

FORRESTER®

The Total Economic Impact™ Of Progress OpenEdge 12.x

Cost Savings And Business Benefits
Enabled By Progress OpenEdge 12.x

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ABOUT FORRESTER CONSULTING

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Executive Summary

OpenEdge 12.x is the most recent evolution of the application development and deployment platform that developers have relied on for decades to build mission-critical applications for customers. Independent Software Vendors (ISVs) that adopted the Progress Application Server (PAS) and OpenEdge 12.x experienced operational performance savings, developer productivity improvements, revenue growth, and better developer retention.

Progress Software commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Progress [OpenEdge® 12.x](#). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of OpenEdge 12.x on their organizations.

Progress provides an application development platform that helps its customers simplify the delivery of business applications. The newest version, OpenEdge 12.x, provides new capabilities around improved performance, high availability, agility, and security atop the existing platform that companies have been using for decades.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed two decision-makers from independent software vendors (ISVs) with experience upgrading to OpenEdge 12.x. For the purposes of this study, Forrester aggregated the experiences of the ISVs and combined the results into a single [composite organization](#).

Both interviewees' organizations have been developing applications on OpenEdge for decades, and they have been making regular upgrades to new versions to keep pace with advancing technologies and customer needs.

The interviewees said that after upgrading to OpenEdge 12.x, their organizations saw better

KEY STATISTICS



Return on investment (ROI)

140%



Net present value (NPV)

\$511,376

stability, scalability, performance at scale, and enhanced security.

KEY FINDINGS

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

- **Database performance improvements save nearly 316,000 processing hours.** The interviewees said increased database performance sped up nightly batch jobs, saving 80 minutes per customer per night. Over three years, this performance improvement is worth \$44,555 to the composite organization.
- **Environment stability and speed increases developer productivity by 6%.** The interviewees said their organizations' developers avoided 30 minutes of wait time per day with OpenEdge 12.x. Over three years, developer

productivity improvement is worth more than \$268,404 to the composite organization.

- **Revenue growth of 6% to 8% from both new and existing customers.** Enhanced security features of 12.x helped the interviewees' ISVs to retain, attract, and expand their customer bases. This increased revenues by 6% to 8%. After applying a 25% net margin, the incremental net income is worth \$421,046 to the composite organization over three years.
- **Developer retention rates improve by up to 50%.** The interviewees noted that the modernization of OpenEdge 12.x helped their organizations attract and retain young developers who want to work with modern technology. Over three years and a cumulative total of 18.6 months of avoided developer onboarding time, the retention improvement is worth \$142,693 to the composite organization.

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

- **Modern user experience improves customer experience (CX).** The interviewees said having a fresh customer interface, using Kendo UI, built on OpenEdge 12.x, provided a night and day difference to the user experience compared to their previous environments. Coupled with performance improvements, the ISVs' developers also provided positive reactions and said they were more satisfied.
- **Organizations using applications built on OpenEdge 12.x avoid lost revenues.** Stability of OpenEdge is key for mission-critical applications. For customers of the ISVs, application downtime can result in lost revenues, brand degradation, and productivity lag. One interviewee estimated a single day of downtime results in \$80,000 of revenue loss.
- **New application server drives savings.** The adoption of Progress Application Server for

OpenEdge (PAS for OpenEdge) helped the interviewees' organizations reduce memory requirements and infrastructure costs.

Costs. Risk-adjusted PV costs include:

- **Implementation and training for 10 developers.** The composite organization requires three resources and two months to implement OpenEdge. The development team also receives five hours of training on the new platform. The total costs of implementation and training are less than \$69,200.
- **Implementation and licensing for the Progress Application Server for OpenEdge replacement of the classic Application Server, OpenEdge AppServer.** Six of the composite organization's developers spend 50% of their time over the course of four months on the initial code change, and then functional and performance testing of the new application server. Licensing, maintenance, and support fees are 25% more than they are for the classic application server. The total costs of the composite organization's adoption of the new application server are \$296,100.

The customer interviews and financial analysis found that a composite organization experiences benefits of nearly \$876,700 over three years versus costs of more than \$365,300, adding up to a net present value (NPV) of \$511,400 and an ROI of 140%.



ROI
140%



BENEFITS PV
\$876,700

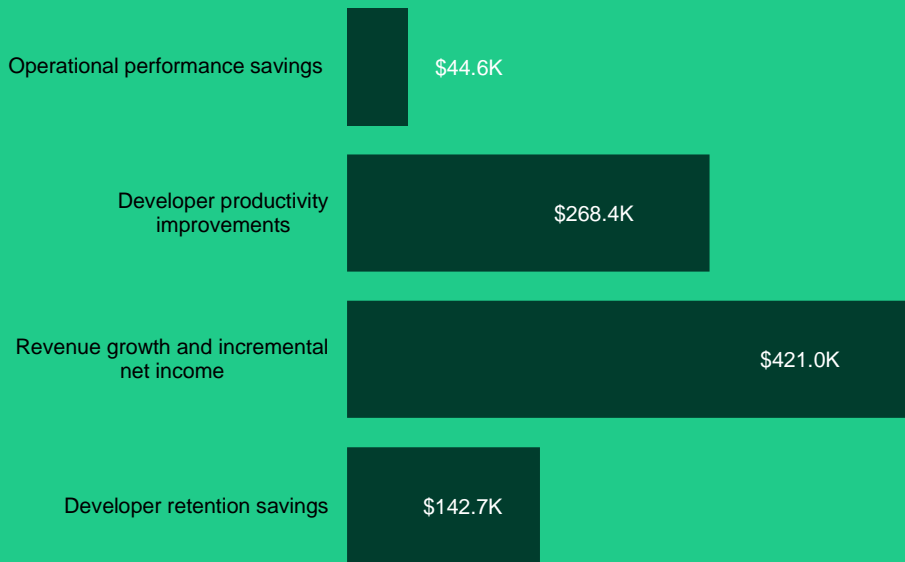


NPV
\$511,400



PAYBACK
<1 year

Benefits (Three-Year)



We've seen quite a drastic improvement in the performance and scalability with [OpenEdge] 12.x

— CIO, workforce management software ISV

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 OpenEdge 12.x.

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 OpenEdge 12.x can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Progress 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 OpenEdge 12.x.

Progress 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.

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



DUE DILIGENCE

Interviewed Progress stakeholders and Forrester analysts to gather data relative to OpenEdge 12.x.



CUSTOMER INTERVIEWS

Interviewed two decision-makers at organizations using OpenEdge 12.x to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

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



FINANCIAL MODEL FRAMEWORK

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



CASE STUDY

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

The Progress OpenEdge 12.x Customer Journey

Drivers leading to the OpenEdge 12.x investment

Interviewed Organizations			
Industry	Region	Interviewee	Key facts
Workforce management software ISV	Headquartered in Europe	CIO	\$9 million in revenue, 60 employees, 14 OpenEdge developers
Financial software ISV	Headquartered in North America	Product manager	\$10 million in revenue, 30 employees, five OpenEdge developers

INTERVIEWED ORGANIZATIONS

For this study, Forrester conducted in-depth interviews with decision-makers from two ISVs to understand their organizations' upgrade rationales, and their business environments and past experiences with OpenEdge. Both organizations had decades-long histories of developing applications on OpenEdge, and they moved from OpenEdge 11.7 to OpenEdge 12.x in October 2019.

“Progress is a business language that allows us to build out very complicated business logic and database architectures while we have any technology in our front-end to present the information to our user community — whatever is the latest and greatest technology.”

Product manager, financial software ISV

UPGRADE RATIONALE

The interviewees said their companies upgraded to OpenEdge 12.x because of these key drivers:

- **To keep pace with advancing technology.** To continue to provide the best experience to their organization's customers, the product manager said, “As Progress releases new releases, we investigate them to figure out what we're getting

out of them, and we always work them into our development cycles.”

- **To harness powerful new performance and scalability features.** The same interviewee said new features like multithreaded database servers and server-side, multi-table joins were an appealing reason to upgrade. They shared: “With the server-side joins, we're able now to scale our environments. In [OpenEdge] 11.x, every query we make on a Progress database has to be done client-side, and that puts a lot of load on one internet connection to move that data back and forth. Now, with [OpenEdge 12.x], we can put the load on the database server, and I can pick up all my processes and move them to a server beside it. Now my pipe doesn't have to be quite so big between the database and the clients.”

“We are a large, complex application with a lot of data being gathered every day. So, the performance of [OpenEdge 12.x] was super-important.”

CIO, workforce management software ISV

- **To fortify security with out-of-the box configurations.** The interviewees said keeping up with changing regulatory requirements and protecting customer data was top-of-mind for

both ISVs' decision-makers. The CIO shared: “[The security features were] strong motivators for moving to [OpenEdge 12.x]. Many of our customers are moving toward the cloud, and with [OpenEdge 12.x], we can configure instead of code security scenarios because the OpenEdge application supports the new security protocols out of the box.

- **To automate and modernize application delivery.** Interviewees said their organizations turned to OpenEdge 12.x to make developers more agile and to empower them to meet customer needs and growing expectations.

“OpenEdge is the modern toolbox to execute on business strategy. The business strategy for us is to satisfy customers with a modern user experience, security, and performance. And that’s what OpenEdge [12.x] can provide.”

CIO, workforce management software ISV

organization has a long history of using OpenEdge products, with more than 20 years of experience with the technology.

The composite organization has approximately 200 customers and earns an average of \$50,000 per year per customer, and it has a net income margin of 25%. The company is growing annually at 5%.

Deployment characteristics. The composite organization upgrades from its previous OpenEdge 11.x environment to OpenEdge 12.x.

“We are a nice, 25-year-old ISV with a very large legacy platform. So, we are on a classic modernization journey of this large application.”

CIO, workforce management software ISV

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 interviewees' companies, 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 composite ISV is a \$10 million B2B software distributor and service provider. It earns 70% of its revenue from software sales and 30% from services provided to customers. The organization has 50 employees, and 10 are developers using OpenEdge. The composite

Key assumptions

- **\$10 million revenue**
- **70/30 software/services**
- **10 OpenEdge developers**

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	Operational performance savings	\$16,644	\$17,976	\$19,391	\$54,010	\$44,555
Btr	Developer productivity improvements	\$99,180	\$108,472	\$117,920	\$325,571	\$268,404
Ctr	Revenue growth and incremental net income	\$135,000	\$170,100	\$209,952	\$515,052	\$421,046
Dtr	Developer retention savings	\$34,200	\$60,420	\$82,080	\$176,700	\$142,693
	Total benefits (risk-adjusted)	\$285,024	\$356,967	\$429,342	\$1,071,333	\$876,698

OPERATIONAL PERFORMANCE SAVINGS

A major reason the interviewees' organizations upgraded to OpenEdge 12.x was to take advantage of the new and improved database performance capabilities. The ability to execute dynamic queries with joins on the server-side improved performance of advanced business language (ABL) queries. The reason to multithread the OpenEdge database server is to improve the amount of data that can be concurrently retrieved by an individual server that is servicing multiple remote clients. As a result, the benefits of deploying OpenEdge in a multitier (N-tier) architecture outweigh any performance impact associated with running with a transmission control protocol (TCP) networked connection. Interviewees shared examples of processes that were dramatically sped up after their organizations adopted OpenEdge 12.x. The CIO said: "One of our customers had some very long-running batch jobs that were getting so long that we couldn't do them within the nightly windows. When we deployed the new version to them, I got a report back that it was so fast that [the customer] was not sure we were even running the jobs! Instead of running for 1.5 hours, it was done in 10 minutes."

The other interviewee said their organization also experienced a performance jump after deploying OpenEdge 12.x. The product manager shared summaries of performance metrics scans comparing the speed of nightly processes before and after the OpenEdge 12.x adoption. They said: "With [OpenEdge 12.x], we're redesigning some of our architectures because its more stable now. The smaller we can get these numbers, the better. Because now I can accomplish more in a nighttime run." The interviewee said their organization has seen nightly time savings of approximately 80 minutes.

"With OpenEdge 12.x we have experienced a 200% to 300% raw processing improvement in many application areas. Across the product platform, it is a 150% to 200% performance improvement."

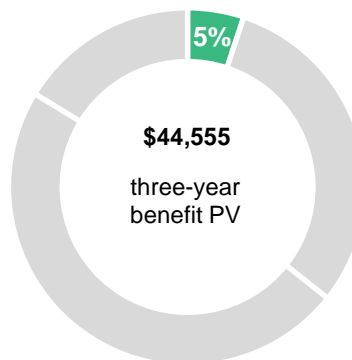
CIO, workforce management software ISV

Modeling and assumptions. To reflect the experiences of the interviewees' organizations, Forrester makes the following assumptions about the composite organization:

- The organization eliminates 80 minutes of batch processing time per day per customer.
- The organization organically increases its processing volume by 8% each year.
- The redirection of unused compute power to save on cloud spending saves \$0.19 cents per core hour.

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on the complexity and duration of the processes performed. Readers should also consider the cost per core hour, which may vary by cloud service provider. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$44,555.

Operational Performance Savings



Operational Performance Savings					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Core hours recycled annually from improved performance	80 minutes per day per customer, 8% annual growth	97,333	105,120	113,393
A2	Price per core hour	Assumption	\$0.19	\$0.19	\$0.19
At	Operational performance savings (rounded)	A1*A2	\$18,493	\$19,973	\$21,545
	Risk adjustment	↓10%			
Atr	Operational performance savings (risk-adjusted)		\$16,644	\$17,976	\$19,391

DEVELOPER PRODUCTIVITY IMPROVEMENTS

The OpenEdge 12.x development environment is more stable than that of its predecessor's, and the interviewees noted that screens that had previously been slow to load became very responsive. This reduced wait times. Developers also experienced productivity lifts as a result of being able to better communicate best practices to customers. This shortened meetings and provided more time for developers to work on other tasks. The interviewees also noted that communicating these best practices more effectively saved developers 2 to 3 hours per customer per yearly security audit.

“The biggest change that developers have noticed is that the development environment is a lot more stable. That easily saves them 30 minutes per day and now they tell me it’s very responsive.

Product manager, financial software ISV

Modeling and assumptions. To reflect the experiences of the interviewees’ organizations, Forrester makes the following assumptions about the composite organization:

- The organization has 10, 11, and 12 OpenEdge developers in Years 1, 2, and 3, respectively.
- As a result of moving to OpenEdge 12.x, the developers experience a 6% productivity lift, or 30 minutes each day.
- The annual burdened cost of a developer is \$120,000.

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on the number of developers, their annual burdened cost, and the extent to which they are impacted by better stability and other productivity lift factors. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$268,404.

Developer Productivity Improvements

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Number of developers	Composite	10	11	12
B2	Number of additional productive hours per developer	30 minutes per day x 260 days/ 60 minutes	130	130	130
B3	Subtotal: Number of additional developer productive hours	B1*B2	1,300	1,430	1,560
B4	Avoided hours of customer management	3 hours per customer per year	600	648	699
B5	Subtotal: Additional hours of productivity for developers	B3+B4	1,900	2,078	2,259
B6	Burdened hourly cost of developer (rounded)	\$120,000/2,080 hours	\$58	\$58	\$58
Bt	Developer productivity improvements	B5*B6	\$110,200	\$120,524	\$131,022
	Risk adjustment	↓10%			
Btr	Developer productivity improvements (risk-adjusted)		\$99,180	\$108,472	\$117,920

REVENUE GROWTH AND INCREMENTAL NET INCOME

PAS for OpenEdge featured new security protocols to support cloud migration that helped the interviewees' organizations keep up with important security demands for their customers. The organizations experienced two security-driven outcomes. First, better security helped them retain existing customers amid changing regulatory environments. Second, new and improved offerings increased demand for consulting, which increased service revenues. When highlighting new features and safety in RFPs for new business, one interviewee said their organization experienced an increase of 5% to 8% in new revenue.

“OpenEdge 12.x helped us retain customers and drive add-on business since they want to take advantage of our new features. I know it’s a key part in winning new business because we can meet our customers’ security requirements.”

CIO, workforce management software ISV

Modeling and assumptions. To reflect the experiences of the interviewees' organizations, Forrester makes the following assumptions about the composite organization:

- The organization has annual revenues of \$10 million and annual organic revenue growth of 8% before adopting OpenEdge 12.x.
- Through winning new business and offering new security-driven consulting services, revenue increases by 6%, 7%, and 8% in Years 1, 2, and 3, respectively.

- To capture only the bottom-line impact of this benefit, Forrester applied a net income margin of 25%.



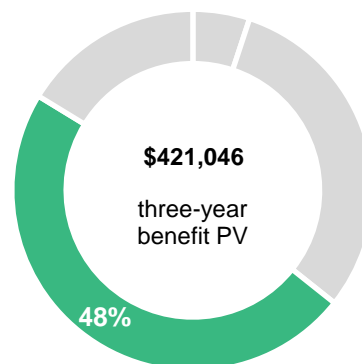
Revenue Growth Between

6% to 8%

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on the degree to which the organization is able to drive new business and upsell consulting services to existing customers. Net income margin will also impact the overall impact of the benefit.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$421,046.

Revenue Growth And Incremental Net Income



Revenue Growth And Incremental Net Income					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Annual revenue	Composite: 8% organic annual growth	\$10,000,000	\$10,800,000	\$11,664,000
C2	Revenue growth driven by OpenEdge 12.x	Assumption	6%	7%	8%
C3	Incremental revenue driven by OpenEdge 12.x	C1*C2	\$600,000	\$756,000	\$933,120
C4	Net income margin	Composite	25%	25%	25%
Ct	Revenue growth and incremental net income (rounded)	C3*C4	\$150,000	\$189,000	\$233,280
	Risk adjustment	↓10%			
Ctr	Revenue growth and incremental net income (risk-adjusted)		\$135,000	\$170,100	\$209,952

DEVELOPER RETENTION SAVINGS

The ability to attract and retain developers is a challenge for many organizations, and technology can contribute to the success or failure of these efforts. The interviewees noted that the new tools for developer productivity, continuous integration/continuous delivery (CI/CD) testing, and automation included with OpenEdge 12.x helped their organizations to attract and retain young developers who demand modern technology. The CIO said: “Syntax and the coding can be learned fairly easily. But understanding the business and how to provide value is harder. So we get value in retaining our developers to help tap into and utilize all of that existing knowledge.”

Modeling and assumptions. To reflect the experiences of the interviewees’ organizations, Forrester makes the following assumptions about the composite organization:

- When fully staffed, the organization has 10, 11, and 12 OpenEdge developers in Years 1, 2, and 3, respectively.

- Before adopting OpenEdge 12.x, the composite organization had a 24% average turnover rate for its developers. It lost approximately two to three developers each year.
- After adopting OpenEdge 12.x, retention improves by 25%, 40%, and 50% in Years 1, 2, and 3. This reduces the turnover rates to 18%, 14%, and 12%, respectively.
- A new developer takes six months to get to a state of productivity for the organization.
- The monthly burdened cost of a developer is \$10,000.

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on previous environment turnover rates, the burdened costs of a developer, and the amount of time it takes a developer to become productive. Other characteristics like company culture and market conditions will also contribute to an organization’s ability to attract and retain developers.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$142,693.

Developer Retention Savings					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Number of developers when fully staffed	Composite	10	11	12
D2	Developer turnover prior to OpenEdge 12.x adoption	Interviews	24%	24%	24%
D3	Improved retention after adoption	Composite	25%	40%	50%
D4	Developer turnover after adoption	$D2*(1-D3)$	18%	14%	12%
D5	Number of new FTEs avoided	$(D1*D2)-(D1*D4)$	0.60	1.06	1.44
D6	Number of months before productivity for new developers	Interviews	6	6	6
D7	Burdened monthly cost of developer	$\$120,000/12$ months	\$10,000	\$10,000	\$10,000
Dt	Developer retention savings	$D5*D6*D7$	\$36,000	\$63,600	\$86,400
	Risk adjustment	↓5%			
Dtr	Developer retention savings (risk-adjusted)		\$34,200	\$60,420	\$82,080

UNQUANTIFIED BENEFITS

Additional benefits that interviewees said their organizations experienced but were not able to quantify include:

- **Modern application design improved CX.** The CIO shared with Forrester: “We moved to [OpenEdge12.x] at the same time we rolled out a new web portal solution that runs on top of API layers that we’ve been building within OpenEdge. So, our customers got a great new web portal with the modern user experience and great performance. Our customers say the user experience has been like night and day.”

“Our customers went from looking at a poorly performing, old-looking web portal that was built eight years ago, and now they have a blazing-fast, modern user experience for the business application.”

CIO, workforce management software ISV

- **Organizations using applications built on OpenEdge 12.x avoided lost revenues.** Application failure can have very real consequences for organizations that rely on applications built on OpenEdge. The product manager shared: “Although a crash doesn’t cost us personally, it costs our end customers. At one point, one customer lost an entire day because of an outage, and they estimated their losses to be around \$80,000 in one day.”
- **Developers became happier.** The interviewees noted that the adoption of OpenEdge 12.x contributed to the overall happiness of the developer team, which likely contributed to better developer retention. The product manager told Forrester: “The developers are happier in the new environment. They consider it more stable

and more responsive. I have no metrics to prove it. They’re just happier, and having happy developers is a good thing.”

- **New application servers drive savings.** The interviewees’ organizations supported their OpenEdge 12.x investments by adopting PAS for OpenEdge to replace the Classic AppServer they used with previous OpenEdge editions. The new application server has benefits of its own. The product manager shared: “If you look at the new [PAS for OpenEdge] in comparison to the Classic AppServer, it’s better because we save memory and reduce infrastructure costs.”

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement OpenEdge 12.x and later realize additional uses and business opportunities, including:

- **Migrating applications into containers.** Interviewees said they look forward to utilizing a new feature of OpenEdge 12.x: docker containers. These containers allow developers to create applications in isolated environments, which speeds up development and deployment. The CIO shared: “We want to run OpenEdge in docker containers, but we need to clean up some legacy code in our application before we can do that. We have the toolbox; now we need to go and use it.”

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

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	Implementation and training	\$69,190	\$0	\$0	\$0	\$69,190	\$69,190
Ftr	Application server costs	\$132,000	\$66,000	\$66,000	\$66,000	\$330,000	\$296,132
	Total costs (risk-adjusted)	\$201,190	\$66,000	\$66,000	\$66,000	\$399,190	\$365,322

IMPLEMENTATION AND TRAINING

The CIO spoke about the efforts involved with their organization’s implementation of OpenEdge 12.x. They said: “For our implementation, we were changing all the connections into the OpenEdge platform. So, we had a couple of front-end developers supporting the project for about a month.”

In addition to the implementation efforts, employees participated in trainings to learn the new features and capabilities of the newest OpenEdge release. The CIO said, “The operations team utilized Progress [Software’s] education offerings like online videos and quizzes.” Meanwhile, the product manager shared: “Four of the developers received about 3 hours’ worth of training in total. I gave much more attention to the development manager and our customer service IT rep who manages these environments. They have to know the nitty-gritty and the nuts and bolts for when it comes down. [They need to know] how to bring it back up.”

Modeling and assumptions. To reflect the experiences of the interviewees’ organizations, Forrester makes the following assumptions about the composite organization:

- Three developers take two months to implement OpenEdge 12.x.

- The burdened monthly cost of a developer is \$10,000.
- The organization provides 5 hours of training to the 10 OpenEdge developers.
- The burdened hourly cost of a developer is \$58.

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on organization needs, developer skillsets, and the ability to implement OpenEdge 12.x. Organizations may incur additional costs for training materials or periphery training-related costs.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$69,190.

Note on licensing costs

The interviewees’ organizations previously used OpenEdge 11.x and did not incur any additional licensing costs as a result of the investment in OpenEdge 12.x.

Implementation And Training						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
E1	Number of developers tasked with implementation and adoption of OpenEdge 12.x	Interviews	3			
E2	Number of months	Interviews	2			
E3	Burdened cost of developer	Composite	\$10,000			
E4	Subtotal: Implementation costs	$E1 \times E2 \times E3$	\$60,000			
E5	Number of developers	Composite	10			
E6	Hours of training	Interviews	5			
E7	Burdened hourly cost of developer (rounded)	$\$120,000 / 2,080$ hours	\$58			
E8	Subtotal: Training costs	$E5 \times E6 \times E7$	\$2,900			
Et	Implementation and training	$E4 + E8$	\$62,900	\$0	\$0	\$0
	Risk adjustment	↑10%				
Etr	Implementation and training (risk-adjusted)		\$69,190	\$0	\$0	\$0

APPLICATION SERVER ADOPTION

PAS for OpenEdge is the recommended application server for OpenEdge 12.x, so the interviewees’ organizations replaced the classic AppServer they used in their legacy OpenEdge environments. Migrating to PAS for OpenEdge was a prerequisite for the organizations to adopt 12.x, and as such, the costs of this migration are considered in the cost evaluation of OpenEdge 12.x.

The product manager shared: “In 2019, I went to [the ProgressNEXT conference] and started questioning anybody who would listen about [PAS for OpenEdge]. We were given access to an engineer and a management resource who helped us. We went from having no ability to getting a 12.x environment running to being ready to go three months later.”

Modeling and assumptions. To reflect the experiences of the interviewees’ organizations, Forrester makes the following assumptions about the composite organization:

- Six developers participate to some degree with the task of migrating from the classic application server to PAS for OpenEdge.
- Those developers dedicate 50% of their time to the PAS for OpenEdge migration over four months.
- The burdened monthly cost of a developer is \$10,000.
- In the composite organization’s legacy environment, the annual classic AppServer license, maintenance fees, and support fees cost approximately \$180,000. The licensing, maintenance, and support fees for PASOE are

25% higher than for the classic application server.

Risks. Forrester recognizes that these results may not be representative of all experiences. The benefit will vary based on how many developers are dedicated to the task, their burdened costs, and how long the migration takes. The complexity and types of applications will also have an impact on efforts required to migrate to PAS for OpenEdge. It is also possible that an organization using OpenEdge 11.x may have already upgraded to PAS for OpenEdge. In this case, the organization already incurred this cost, so decision-makers may not consider it to be a cost for the investment in OpenEdge 12.x.

“It’s worth the upgrade. You’re going to see a lot of benefits if you implement [PAS for OpenEdge]. You’re going to get a big bang for your buck because your resource allocation is going to drop.”

Product manager, financial software ISV

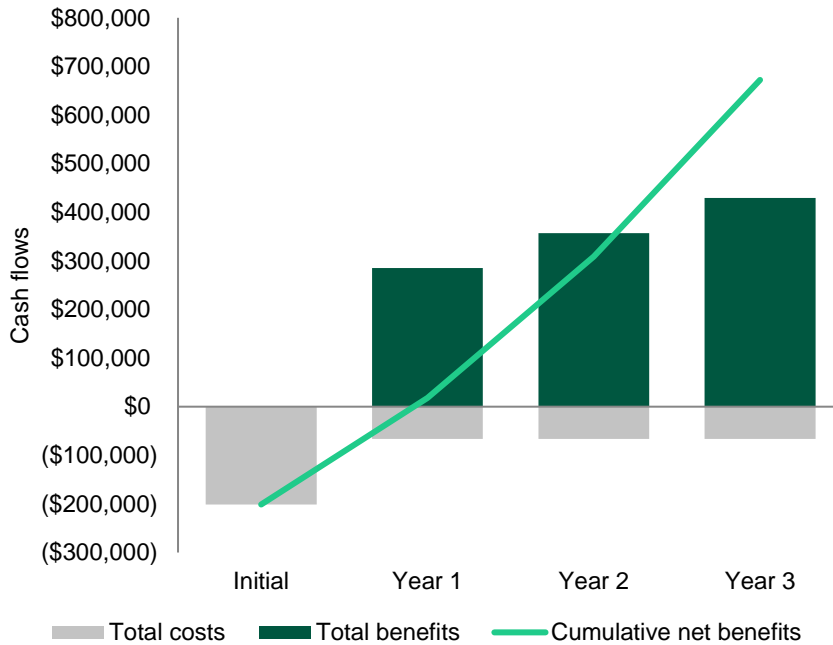
To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$296,132.

Application Server Adoption						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Number of developers	Interviews	6			
F2	Number of months	Interviews	4			
F3	Time dedicated to primary application server	Composite	50%			
F4	Burdened monthly cost of developer	\$120,000/12 months	\$10,000			
F5	Subtotal: PASOE implementation labor costs	F1*F2*F3*F4	\$120,000			
F6	Classic App server license, maintenance, and support fees	Composite		\$180,000	\$180,000	\$180,000
F7	Ongoing PAS license, maintenance, and support fees	Composite		\$240,000	\$240,000	\$240,000
F8	Subtotal: Incremental license, maintenance, and support fees	F7-F6	\$0	\$60,000	\$60,000	\$60,000
Ft	Application server costs	F5+F8	\$120,000	\$60,000	\$60,000	\$60,000
	Risk adjustment	↑10%				
Ftr	Application server costs (risk-adjusted)		\$132,000	\$66,000	\$66,000	\$66,000

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Financial Analysis (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	(\$201,190)	(\$66,000)	(\$66,000)	(\$66,000)	(\$399,190)	(\$365,322)
Total benefits	\$0	\$285,024	\$356,967	\$429,342	\$1,071,333	\$876,698
Net benefits	(\$201,190)	\$219,024	\$290,967	\$363,342	\$672,143	\$511,376
ROI						140%
Payback						12 months

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."



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.

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