A Forrester Consulting
Thought Leadership Paper
Commissioned By VMware

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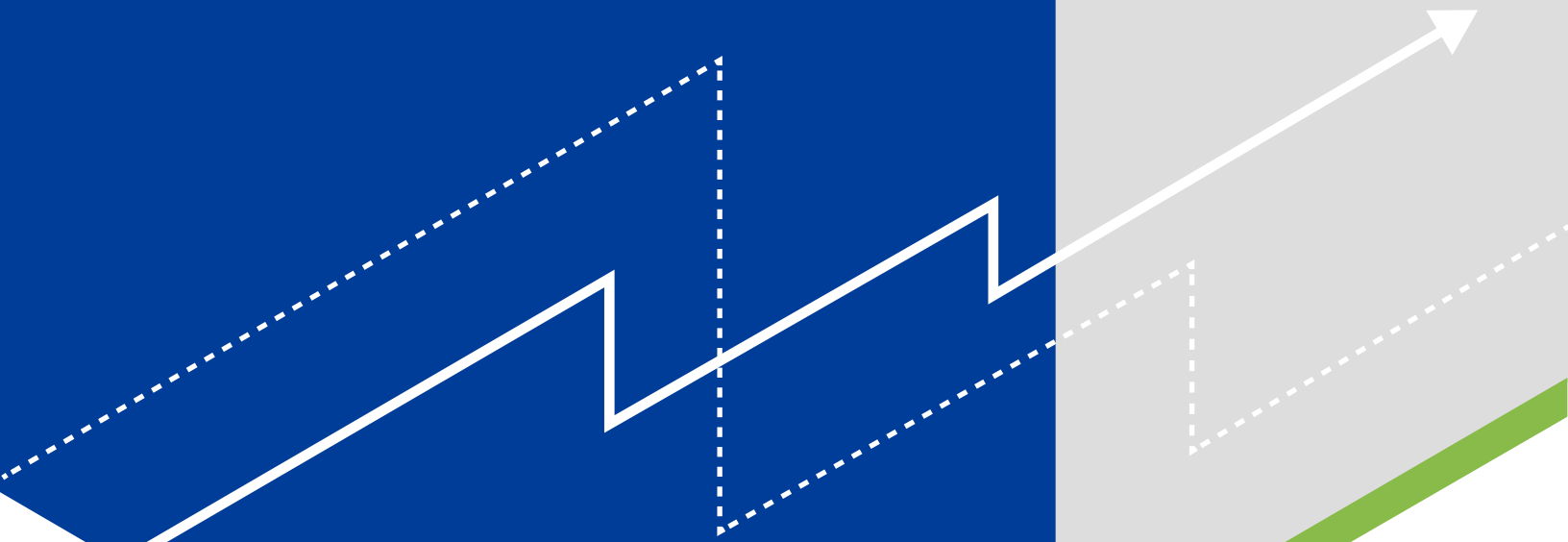
Improving Customer Experience And Revenue Starts With The App Portfolio

Start Improving Applications Today; Tomorrow Is Too Late



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88% of IT leaders agree improving app portfolio improves CX.

82% agree CX is tied to revenue growth.

53% of executives have a revenue growth goal today or expect to in the next one to two years.

Nearly all executives state that improving their app portfolios is a top priority.

Yet **48%** of executives have not made application improvements in a year or more.

Executive Summary

Enterprise IT leaders know the critical importance of customer experience as they digitally transform. Unhappy customers can kill a business faster than almost anything else. However, customer expectations are constantly changing and are more challenging than ever to satisfy. In an on-demand/software-as-a-service (SaaS) economy, positive and innovative experiences that delight customers are the best way to win customer loyalty and slow down churn.

For enterprise companies, their business now and in the future will depend on how effective, easy, and meaningful that application experience is. This is critical as CIOs take over more responsibility for generating revenue through the development of applications and/or the use of data. However, many enterprises have struggled to modernize their application environments and overcome technical debt to meet these goals. As a result, executives will have to adapt, integrate, modernize, simplify, and optimize their application portfolios to win customers.

In October 2019, VMware commissioned Forrester Consulting to evaluate executive sentiments about the state of their current application portfolios, their ability to create terrific end customer experiences, and the connection between the two. Forrester conducted an online survey with 614 respondents and six interviews with CIOs and SVPs from global enterprises across six industries to explore this topic. We found that executives have made the connection between improving their application portfolios and improving CX, but several barriers keep them from meeting increasingly demanding customer expectations.

KEY FINDINGS

- **Nearly all CIOs and SVPs agree that improving their applications would improve customer experience.** In addition, 82% of executives agree that CX is directly tied to revenue growth. Revenue and customer growth are the top business priorities for executives. Putting the pieces together, 88% of executives say better CX through improved applications is very important to them.
- **C-suite tech decision makers are stifled by technical debt.** Executives are spending too much time and too many resources on maintaining their legacy infrastructures. As application environments become more complex, senior tech leaders must reduce their dependence on complex, brittle, and inflexible app environments with a program of aggressive cloud migration to improve innovation efforts.
- **Emerging technologies can supercharge app improvement efforts.** To start delivering great customer experiences, enterprises must modernize their app infrastructures. C-suite tech decision makers turn to support partners to identify which apps can be migrated to public or private cloud platforms fastest, most easily, and without compromising security. Leveraging containers and servers will allow firms to have long-term success with emerging tech solutions like internet of things (IoT), edge computing, and artificial intelligence (AI) and machine learning (ML).

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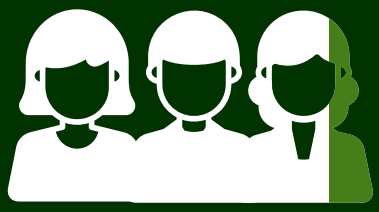
Application Improvement Must Start Today

Key stats



88% of executives agree improving their application portfolio would improve end customer experience.

34% of executives have not yet begun improving any of their application portfolio as of today

IT leaders who have started improving their app portfolios see big business outcomes:*

- **40%** Increased revenue generation
- **37%** Increased customer satisfaction
- **36%** Success among peers within their roles

Base: 614 CIOs and SVPs at enterprises in NA, EMEA, and APAC
*Base: 402 CIOs and SVPs at enterprises in NA, EMEA, and APAC
Source: a commissioned study conducted by Forrester Consulting on behalf of VMware, October 2019

Application improvement must start today; tomorrow is already too late. Customer experience is critical currency for CIOs and tech leaders to stay competitive in today's digital marketplace. Our study shows that executives have already made the connection between improving their application portfolios and improving CX but still must act by prioritizing applications that are limiting customer experience. Modernizing an app that is compromising customer experience is the most powerful demonstration of value that technology leaders can make. Customer experience improvements are highly valued and most likely to get funded and produce benefits top executives appreciate.[1]

However, these improvements are not happening fast enough. Nearly half of executives (48%) say it has been more than a year since they made improvements to their application portfolios. We have found core systems have not been updated for years because the risk to business operations, combined with the cost of another in-place patch or upgrade, is too high.[2] What CIOs and SVPs fail to realize, however, is the risk and cost of not modernizing is even higher.

The connection between app improvement and CX will become even more critical as more CIOs and SVPs become goaled on revenue. Over 50% of executives today are either goaled on revenue growth or expect to be within one to two years. It's no longer enough for C-suite tech decision makers to focus on cost reduction or efficiency. They must directly link new IT investments to clear and measurable CX improvements that drive business growth.

> "We see technology as an enabler of our business goals. We have spent the last few years building customer journey maps. We don't build any applications anymore; we use a technology partner for that. Instead we focus on getting the right technology in place to improve our customer's journey."
>
> *CIO at an Australian governmental department*

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Eighty-two percent of executives in our study tie CX directly to revenue growth, and 88% tie app improvement to improving CX. Executives must immediately connect the dots and start improving applications to keep up with their customers' demands and stand out from competitors. Executives who have improved their portfolios tell us they have enjoyed positive business outcomes like increased revenue generation (40%), increased customer satisfaction (37%), and greater success among their peers within their companies (36%).

Act now:
App improvement must start today with an honest and thorough review of app portfolios and environments.

Identify which apps should be improved first and where. Which improvements will deliver results fastest? What tools and skills are needed to get started? What do you need to gain a real competitive advantage?

Convince your business colleagues you are serious about contributing to revenue — by committing directly to the company's revenue goals. You must directly link new IT investments to clear and measurable CX improvements that drive business growth.

"The decision to buy a financial product or service is deeply linked to trust. Having applications that deliver great customer experiences helps connect that trust to our brand."

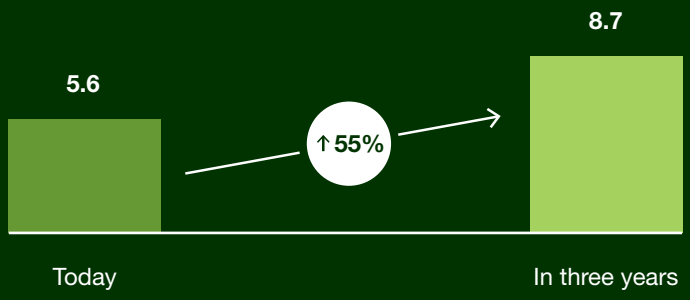
CIO at a European financial services enterprise

78% of CIOs agree improving their application portfolios is a top business priority.

Choose Flexible And Elastic Application Environments

Key stats

IT leaders told us they expect the number of different application environments they manage, build and run applications on will increase by 55%. (midpoint averages)



Top app environment challenges:

80% of executives agree that matching the best platform to each application is very or extremely challenging.

79% of executives said it is too difficult to scale IT infrastructures

76% of executives said they are too invested in legacy applications to change

Base: 614 CIOs and SVPs at enterprises in NA, EMEA, and APAC
Source: a commissioned study conducted by Forrester Consulting on behalf of VMware, October 2019

Improving applications may not be easy with current environments. A CIO at an American retail company told us, "Most of our software development is supporting legacy capabilities that are in-house and don't provide a competitive advantage, which is opposite of what I would want to have." We found 76% of senior IT leaders believe they are too invested in legacy applications to change. This is particularly true at financial services firms (78%) and telecom companies (74%). Additionally, nearly 80% of executives believe it is too difficult to scale their IT infrastructure.

Executives are clear: The environments being used today to build their applications are often too rigid and complex, making improving applications slow and cost-prohibitive. Over the next three years, IT leaders expect the number of different environments on which they manage, build, and run applications to increase by 55%. C-suite tech decision makers want to know how innovate with so much new complexity.

They must start by matching the right application to the right platform. But that's not easy: 80% of executives report that matching the right app to the right platform is very or extremely challenging and slows them down. In fact, matching the right app to the right platform is the top challenge in their roles, but it is critical to address the growing complexity in their app environments.

Tech leaders are choosing to improve applications that are easy to move across cloud platforms, are fast to implement, and, most importantly, improve CX first. This requires application environments that are elastic, globally available, secure, and highly automated. New technology and agile development environments are also necessary to reduce complexity.

> "We measure CX in very traditional ways through patient satisfaction and engagement scores. We also look at our competitive rankings."
>
> *CIO at a US healthcare enterprise*

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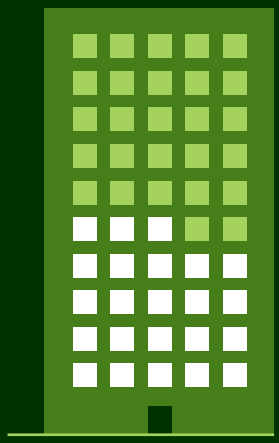
Act Now:
Reduce your dependence on complex, brittle, and inflexible app environments and infrastructure through aggressive cloud migration. Which apps can be migrated to modern cloud platforms in the fastest, most secure, and efficient way? Prioritize elastic, globally available, secure and highly automated cloud environments, services, and consistent operational tools to simplify and accelerate app improvement.

For Successful Execution, Prioritize, Fund Innovation, And Align Teams

Key stats

46% of executives believe their company is only moderately effective or not at all effective at delivering a positive end customer experience



Top barriers to innovation:

78% of executives said lack of skills with modern development platforms (e.g., containers, Kubernetes, serverless) is an important application improvement for them to overcome

76% of executives said securing funding is a very or extremely important business challenge for them to overcome

45% of executives said that high technical debt is their top challenges as they improve their applications

Base: 614 CIOs and SVPs at enterprises in NA, EMEA, and APAC
Source: a commissioned study conducted by Forrester Consulting on behalf of VMware, October 2019

Executives identify high technical debt, meaning they spend too much time and expense maintaining their existing applications, as a top challenge but also as extremely important to overcome. C-suite tech decision makers get it: They want to modernize core apps using cloud technologies and practices, but they're often stymied by the difficulty of the task and unable to even start the journey.[3] Enterprise leaders need to be modernizing their core systems to reduce the drag of technical debt, to derive greater insights from data, and especially to become flexible enough to power the new customer-facing experiences everyone needs to build.[4] By reducing technical debt, enterprise IT leaders can free up budget and staff to address other app improvement/CX initiatives.

The ability to quickly deliver truly great CX separates great companies from the merely good. Software apps are the magic that enables organizations to bring products, services, and CX alive. Global developers who we surveyed in 2019 most often listed improving their firms' products and services, improving CX, growing revenue, and improving their ability to innovate as top business priorities for their firms in the coming 12 months.[5] However, slow application improvement cycles, staff without the right skills, and a lack of key performance indicators that truly measure CX accurately all stifle innovation.

Consolidating and automating architectures allows executives to save their resources (money, staff, and technology) by eliminating the constant maintenance of overly complicated stacks. This is critical to overcome technical debt. Forty-five percent of executives in our study say high technical debt is their top challenge as they improve their applications. Additionally, 69% of executives say high technical debt is very or extremely important to overcome to improve apps.

By leveraging technologies like containers, executives can more rapidly deploy, patch, and scale their applications. Nearly three out five CIOs feel an urgent need to adopt containers to improve their app portfolios. This has tremendously important benefits like cutting cost and driving efficiency so organizations can focus less on keeping the wheels on the road and more on exploring new paths to innovation. Containerizing applications before moving them to a new platform enables operational efficiency gains from using cloud-resident monitoring, provisioning, container, and security tools. This can result in improving the application without rewriting a line of code.[6]

Containers are to ops what microservices are to dev — a way of increasing modularity, flexibility, and elastic scalability. Dev and ops work together to gradually break large, complex monolithic apps into more manageable chunks. Container platforms dynamically scale the application, both up and down, based on demand.[7]

"Innovation is all about the customer. We used to focus on individual innovation initiatives, but that was ineffective. Now we focus on innovations that address a specific client need within our journey maps."

CIO at an Australian governmental department

56% of enterprise IT leaders agree containers are a key technology to improve app portfolios.

Act now:
Find innovation funding by correcting existing inefficiencies. Then reorganize technology stacks and teams to prioritize app improvements and encourage experimentation. It's never easy to fund innovation with a large backlog of technical debt and operational expenses, but leading CIOs and SVPs convince their business stakeholders that app and CX improvement and CX must be funded priorities not only for the IT organization but for the business as a whole. Standardizing, digitizing, and automating existing data centers or existing app environments can free up time, resources, and money for innovation and establish the right foundation for old and new applications.

Choose Partners To Master Emerging Technology And App Modernization Services

Key stats

C-level technology leaders turn to consulting or professional services to help improve their application portfolio

Emerging technologies cited as most likely to improve the application portfolio:

70% Artificial intelligence
66% Internet of things (IoT)
63% Machine learning
45% Edge computing

50% of the executives in our study are forming their own experimental/ innovation teams to assess new and emerging technologies

Base: 614 CIOs and SVPs at enterprises in NA, EMEA, and APAC
Source: a commissioned study conducted by Forrester Consulting on behalf of VMware, October 2019

Emerging technology can give CIOs an advantage over their competition, helping them improve their application platforms and drive improved CX at a faster pace. To build out emerging tech solutions, enterprise tech leaders must first look at their underlying app infrastructure. Forward-thinking CIOs and SVPs who want to utilize these emerging technologies like edge computing, AI, and IoT must first modernize their application infrastructures to get the full benefits of those technologies and use them at scale.

Executives are looking to partners and competitors' leads within their industries for guidance on what kinds of emerging technologies they should adopt to accelerate app infrastructure modernization. Leading CIOs are aggressively seeking trusted/proven consulting and professional services partners to take stock of what they have and help them rationalize and simplify their portfolios — and chart a course for the future. They are seeking partners that can help them with discovery services, to learn exactly what they have today and how to get started improving the right applications quickly. They also want partners to assess their maturity and measure their progress and whether or not their strategy has a direct impact on customer experience.

"Because we have adopted robotic process automation and machine learning logic, we have done away with most human intervention."

CIO at an Indian financial services enterprise on detecting unethical practices within internal compliance systems

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The maturity of modern application infrastructures, like containers and servers, will determine your long-run success in IoT, edge, and AI/ML. Once modern application infrastructures are in place, technology leaders can leverage them as the foundation for creating a culture of innovation and agile development. Creating an experimentation/innovation team — augmented by specialist partners — means you can scale up your app modernization efforts through emerging tech to start delivering great customer experiences today and plan for what comes next.

Act now:
CIOs should seek out skilled partners to assist with portfolio analysis and modernization strategy assessments. Secure budget and augment your current staff with experts to speed up this process.
Explore and experiment with emerging technologies to supercharge your app improvement efforts. The pace of innovation in the emerging technology market is accelerating, and new analytics, AI, ML, internet of things, edge computing, and cloud-native development platforms offer exciting new ways to breathe new life into existing applications and deliver differentiated CX. Create and fund a team whose mission is to match the best emerging technologies to the right apps in your portfolio and accelerate your CX initiatives.

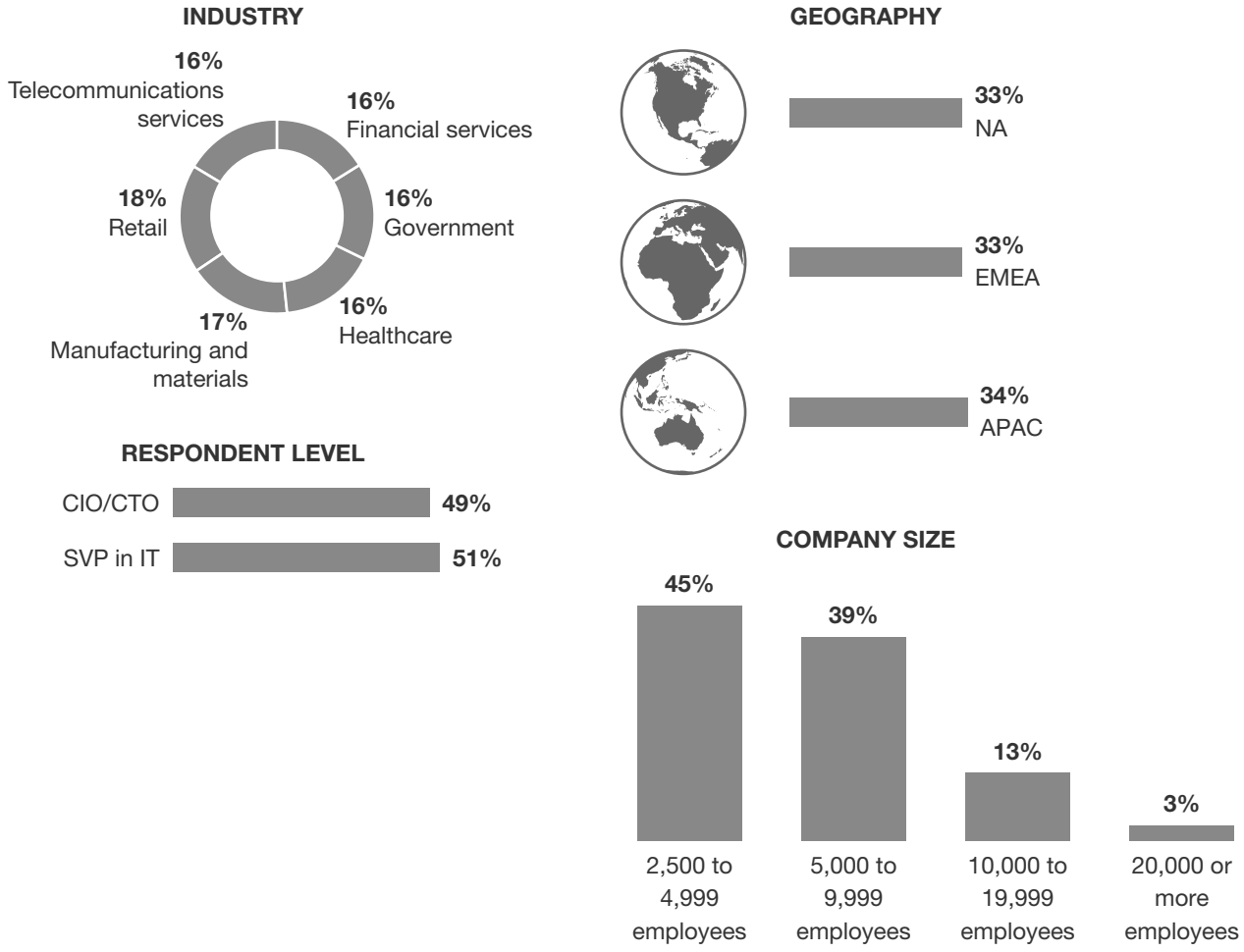
"We know our business really well; where we rely on partners is to provide the technology expertise. They help us identify where and what technology can best help us address our customers' needs."

CIO at an Australian governmental department

Appendix A: Methodology

In this study, Forrester conducted an online survey with 614 respondents and six interviews with CIOs and SVPs from global enterprises across retail, financial services, telecommunications, government, healthcare, and manufacturing industries to evaluate the state of their current application portfolios, their ability to create terrific end customer experiences, and the connection between the two. Questions provided to the participants asked about their challenges with improving application, the connection between application and CX, and their use of partners and emerging technology. The study began in July 2019 and was completed in October 2019.

Appendix B: Demographics



Base: 614 CIOs and SVPs at enterprises in NA, EMEA, and APAC
Note: Percentages may not total 100 because of rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of VMware, October 2019

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Appendix C: Endnotes

[1] Source: “Modernize Core Applications With Cloud,” Forrester Research, Inc., August 5, 2019.

[2] Ibid.

[3] Source: “Are You Using Cloud Technologies To Modernize Core Apps? Tell Us About It!,” Forrester Research, Inc., August 25, 2019.

[4] Ibid.

[5] Source: “Adopt Agile And DevOps To Drive Digital Business Success”, Forrester Research, Inc., January 7, 2020.

[6] Source: “Modernize Core Applications With Cloud,” Forrester Research, Inc., August 5, 2019.

[7] Source “Digital Transformation Requires Development Transformation,” Forrester Research, Inc., December 13, 2019.