

A Forrester Consulting
Thought Leadership Paper
Commissioned By Cognizant
January 2019

Simplify Your Digital Transformation Journey With Hybrid Cloud



Table Of Contents

- 1 Executive Summary
- 2 Companies Are Not Prepared To Deliver On Digital Transformation Goals
- 3 Current Approaches To Infrastructure And Application Deployment Are Slow And Inefficient
- 6 Cloud-Based Solutions Support More Agile Digital Transformation
- 9 Key Recommendations
- 10 Appendix

Project Director:

Chris Taylor,
Senior Market Impact Consultant

Contributing Research:

Forrester's infrastructure and operations research group

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

© 2019, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to forrester.com. [E-40644]

Executive Summary

Most enterprises are at the cusp of digital transformation, with many already knee-deep in transformation efforts. Digital transformation goals range from improving CX, to driving competitive differentiation, to improving customer experience, and more. In pursuing digital transformation many companies have jumped into the rapidly moving cloud space to serve a variety of use cases, teams, and developer types. Cloud-native development offers applications and infrastructure groups tremendous capacity to drive improvements around agility and efficiency. For this reason, many organizations encourage widespread cloud usage, allowing developers to utilize a mix of on-premises and cloud technologies (i.e., hybrid cloud) to easily and eventually pivot to a strategic model that positions specific usage patterns or rules of usage.

However, this approach will fall flat without the proper hybrid cloud strategy. Too many cloud strategies today are plagued with stagnation, overspending, or poor alignment to larger business imperatives.¹ Companies that want to leverage the cloud need to take a staged approach: making the move gradually and replacing legacy systems as needed with a combination of private and public cloud solutions.

In October 2018, Cognizant commissioned Forrester Consulting to: 1) evaluate how companies are adapting both their technology development and deployment patterns as part of their digital transformation and 2) understand how companies were leveraging integrated technology solutions via the cloud to scale their business. Forrester conducted a survey of 220 enterprise infrastructure and operations professionals from large US companies who are involved with digital-transformation decision making (see Appendix for further details). The results showed that companies undergoing digital transformation are looking to shift the way they deploy infrastructure and applications to a more hybrid cloud-based approach that will both afford the company better agility and better support business priorities around CX and competitive differentiation.

KEY FINDINGS

- › Digital transformation initiatives are most commonly motivated by four things: 1) demand from customers; 2) pressure from competitors; 3) desire to improve innovation; and 4) internal demand from employees.
- › The need for customization for applications is a primary detriment to the velocity of digital transformation efforts as it impedes the rate of delivery for new business features.
- › Many companies are in the process of evolving from a focus on internal development and delivery to hybrid cloud solutions, due in part to challenges with technical debt from legacy systems (33%) and a lack of technical skills (roughly 40% on average).
- › Use of preconfigured solutions as a way to realize benefits sooner is on the rise. Ninety-three percent of surveyed companies see ready-to-use, cloud-based, and as-a-service offerings, designed to fit custom business needs or industry requirements, as a valuable way to address digital transformation needs more rapidly.

Companies Are Not Prepared To Deliver On Digital Transformation Goals

Changes in both technology and buyer behavior have altered the way in which modern businesses must operate. These changes have forced digital transformation to be an important part of every company's future. Ninety-two percent of our survey respondents say they are engaged with digital transformation to some degree, whether it is rolling out new initiatives or making refinements to existing changes. While individual use cases can vary by industry and by company, digital transformation efforts are most commonly motivated by a combination of four things (see Figure 1):

- › Demand from customers for improved experiences.
- › Pressure from competitors.
- › Desire to improve innovation.
- › Demand from employees for better infrastructure and technology to keep up with the requirements of their job.

While most companies have strong drivers for digital transformation, only a small few feel they are properly resourced (i.e., proper staffing, budget, technology, etc.) to deliver on those objectives. We asked survey respondents to rate their company's resources on their ability to deliver on digital transformation goals on a scale from 1 to 5, with 1 as "we have none of the right resources" and 5 being "we have all the right resources." Overall, less than 50% of companies feel they have all the right resources, and many have low confidence about their ability to improve CX and their overall competitiveness, simplify organizational processes, and spur innovation (see Figure 1).



On average, less than 50% of companies feel they have all the right resources to deliver on digital transformation goals.

Figure 1

Common goals of digital transformation	% of companies who consider themselves to be fully resourced to deliver this goal
Improve CX to meet customer demands	47%
Keep up with competitive pressures	24%
Improve innovation capabilities	27%
Enable employees to be more productive and efficient	31%

Base: 220 US enterprise infrastructure and operations digital transformation decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

Current Approaches To Infrastructure And Application Deployment Are Slow And Inefficient

When asked to rate how well their current infrastructure and applications were equipped to support digital transformation, on average, companies rated themselves as being a 6.8 out of 10 for infrastructure and a 7.4 out of 10 for applications. While those averages are not terrible, there is plenty of room for improvement. In trying to understand what was keeping those scores from being in the 9 to 10 range, we found that current approaches to infrastructure and application deployment can be slow and difficult to deliver and implement, thus impeding transformation efforts. Progress is inhibited by four primary challenges (see Figure 2):

› **Internal, custom assembly can mean excessive customization and therefore inevitable delays.** We asked survey respondents to identify the current methods of deployment for business applications and infrastructure and found that, on average, the most common form of deployment was internal, custom assembled solutions (see Figure 3). While this approach can provide companies with unique and specific functionality, the time requirements can be burdensome. For example, 48% of companies said that their strict requirements for testing/validation of production systems was limiting business agility, and this limited agility impacts employees' ability to leverage the technology effectively. The importance of rapid delivery of value is causing a renaissance for pre-built, configurable solutions across a variety of domains, including digital transformation and internet of things (IoT) to name just two examples.

Figure 2

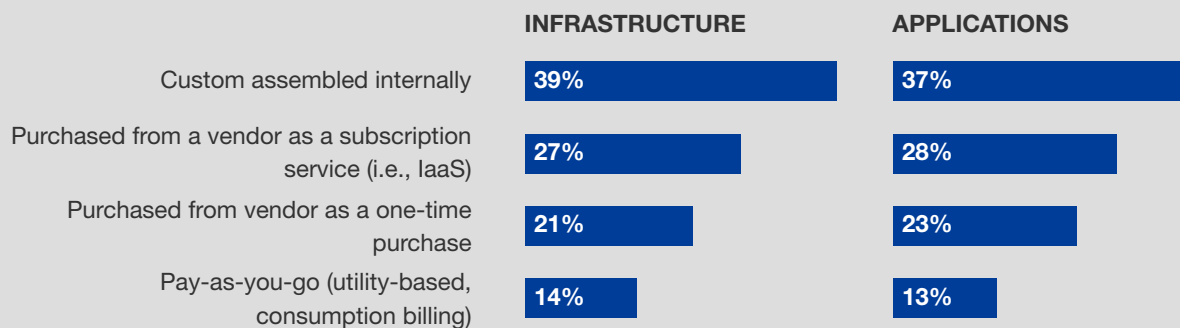
Biggest detriments to digital transformation efforts

- 1) The need to customize every application
- 2) Technical debt from legacy systems
- 3) Siloed approach to transformation
- 4) Lack of proper technical skills and tools

Base: 220 US enterprise infrastructure and operations digital transformation decision makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

Figure 3

“Please estimate what percentages of your business infrastructure and applications were deployed in the following ways.” (Mean %)



Base: 220 US enterprise infrastructure and operations digital transformation decision makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

- › **Reliance on legacy environments and technical debt slow companies down.** Companies' dependencies on legacy systems can be very detrimental to the responsiveness and agility that's required of digital transformation efforts. We asked survey respondents to indicate how easy it was to achieve certain business outcomes based on their company's current infrastructure and application deployment methods and found that only about half of companies find it easy to quickly troubleshoot programs or errors, make technology more user-friendly for employees, and quickly deploy new applications. With time-to-value being such a crucial part of transformational efforts, companies must shed their dependency on legacy environments in favor of newer, more cost- and time-efficient solutions.
- › **Enterprise customers can't escape their siloed approach to digital transformation.** Digital transformation at the enterprise level involves synchronizing a variety of moving parts across the entire business — and coordinating those efforts simultaneously can be difficult. Not every piece of the organization needs to transform in the same way, but many enterprises are clearly floundering on their own internal barriers. For example, recent research found that back-end process teams (e.g., supply chain, HR, finance) are the least likely to be involved in digital-transformation decision making and are seen as less critical than other functions in delivering on customer needs and requests. This in turn hampers transformation efforts by leaving companies unable to operationally deliver on differentiated and valuable customer experiences, ultimately threatening business health.²

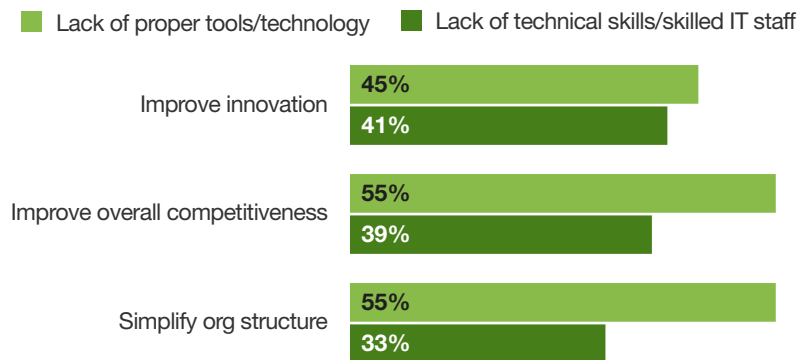
Some organizations have appointed a chief digital officer to escape the likelihood of the transformation retaining a siloed approach, but this may merely prove to be a temporary response. Ultimately, digital transformation is a mindset and involves every role, but applying changes in isolation, without a transformation strategy that is widely communicated, can do more harm than good.³ As technology has evolved, the line between application and infrastructure has blurred as the role of infrastructure expands, and approaches such as native cloud development and DevOps have served to close this gap. Yet, despite this gradual convergence, it is often easier for many companies to focus on transforming applications and infrastructure separately, with limited communication between the two. Nearly one in four companies identified limited communication as a gap in their currently capabilities; interestingly, 55% of companies with communications gaps between infrastructure and application teams, cite it as their single biggest detriment to digital transformation initiatives.

55% of companies with communications gaps between infrastructure and application teams, cite it as their single biggest detriment to digital transformation initiatives.

› **Lack of proper technical skills and partner gaps.** Over one-third of surveyed companies cited a lack of technical skills as a key area of deficiency in being able to deliver on transformation goals, such as improving innovation, competitiveness, and CX. The lack of proper tools and technology was also a challenge for over 50% of companies, on average (see Figure 4). Businesses need the proper partnerships to help fill those skills and technology gaps in order to deliver on digital transformation objectives, as it's something many companies are struggling to accomplish without needed support. In particular, financial services and healthcare companies see greater challenges with having understaffed IT teams as they are more inclined to try and tackle digital transformation more holistically (rather than in small components), thus putting higher demand on the needed skills. Healthcare companies also had the highest percentage of respondents (29%) who identified support from the infrastructure provider as a primary gap in current capabilities. The fixation on technical skills is not ill-founded, but it can mask the fact that most urgent skills required are not technical in nature.⁴

Figure 4

“In what ways do companies lack resources for delivering transformation goals?”



Base: Varied counts of enterprise infrastructure and operations digital transformation decision makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

Cloud-Based Solutions Support More Agile Digital Transformation

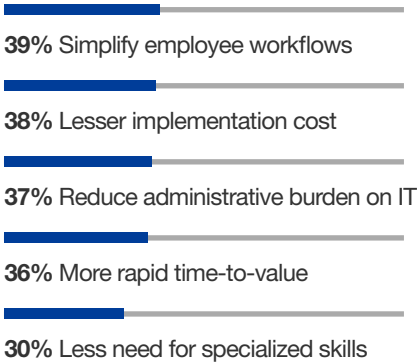
As companies internalize the challenges they face with digital transformation, it becomes clear that they must move away from custom development toward more cloud-based alternatives. Building custom (in-house) has been the instinct for so long, but the need for agility and industry-specific requirements, coupled with the lack of needed skills and tools, make this unsustainable in the long term. That is why only 6% of companies said their plans for sourcing infrastructure and applications include custom, in-house development.

Cloud offers businesses a tremendous range of benefits including better accessibility, scalability, automation, and in converging infrastructure and apps. However today, few enterprises are capable of operating in a 100% public cloud environment. Instead, many take a hybrid cloud approach, which articulates a balance of leveraging existing investments while wrapping in new cloud technologies to bring powerful improvements. In 2017, 74% of North American and European enterprise infrastructure decision makers defined their strategy as hybrid.⁵ As part of this strategy, many companies are doing the following:

- › **Leveraging a network of best-of-breed suppliers (especially for cloud).** Many companies are already using cloud, or planning to use cloud, across several different applications. Specific areas of desired expansion for cloud usage include cloud platform-as-a-service (PaaS), containers, and infrastructure-as-a-service (IaaS). Leveraging partners who can provide these solutions can enable organizations to deploy applications faster and see outcomes sooner than they would building in-house. This also relieves the support pressures from internal IT teams who can instead focus on better enabling their employees to leverage these tools. This transition can be gradual, however, and companies can slowly shift away from custom-developing everything in-house to a hybrid model with both cloud and on-premises components. Hybrid cloud offerings can enable companies to maintain control of a key part of their infrastructure and applications on-premises, while still benefitting from the expertise of their technology suppliers.
- › **Converging tech stacks.** Seventy-two percent of companies see value in converging tech stacks as part of their digital transformation efforts. The key benefits of converging tech stacks align nicely with digital transformation objectives by helping simplify employee workflows and enabling faster time-to-value (see Figure 5).



Figure 5
Benefits of converging tech stacks align with digital transformation goals



Base: 220 US enterprise infrastructure and operations digital transformation decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

- › **Using preconfigured, bundled solutions with pre-integrated application, platform, and infrastructure components.** Ninety-three percent of companies see preconfigured solutions (i.e., cloud-based, as-as-service, offerings designed to fit custom business needs or industry requirements) as a valuable way to address digital transformation needs — 73% of surveyed companies said the availability of preconfigured solutions is a key capability they look for in a solutions partner. Businesses that are trying to be more agile need the ability to implement new solutions with relatively minimal setup time as they look to keep up with the pressures from customers and competitors. Preconfigured solutions are designed to fit these needs with rapid configuration, further reducing the involvement of internal teams; but integrating them as part of a hybrid cloud environment will be critical to ensuring seamless connectivity.

PRECONFIGURED SOLUTIONS CAN BENEFIT VARIOUS ASPECTS OF THE BUSINESS

Preconfigured solutions offer more to businesses than just an easier way to deploy new applications and infrastructure. When asked what the top areas of benefits would be in using preconfigured applications, the most commonly identified areas of benefit were:

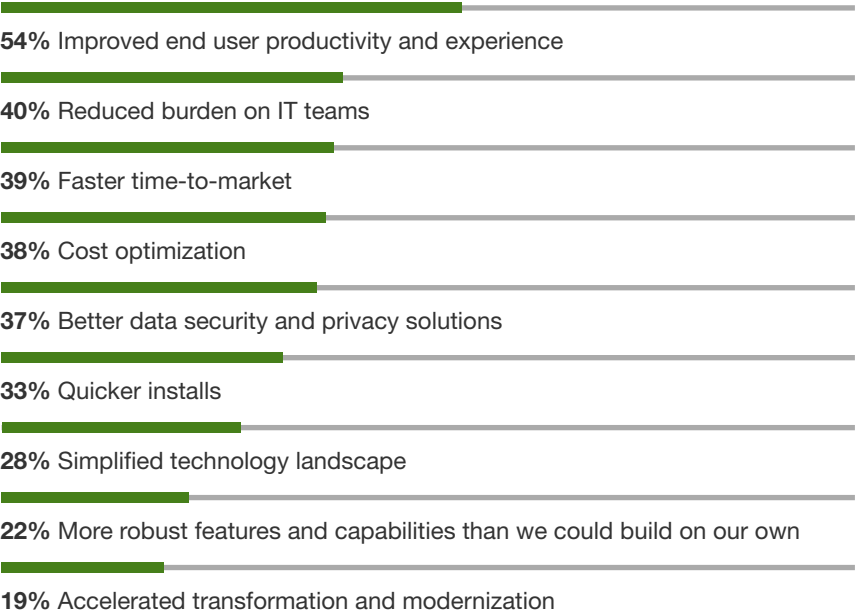
- › **More rapid security configurations.** Preconfigured solutions take the security burden off internal teams, and shift some of the responsibility to cloud solution providers. Cloud workloads and their security (or lack thereof) should not be an obstacle in the business' path to innovative products and services. Businesses need proper security to support their firm's digital transformation by smoothly transitioning from on-premises workloads and data to cloud environments. Through cloud workload security solutions, businesses can address cloud concerns nimbly and rapidly.⁶
- › **More efficient implementation of application and infrastructure.** Preconfigured solutions benefit organizations from a resource utilization efficiency standpoint, and also from an implementation efficiency perspective. By using these solutions, customers can avoid and minimize cloud management challenges.
- › **Improve the agility of business processes by converging applications and infrastructure.** Over the long haul, applications and infrastructure towers are converging. Moreover, growing automation of the business process automation stack in the form of convergence of business process management and robotic process automation suggests business process is not far behind. Customers should take advantage of this convergence in pursuing their digital transformation strategies.

93% of companies see preconfigured solutions (i.e., cloud-based, as-as-service, offerings designed to fit custom business needs or industry requirements) as a valuable way to address digital transformation needs.

Companies will be able to attain greater business agility and flexibility as they abandon their preference for custom, in-house development, and embrace an ecosystem full of partners and hybrid cloud solutions that can simplify digital transformation efforts. Preconfigured cloud solutions can still offer varying levels of customization to those who need it, while reducing the pressure on internal IT teams to support those efforts. Each of these changes will enable businesses to more directly improve customer experience, improve business agility, increase employee productivity, and drive innovation (see Figure 6).

Figure 6

“What advantages does your company see in using preconfigured solutions?” (Select all that apply.)



Base: 220 US enterprise infrastructure and operations digital transformation decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018



Key Recommendations

The factors propelling digital transformation are many, and ultimately appealing, and the best way to fulfill these requirements lies with the cloud. Businesses are wisely moving away from an over-reliance on internally developed and heavily customized digital transformation solutions, due to the time required to fully vet and test these solutions. However, a blind shift directly to cloud is not the right solution either. Most companies need to be careful how they balance this transition so that key business functions are not lost as new solutions are implemented. Enter the hybrid cloud. While cloud-native development is clearly part of the answer, a significant role remains for the use of prepackaged private and public cloud solutions to help meet horizontal or vertical-specific business needs. In order to help your company be more agile in its digital transformation initiatives, and establish a cloud strategy that works for you, Forrester recommends the following:



Align your organization around digital transformation objectives and priorities. Digital transformation is fraught with challenges, but every company faces them in their own unique way. Make sure your digital transformation objectives are clear and build a technology road map to meet those objectives. Efforts must also be made to educate and transform the enterprise and align relevant decision makers to set the stage for rapid progress.⁷



Set aside the “custom-build-everything” mentality and leverage the expertise of technology providers. Flexibility doesn't have to be lost when embarking on an accelerated digital strategy. Unique functionality can still be attractive as a way to differentiate your business; but pursuing customized functionality can be more fruitful in the context of cloud-based, preconfigured solutions that can be modified with less effort and time expended. This switch doesn't have to happen all at once either. Leverage a combination of on-premises and cloud solutions to create a comfortable environment on top of which you can progressively build and adapt.



Synchronize your hybrid cloud strategy with requirements for preconfigured solutions. The cloud is definitely the most appropriate environment in which to pursue digital transformation. But while native cloud development, PaaS-enablement, and other approaches to rapid delivery all have their place, prepackaged solutions are also becoming important in a variety of digital domains including IoT. Each organization is different, varying greatly in industry, location, compliance requirements, specific applications in its portfolio, app dependencies, developer skills, and developer scale. Start by outlining this context to best understand a path forward with cloud. This will require creativity, pragmatism, and rightsizing cost and scope.⁸



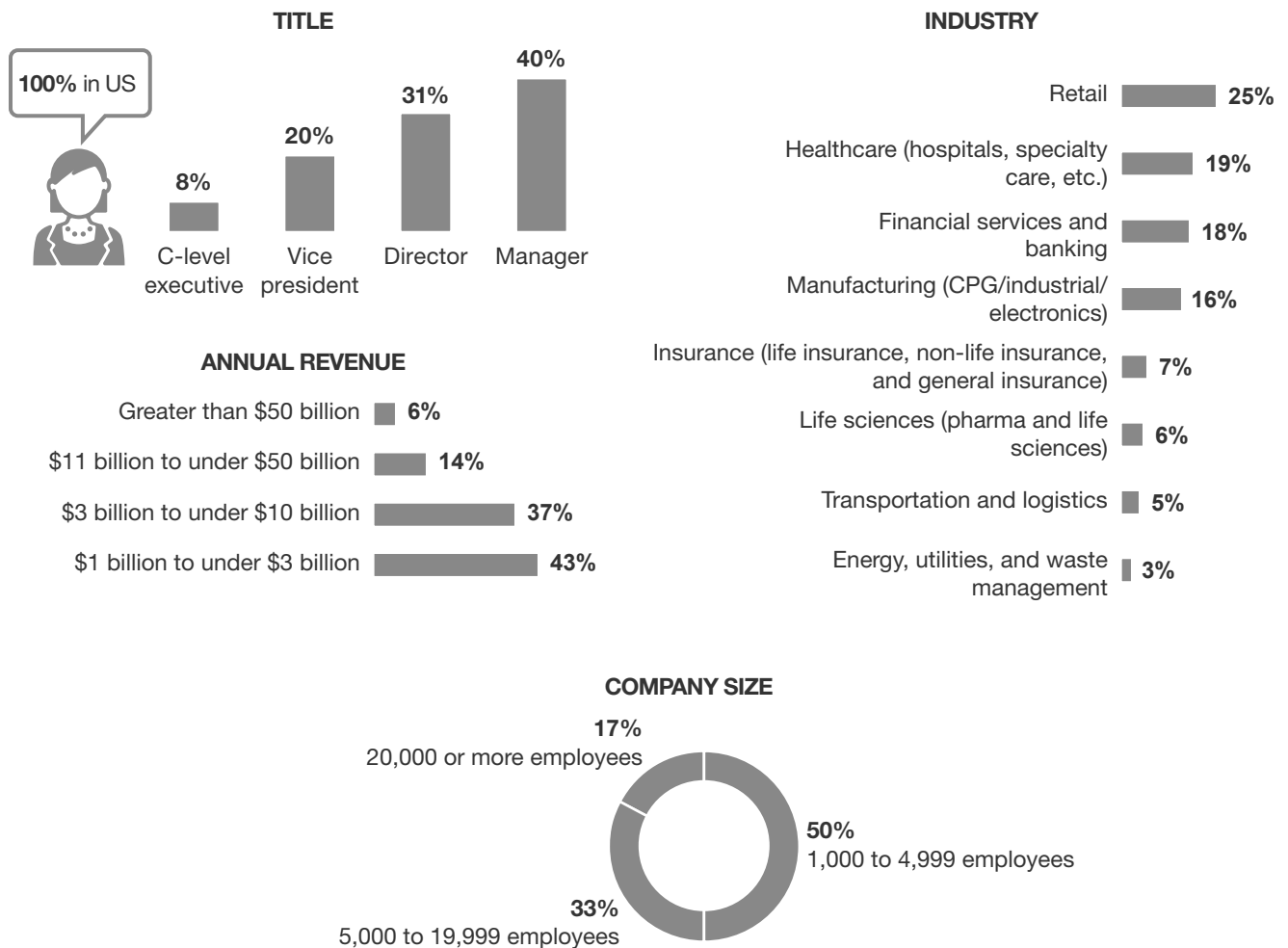
Determine the right set of tools for your organization. The fact that survey respondents indicated they feel they lack suitable tools even more than they lack qualified personnel is not only surprising, but also troubling. Tools are a big part of the DevOps landscape, but arguments for the most appropriate tools can threaten progress. Don't get sidetracked by religious wars over tooling.

Appendix A: Methodology

In this study, Forrester surveyed 220 enterprise infrastructure and operations decision makers who are involved with their organizations' digital transformation initiatives. Questions provided to the participants asked about their firms' approach to digital transformation as it relates to infrastructure and applications, as well as exploring associated challenges and future plans to expand digital transformation efforts. The surveyed companies were US-based and had annual revenues of over \$1B. The study was completed in October 2018.

Appendix B: Demographics/Data

RESPONDENT DEMOGRAPHICS



Base: 220 US enterprise infrastructure and operations digital transformation decision makers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Cognizant, October 2018

Appendix C: Endnotes

¹ Source: “Build A Pragmatic Cloud Strategy That Delivers Real Value To Your Organization,” Forrester Research, Inc., December 11, 2018.

² Source: “Enterprise Fusion: Your Pathway To A Better Customer Experience,” a commissioned study conducted for Forrester Consulting on behalf of Cognizant, August 2018.

³ Source: “Organize Your People For Digital Success,” Forrester Research, Inc., January 20, 2017.

⁴ Ibid

⁵ Source: “Top 10 Facts Every Tech Leader Should Know About Hybrid Cloud,” Forrester Research, Inc., April 25, 2018.

⁶ Source: “Best Practices: Cloud Workload Security,” Forrester Research, Inc., October 1, 2018.

⁷ Source: “The Sorry State Of Digital Transformation,” Forrester Research, Inc., April 24, 2018.

⁸ Source: “Build A Pragmatic Cloud Strategy That Delivers Real Value To Your Organization,” Forrester Research, Inc., December 11, 2018.