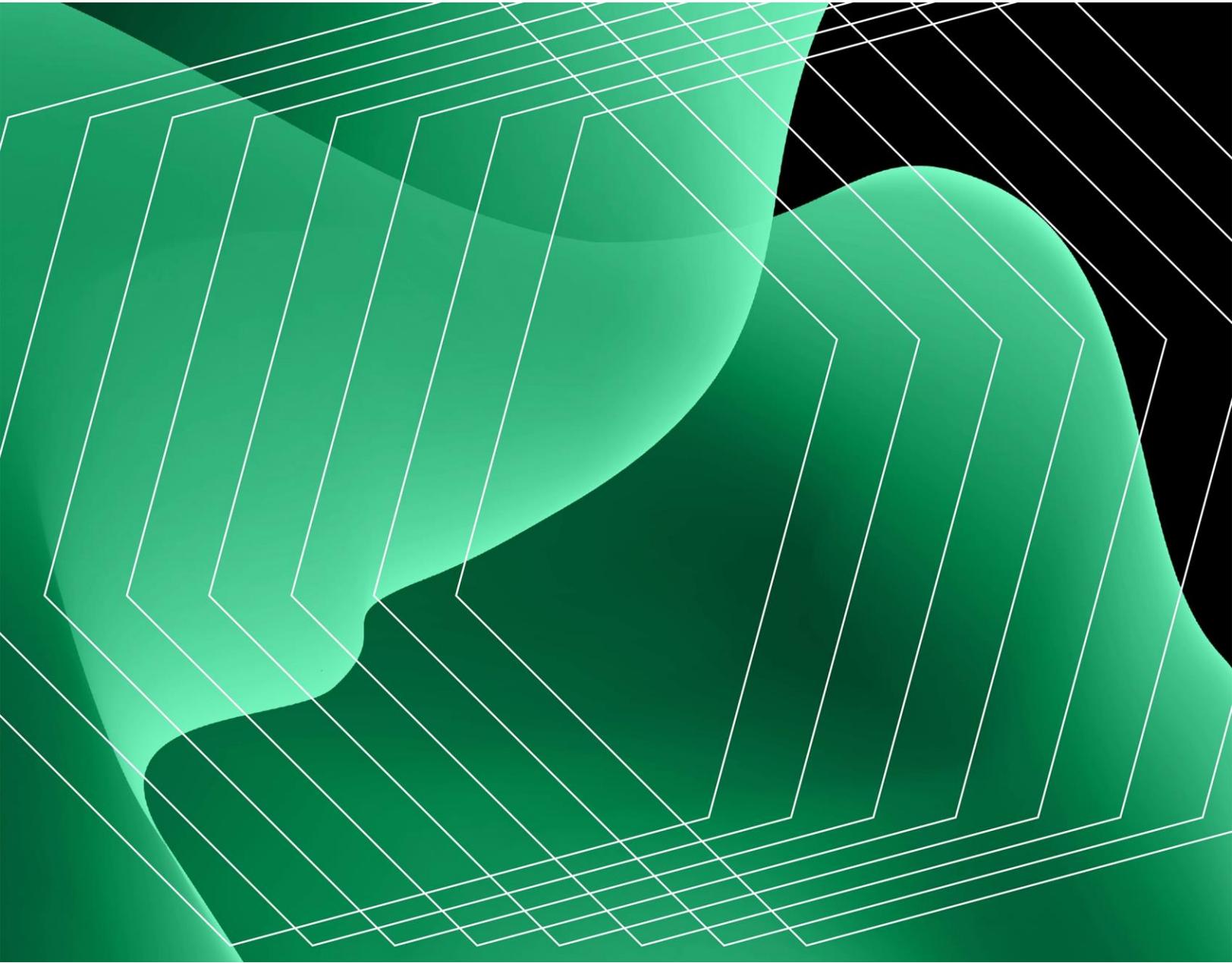


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Executive Summary

Many financial institutions face a critical challenge in evolving operations to meet modern customer expectations or they risk being outperformed in a landscape dominated by innovation and nimble, adaptive competitors. Modern application programming interface (API) ecosystems facilitate this transformation by streamlining complex API integrations, efficiently enhancing security measures, and enabling organizations to phase out obsolete systems. API ecosystems not only accelerate the delivery of new services, but they also unlock significant revenue opportunities, which can enable institutions to swiftly respond to emerging financial trends and customer needs.

FIS Code Connect is a modern API ecosystem tailored to optimize the integration of financial services for organizations of varying scales. It provides an extensive suite of tools, including robust developer documentation, interactive testing environments, and a broad selection of FIS proprietary and curated third-party APIs. This platform streamlines the entire development lifecycle, enhances security protocols, and facilitates compliance with evolving regulations. Code Connect not only simplifies the introduction of new financial services, but it also enables institutions to swiftly adapt to market shifts and compliance demands to help them remain competitive in a dynamic financial landscape.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed six representatives of four organizations with experience using Code Connect. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is in financial services and has assets totaling \$20 billion, annual revenue of \$500 million, and eight developers supporting 50 APIs.



Return on investment (ROI)

193%



Net present value

\$623K

Interviewees said that prior to using Code Connect, their organizations struggled with slow and cumbersome integration processes for financial services and often relied on outdated legacy systems. However, prior attempts yielded limited success, which left them with fragmented systems, inconsistent API interfaces, and prolonged development cycles. These limitations led to increased operational costs, reduced market responsiveness, and significant security and compliance challenges.

The interviewees reported that after investing in Code Connect, their organizations saw transformative improvement in their ability to integrate financial service capabilities rapidly and securely. Key results from the investment include expanded revenue opportunities, faster time to market, improved customer experience, enhanced developer productivity, a reduction in legacy costs, and an improvement in security posture.

KEY FINDINGS

Quantified benefits. Three-year, risk-adjusted present value (PV) quantified benefits for the composite organization include:

- **Increased developer team productivity by 20%.** Code Connect streamlines the composite organization's development processes with robust documentation and interactive testing environments, which significantly enhances its developer workflow efficiency. This improvement leads to a total benefit of \$346,000 over three years for the composite.
- **Increased IT security personnel productivity by 20%.** By simplifying security methods and enhancing compliance protocols, Code Connect boosts the productivity of the composite's IT security team, which allows it to adapt to regulatory changes more quickly and ensures better security management. The total three-year value of this productivity increase for the composite is \$264,000.

“The fact that we can bring new products to market so quickly [demonstrates that we operate in] a forward-thinking fintech environment. This positions our bank as more fintech-friendly and progressive compared to others of similar size.”

CHIEF OPERATING OFFICER, REGIONAL BANKING

- **Reduced legacy costs by \$135,000 per year.** The adoption of Code Connect enables the composite organization to decommission outdated systems and minimize its reliance on costly third-party services, which streamlines operations and reduces maintenance expenses. This shift results in an annual risk-adjusted cost reduction of \$135,000 for the composite, which totals \$336,000 over three years.

Unquantified benefits. Benefits that provide value for the composite organization but are not quantified for this study include:

- **Expanded revenue opportunities.** Code Connect facilitates growth by providing access to a diverse array of financial services, which enhances the ability for financial institutions to innovate and tap into new markets. The platform helps organizations swiftly capitalize on emerging financial trends and customer needs, fostering proactive growth and expanding revenue streams without the constraints of legacy systems.
- **Faster time to market.** Code Connect significantly reduces the time required to deploy new financial services by streamlining API integration. With an extensive library and expert support from FIS, the platform simplifies navigating complex integrations, which enables organizations to quickly respond to market trends and efficiently introduce new services, thereby maintaining a competitive edge.

- **Improved customer experience.** By transforming service offerings through advanced APIs, Code Connect facilitates enhanced customer interactions to make them more personalized and efficient. These improvements are aligned with best practices and emerging trends, which leads organizations to see higher customer satisfaction and increased loyalty. This capability supports a more engaging and comprehensive banking experience across various customer touchpoints.
- **Improved security posture.** Code Connect promotes stronger security measures within financial institutions by enabling the incorporation of advanced security features and access to ongoing support and deep understanding of industry-specific threats. Organizations can foster a more robust security framework, ensuring that sensitive data is effectively safeguarded against the evolving landscape of cyberthreats and enhancing their overall security postures.

Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **Code Connect fees.** Accessing Code Connect is free, but the composite organization incurs some fees for 24/7 support and other usage charges related to API calls. The composite's total costs over three years are \$323,000.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$946,000 over three years versus costs of \$323,000, adding up to a net present value (NPV) of \$623,000 and an ROI of 193%.



ROI

193%



BENEFITS PV

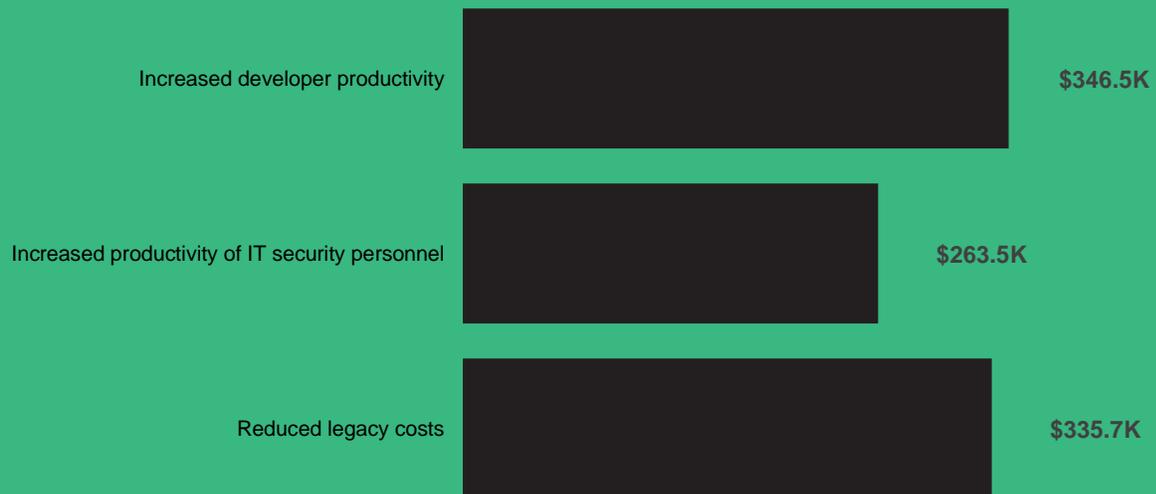
\$946K



NPV

\$623K

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

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

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 Code Connect can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by FIS 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 Code Connect.

FIS 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.

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

1. Due Diligence

Interviewed FIS stakeholders and Forrester analysts to gather data relative to Code Connect.

2. Interviews

Interviewed six representatives at four organizations using Code Connect to obtain data about costs, benefits, and risks.

3. Composite Organization

Designed a composite organization based on characteristics of the interviewees' organizations.

4. 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 interviewees.

5. 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 FIS Code Connect Customer Journey

Drivers leading to the Code Connect investment

Interviews					
Role	Industry	Region	Assets	Revenue	Applications supported
Chief operating officer IT operations manager	Regional banking	North America	\$1B	\$16M	<10
Director of engineering Software development manager	Financial services	North America	\$14B	\$330M	30+
Software engineering manager	Regional banking	North America	\$23B	\$341M	70+
Director of application services Chief systems officer	Regional banking	North America	\$24B	\$655M	60+

KEY CHALLENGES

Prior to implementing Code Connect, interviewees' organizations faced significant hurdles with manual and cumbersome integration processes that hampered their operations. The dependency on a variety of legacy systems and an assortment of third-party APIs resulted in fragmented technology landscapes, leading to inconsistent and inefficient development practices. These outdated methods not only drained resources, but they also lacked the necessary flexibility to swiftly adapt to evolving market demands and complex regulatory requirements. Such challenges severely impacted the ability of the institutions to maintain their competitive edge and operational efficiency.

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

- **Legacy system limitations.** A reliance on batch file uploads and outdated legacy systems led to numerous operational inefficiencies. These systems were not only costly and challenging to maintain, but they also lacked the flexibility and scalability necessary to introduce new services or adapt to changing customer expectations. The legacy systems hampered the growth of the organizations and

their ability to collaborate effectively with fintech partners to introduce new products.

The chief operating officer at a regional bank noted that this was a primary driver in their organization considering the adoption of an API ecosystem. They said, “[My organization has seen] natural growth as well as the willingness to partner with additional fintechs to bring more products to market, as opposed to trying to home-grow something.”

The director of engineering in financial services said: “[There] was a strategic direction where we were looking at the ability to have one identity [for the organization]. Our bank is not just a bank. [It also offers] wealth and insurance [services]. We were looking for a way to pull customer data all together and doing it more in a real-time fashion.”

“We knew [where] we needed to be on our growth and maturity curve. [We had to move away from] everything needing to be on-premises [and toward] focusing on cloud services, microservices, and APIs.”

CHIEF SYSTEMS OFFICER, REGIONAL BANKING

- **Integration complexity.** Financial services firms face fierce competition from digitally native companies. To meet these challenges, Forrester Research advises that “firms must embrace a process redesign strategy that aims to create a more efficient connection between customer and capital.”² Additional Forrester Research notes that “leading firms will use APIs not as mere connective tissue between applications, but as digital expressions of business capabilities that can be assembled in new ways to identify and explore new paths to market.”³

However, interviewees' organizations encountered significant difficulties when integrating APIs, which often led to prolonged development timelines and escalated costs. This complexity made it challenging to achieve seamless interactions between disparate systems and APIs, resulting in resource-intensive projects that could extend for months and impede the ability to quickly respond to new market opportunities or regulatory requirements.

The director of application services at a regional bank expressed frustration, noting: "Even if [developers were] aware of how something functions ... [they were] constantly looking at documentation versus being able to write code." The software development manager in financial services also shared a related challenge: "We had an attempt at a single sign-on platform across all of our online customer-facing platforms ... and it was looking like a lot of custom development that would have had to happen ... and it ended up just being a nonstarter for us."

- **Security and compliance concerns.** Interviewees' organizations struggled to meet stringent financial industry standards, especially when integrating old and new technologies, which often caused decision-makers to hesitate in adopting new, innovative capabilities. The software engineering manager at a regional bank addressed the transition challenges, stating: "When the industry was shifting from on-premises to cloud [solutions,] we needed middleware and back-end solutions that could operate without relying on private VPNs or special private connections. ... When we implemented on-premises APIs, the only protection we had were firewalls or access [control] on the LAN level."

"FIS is rigorously improving the platform all the time. ... They're moving versions along and adding more functionality."

SOFTWARE DEVELOPMENT MANAGER, FINANCIAL SERVICES

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 six interviewees, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The financial services organization has \$20 billion in assets and generates \$500 million in annual revenue. A team of eight developers supports 50 APIs.

KEY ASSUMPTIONS

\$20 billion in assets

\$500 million annual revenue

Supports 50 APIs

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	Increased developer productivity	\$139,320	\$139,320	\$139,320	\$417,960	\$346,468
Btr	Increased productivity of IT security personnel	\$105,975	\$105,975	\$105,975	\$317,925	\$263,544
Ctr	Reduced legacy costs	\$135,000	\$135,000	\$135,000	\$405,000	\$335,725
	Total benefits (risk-adjusted)	\$380,295	\$380,295	\$380,295	\$1,140,885	\$945,737

INCREASED DEVELOPER PRODUCTIVITY

Evidence and data. Interviewees told Forrester that Code Connect improved the productivity of their organization’s developer teams by simplifying development processes and the integration of APIs.

- The director of application services at a regional bank estimated their organization saw a 10% to 20% productivity gain for developers. They noted: “[Using Code Connect] is definitely a better user experience. Field names are actually [in] plain English versus [with] the legacy product, where it was the letter ‘E’ followed by six numbers, and you had to go decode each field by looking at documentation. ... For sure, there is an improvement in terms of productivity.”
- The software engineering manager at a regional bank estimated productivity gains between 20% and 25%. They said, “[Employees] can get more work done in the same amount of time.”

They continued: “Once we implement one API, the same API can be reused for multiple business units. ... [The time] it takes for spinning up new APIs versus old APIs and the maintenance is the biggest thing. [Not] maintaining those legacy systems has a huge impact on financial savings. It’s all cloud-based [and a]

hosted model instead of [an] on-premises model, so all those benefits [turn] into value.”

- The software development manager in financial services said, “The size of the [internal development] team has been relatively static [since implementing Code Connect], but we are doing much more internally.”
- The IT operations manager in regional banking said their financial institution doesn’t have a dedicated internal developer team. They said, “For what [Code Connect] gives us, we [would need] at least two full-time developers on staff.”

Increase in developer productivity

20%

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

- The internal developer team consists of eight FTEs.
- Code Connect improves the productivity of the team by 20%.
- The average fully burdened annual salary for a developer is \$129,000.
- Developers redirect 75% of the time savings to other value-added tasks.

Risks. This benefit can vary across organizations due to differences in:

- The number of internal developers.
- The number of APIs supported.

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 \$346,000.

“[Code Connect] allowed us to get by without spending the time and resources on developing our own APIs. Having Code Connect [has] taken that headache away from us.”

IT OPERATIONS MANAGER, REGIONAL BANKING

Increased Developer Productivity					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Developer team members	Composite	8	8	8
A2	Productivity improvement with Code Connect	Interviews	20%	20%	20%
A3	Fully burdened annual salary for a developer	TEI standard	\$129,000	\$129,000	\$129,000
A4	Productivity recapture	TEI standard	75%	75%	75%
At	Increased developer productivity	$A1 \cdot A2 \cdot A3 \cdot A4$	\$154,800	\$154,800	\$154,800
	Risk adjustment	↓10%			
Atr	Increased developer productivity (risk-adjusted)		\$139,320	\$139,320	\$139,320
Three-year total: \$417,960			Three-year present value: \$346,468		

INCREASED PRODUCTIVITY OF IT SECURITY PERSONNEL

Evidence and data. Interviewees reported that Code Connect streamlines the workloads of IT security teams by providing a robust, standardized security framework and ensuring compliance with current API standards. They explained that this reduces or eliminates the need for audits and allows security measures to be consistently applied across new operations.

- The IT operations manager at a regional bank said: “[FIS] is pretty active with their security audit and compliance framework adoption. They just send it over to

ANALYSIS OF BENEFITS

our compliance and security departments, and they don't really have to do any sort of external audits. FIS has done all the work for us, and they keep us up on API standards. ... [Without Code Connect,] we'd need a security [FTE]."

- The software engineering manager at regional bank said: "Security [measures] are consistent, so we don't have to reinvent the wheel every time we implement new operations."

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

- Code Connect enables the composite to save the equivalent of the effort of one IT security FTE per year.
- The fully burdened average annual salary for an IT security FTE is \$157,000.
- IT security personnel redirect 75% of the time saved to other value-added tasks.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of internal IT security personnel.
- The nature, level, and complexity of the organization's security policies and procedures.

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 \$264,000.

Increased Productivity Of IT Security Personnel					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	IT security FTEs saved with Code Connect	Interviews	1	1	1
B2	Fully burdened average annual salary of IT security FTE	TEI standard	\$157,000	\$157,000	\$157,000
B3	Productivity recapture	TEI standard	1	1	1
Bt	Increased productivity of IT security personnel	B1*B2*B3	\$117,750	\$117,750	\$117,750
	Risk adjustment	↓10%			
Btr	Increased productivity of IT security personnel (risk-adjusted)		\$105,975	\$105,975	\$105,975
Three-year total: \$353,250			Three-year present value: \$263,544		

REDUCED LEGACY COSTS

Evidence and data. Interviewees offered some examples of how Code Connect allowed their organizations to decommission some legacy solutions and reduce expenditures on third-party services.

- The chief systems officer and software engineering manager discussed decommissioning legacy software and servers as their organization reduced its reliance on on-premise solutions. The bank's total annual savings are between \$150,000 and \$250,000.
- The IT operations manager at another regional bank estimated their organization saves between \$50,000 and \$70,000 a year on security services it would need without Code Connect.

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

- Decommissioning its legacy solutions saves the composite \$100,000 per year.
- Reducing its reliance on third-party security services saves the composite \$50,000 per year.

Risks. This benefit can vary across organizations due to differences in:

- The ability to decommission and reduce expenditures on software, servers, and other legacy solutions.
- Reliance on third-party security services.

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 \$336,000.

ANALYSIS OF BENEFITS

Reduced Legacy Costs					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Cost savings from decommissioned legacy solutions	Composite	\$100,000	\$100,000	\$100,000
C2	Cost savings from reduced security and other professional services	Composite	\$50,000	\$50,000	\$50,000
Ct	Reduced legacy costs	C1+C2	\$150,000	\$150,000	\$150,000
	Risk adjustment	↓10%			
Ctr	Reduced legacy costs (risk-adjusted)		\$135,000	\$135,000	\$135,000
Three-year total: \$405,000			Three-year present value: \$335,725		

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

- Expanded revenue opportunities.** Code Connect enables significant growth by broadening access to diverse financial services. This allows organizations to quickly meet evolving customer needs and open new revenue streams. Forrester Research notes: “By allowing business activity to flow within and between organizations in real time, APIs can transform how you design and deliver change, unlock new revenue streams as a business development tool, and extend your value proposition. ... APIs need to be core within your strategy, not adjunct.”⁴

Interviewees discussed how leveraging the advancements in API technology offered through Code Connect was just not possible on their organizations’ legacy systems without extensive custom development. They described Code Connect as foundational to standing up a next-generation banking platform. The director of engineering in financial services emphasized the importance of real-time functionality that Code Connect provides their organization, and the chief operating officer at a regional bank discussed how their organization implemented an insured cash sweep API through Code Connect and the subsequent boost to the bank’s deposits and revenues.

- **Faster time to market.** Interviewees said streamlined API integration through Code Connect drastically cuts down development and testing times, which enables financial institutions to rapidly launch new services and stay ahead of market trends.

The chief operating officer at a regional bank said: “[Code Connect has] certainly allowed us to look at banking as a service as a totally new vertical for us. It has allowed us to go into the market and look at various fintech [and] financial offerings and then bring that to our customers relatively quickly. ... With our ability to bring a fintech partner on as opposed to doing the development ourselves, I absolutely believe that speeds up time to market. [Some APIs] could be a year’s worth of work. ... We expect to get about \$400 million in deposits as a result of that.” The software engineering manager at a different regional bank also emphasized the efficiency of Code Connect, noting how the reduced time it takes to move an API from concept to production environment greatly accelerates time to market.

“[Implementing Code Connect] was almost a non-event for us. We just accepted it, and then the first fintech started working with it. It is a very easy lift for a bank to be able to offer a lot of powerful services.”

CHIEF OPERATING OFFICER, REGIONAL BANKING

- **Improved customer experience.** According to Forrester Research, “To improve CX, business and technology professionals from banks say they are improving omnichannel experiences and in-person experiences, leveraging emerging technologies for customers to engage with, improving virtual experiences, and creating a unified digital experience.”⁵

Interviewees said Code Connect transforms customer interactions through APIs that enhance service personalization and efficiency and that these improvements

align with best practices and current trends to drive higher customer satisfaction and loyalty. Reflecting on customer engagement, the chief operating officer at a regional bank said, “We certainly are going to gain customers through the use of banking as a service, so there will be growth there.” And the software engineering manager at another regional bank highlighted how Code Connect impacted various business units and enhanced the customer experience across the board, including with new mobile applications.

“The overall customer experience has been improved using Code Connect, which enabled business units to explore more modern SaaS-based and cloud-based solutions. The benefits you realize go to either the customer or internal employees from whichever system we’re exposing to them.”

SOFTWARE ENGINEERING MANAGER, REGIONAL BANKING

- **Improved security posture.** Interviewees said Code Connect enhances security measures within financial institutions by focusing on secure API connections and leveraging the support of FIS and that this approach not only strengthens data protection, but also ensures compliance with stringent industry standards. The IT operations manager at a regional bank said, “Having API connectivity does present a risk, [but] we did feel that the strength of [Code Connect] was definitely a mitigation [of] those risks.”

Additionally, the chief operating officer at a different regional bank discussed how Code Connect has automated access controls. They said: “Leavers and joiners equate to about 250 [personnel] changes, not including promotions. The majority of their access for [Code Connect], both exceptions to desktop and [insured bank sweep], is automated through the APIs. ... Automating all that access [and] having it consistent from a control and security standpoint has been really valuable and reduces manual tasks.”

- The software engineering manager at a different regional bank said, “In terms of [API platform services security,] we are in a better state than we used to be.”

FLEXIBILITY

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

- **Scalability for business growth.** Interviewees discussed how Code Connect helps support the expansion of services to new markets or customer segments without the need for significant infrastructure changes. They said this scalability not only supports business growth, but that it also ensures companies can maintain high levels of service during peak times.

The software engineering manager at a regional bank said: “One of the biggest benefits [of Code Connect is the] integrations to other FIS services. ... Digital debit card APIs, bill payments, image integration, [and] all those integrations are possible because FIS has implemented one single entry point for all these downstream systems. ... It enabled the bank to have a more consistent approach in onboarding new feature sets. It’s an intangible thing, but it has a huge benefit on how we approach future solutions.”

- **Adaptability to regulatory changes.** Interviewees also mentioned the ease of compliance adjustments through Code Connect and said this enables their organizations to quickly adapt to new regulatory requirements. They explained that the platform’s agile framework and regular updates allow their organizations to implement changes with minimal disruption, ensuring continuous compliance. This adaptability is crucial in the financial sector in which regulations can evolve rapidly and affect how services must be offered and managed.

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

“[Code Connect] is a lot faster [than other solutions]. From requirements to development to testing to execution, it’s a much shorter pathway.”

SOFTWARE DEVELOPMENT MANAGER, FINANCIAL SERVICES

Analysis Of Costs

Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Dtr	Code Connect fees	\$22,000	\$121,000	\$121,000	\$121,000	\$385,000	\$322,909
	Total costs (risk-adjusted)	\$22,000	\$121,000	\$121,000	\$121,000	\$385,000	\$322,909

CODE CONNECT FEES

Evidence and data. Interviewees said their organizations paid fees to FIS for support in implementing APIs and other usage charges related to API calls. Their initial fees averaged \$20,000, and their ongoing fees averaged \$110,000 per year.

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

- The composite pays \$20,000 up front to begin implementing APIs through Code Connect.
- The composite incurs fees of \$110,000 annually for support and usage fees related to API calls.
- Pricing may vary. Contact FIS for additional details.

Risks. Fees paid to Code Connect can vary across organizations due to differences in:

- The number and nature of APIs deployed.
- The volume of API calls.

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 \$323,000.

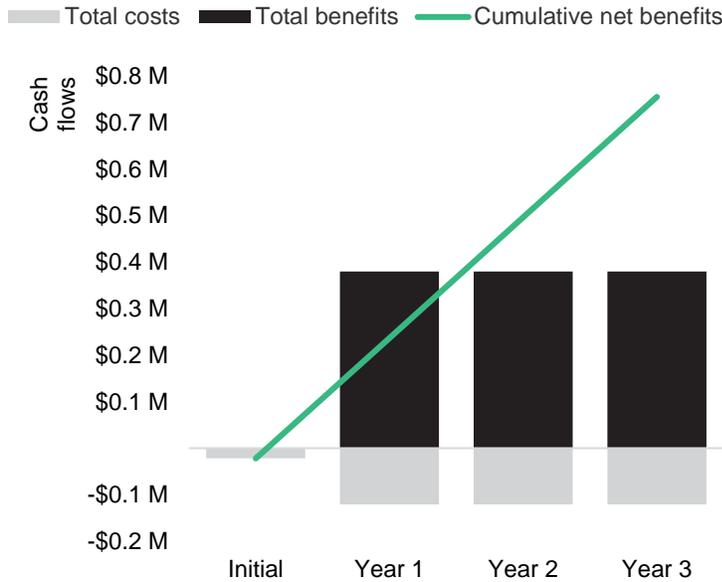
ANALYSIS OF COSTS

Code Connect Fees						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
D1	One-time fees	Interviews	\$20,000			
D2	Recurring fees	Interviews		\$110,000	\$110,000	\$110,000
Dt	Code Connect fees	D1	\$20,000	\$110,000	\$110,000	\$110,000
	Risk adjustment	↑10%				
Dtr	Code Connect fees (risk-adjusted)		\$22,000	\$121,000	\$121,000	\$121,000
Three-year total: \$385,000			Three-year present value: \$322,909			

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	(\$22,000)	(\$121,000)	(\$121,000)	(\$121,000)	(\$385,000)	(\$322,909)
Total benefits	\$0	\$380,295	\$380,295	\$380,295	\$1,140,885	\$945,737
Net benefits	(\$22,000)	\$259,295	\$259,295	\$259,295	\$755,885	\$622,828
ROI						193%

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.

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.

APPENDIX B: SUPPLEMENTAL MATERIAL

Related Forrester Research

[Banks Must Wake Up To A New Customer: The Developer](#), Forrester Research, Inc., May 21, 2020.

[The Forrester Guide To Technical Debt](#), Forrester Research, Inc., April 27, 2022.

[Growing Deposits By Going Beyond Offering Great Rates](#), Forrester Research, Inc., November 8, 2023.

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.

² Source: [Envisioning End-To-End Process Redesign In Financial Services](#), Forrester Research, Inc., March 17, 2022.

³ Source: [The Future Of Fintech](#), Forrester Research, Inc., January 5, 2024.

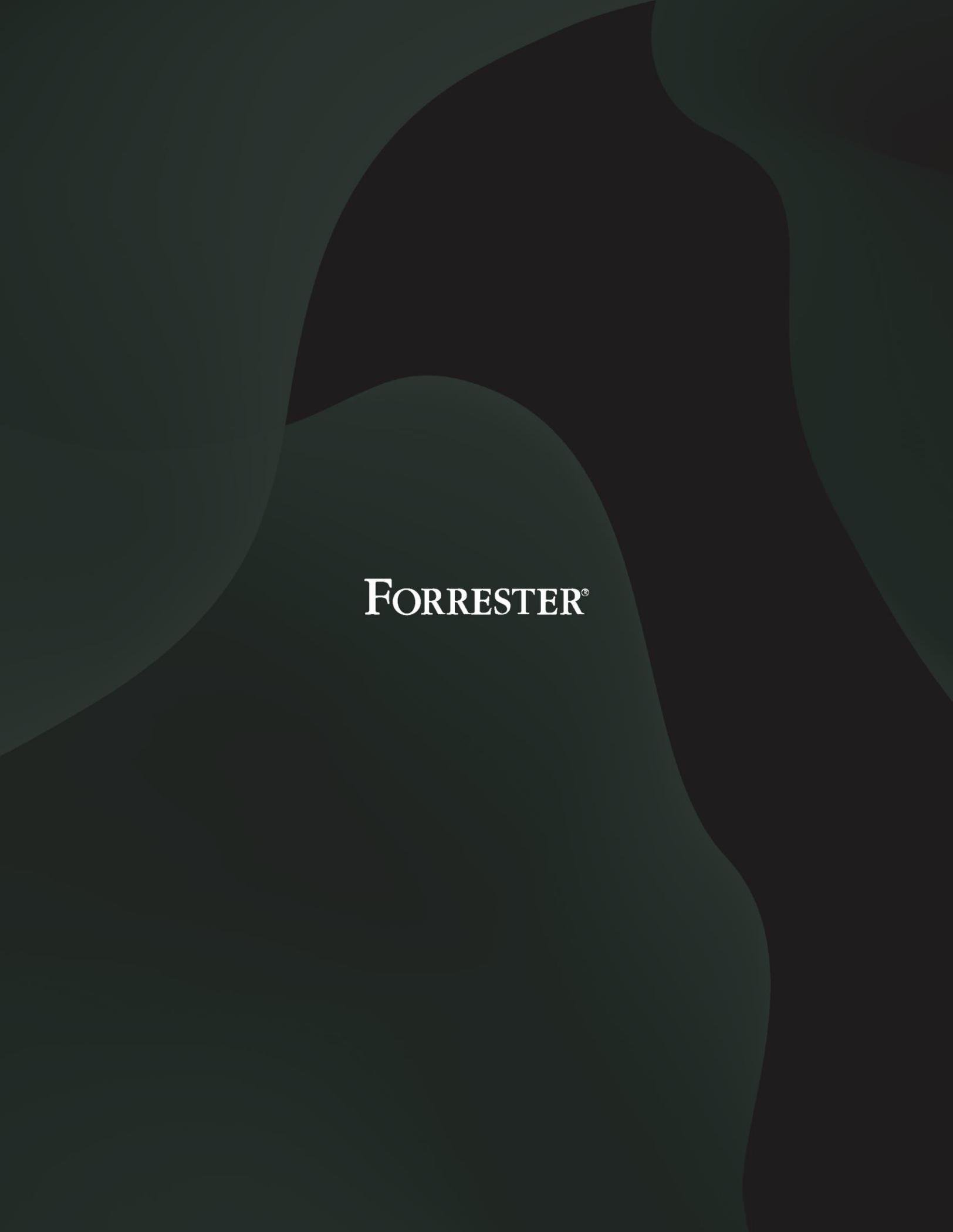
⁴ Source: [Four Ways APIs Are Changing Banking](#), Forrester Research, Inc., October 24, 2018.

⁵ Source: [Consumer Banking Trends, 2024](#), Forrester Research, Inc., January 17, 2024.

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