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The Cutting Edge Of Tax

Examining The Power And Value Of Edge
Deployment For Tax Software

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Executive Summary

As retailers continue down the path of digital transformation, today's IT professionals face a multitude of challenges such as an increasing number of channels and endpoints to manage, rising security risks, and a larger demand on internet bandwidth. These changes make it crucial to find the right technology to address these growing issues, which is particularly true for tax software.

In March 2022, Vertex commissioned Forrester Consulting to survey 400 technology decision-makers who are responsible for purchasing tax software to better understand their current technology deployments, their interest in a containerized edge deployment, and the potential value they see in this type of solution.

We found that there is significant appetite among IT decision-makers for new ways to deploy tax technology, especially for edge computing.
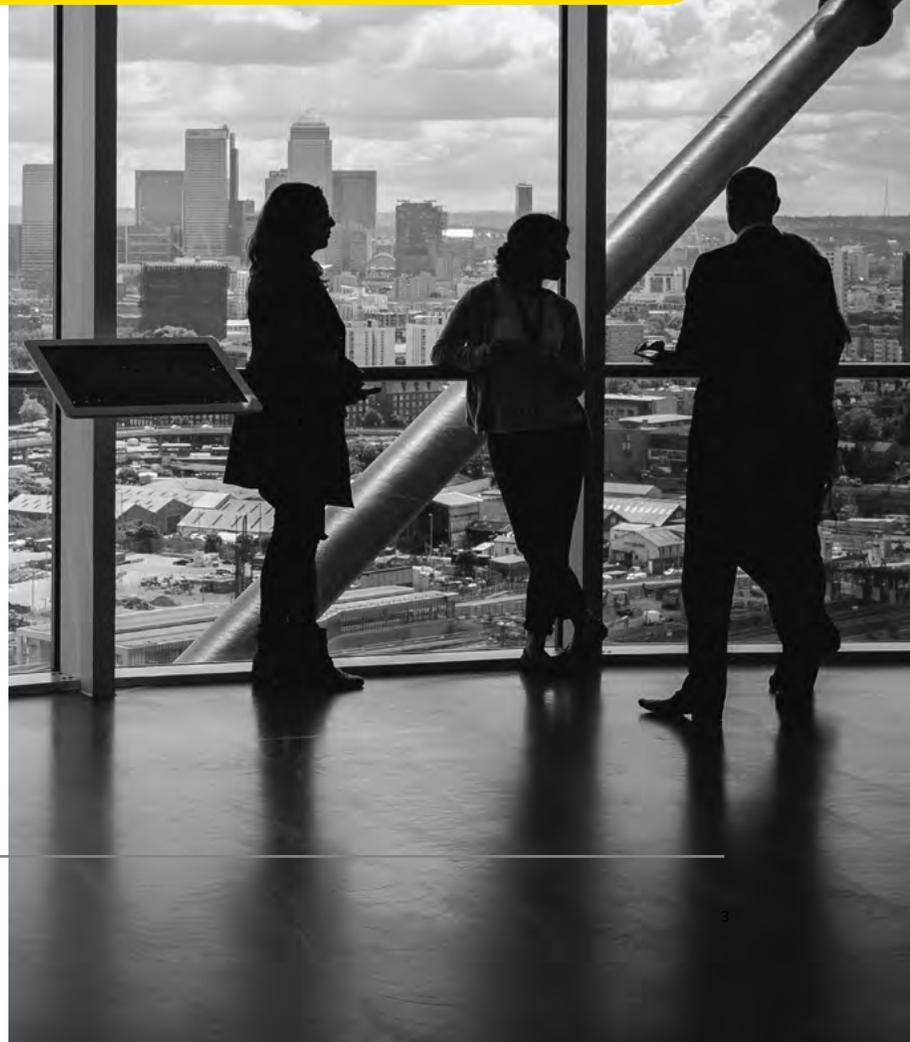
Key Findings

Eighty-seven percent of decision-makers are rethinking their organizations' current tax software deployments. While cloud is fast and agile, 82% of cloud users say that when they lose internet access, their tax software does not correctly operate. And while on-prem tax solutions deliver stability and security, 70% of on-prem users say that the tax software process takes longer than they'd like it to. Decision-makers are searching for a solution that can be the best of both worlds.

Eighty-three percent of decision-makers are interested in a containerized edge tax solution. Forrester found that interest levels in moving tax technology to the edge are very high and so are expectations to receive business value. Decision-makers expect improved performance, scalability, control, and reliability.

Three-quarters of decision-makers say that containerization provides consistency to software deployed at scale. Survey respondents have had significant success with edge deployments elsewhere in their organizations, particularly when enabling edge through containerization. Respondents indicate that 87% of their organizations are using edge technology today, and 51% are enabling that use through containerization.

Seventy-one percent of decision-makers whose organizations enable edge computing by using containerization see improved security. The biggest challenges decision-makers cite with edge computing are around security, however, enabling edge with containerization can help improve those issues.

In Search Of The Right Tax Solution

In this study, Forrester examined the potential to deploy tax using a modern method that exists outside of the on-prem/cloud paradigm: edge computing and containerization. By surveying 400 IT decision-makers at organizations in the United States, the United Kingdom, and Germany, we found that:

- **Eighty-seven percent of technology decision-makers are interested in exploring new ways to deploy tax.** Tax software purchasing decisions normally come from tax experts without much consideration given to what technology and deployment option makes sense with the organization's overall tech stack. However, IT is looking to correct this: 80% of respondents say IT should have a larger role in making decisions about tax software; 81% say tax is part of their digital transformation process; and 81% say they could be more efficient in the way they deploy their tax software.

- **Over the past three years, organizations have shifted tax deployments to the cloud and hybrid models.** There has been significant movement in the tax software space towards the cloud (see Figure 1). However, over half of respondents note how their organizations utilize on-prem solutions to maintain the right balance that meets their unique needs.

83%

of technology decision-makers say they are interested or very interested in a containerized edge tax solution.

Figure 1

"How is your organization's tax software deployed today? How was it deployed three years ago?"

● Three years ago   ● Today

	Three years ago	Today
Cloud/SaaS solution	30%	48%
Combination of on-prem and cloud	12%	42%
On-prem solution	57%	10%

Base: 400 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

- **Eighty-three percent of IT decision-makers are interested in a containerized edge tax solution.** When asking IT decision-makers about their interest in a potential containerized edge solution for tax, only 3% say they are not interested. This idea strikes a chord, particularly with those who currently have a combination of cloud and on-prem solutions, i.e., those who are looking for a middle ground between the two (see Figure 2).

Figure 2

"To what extent could each of the following impact the store checkout experience?"

◯ Moderate/significant impact
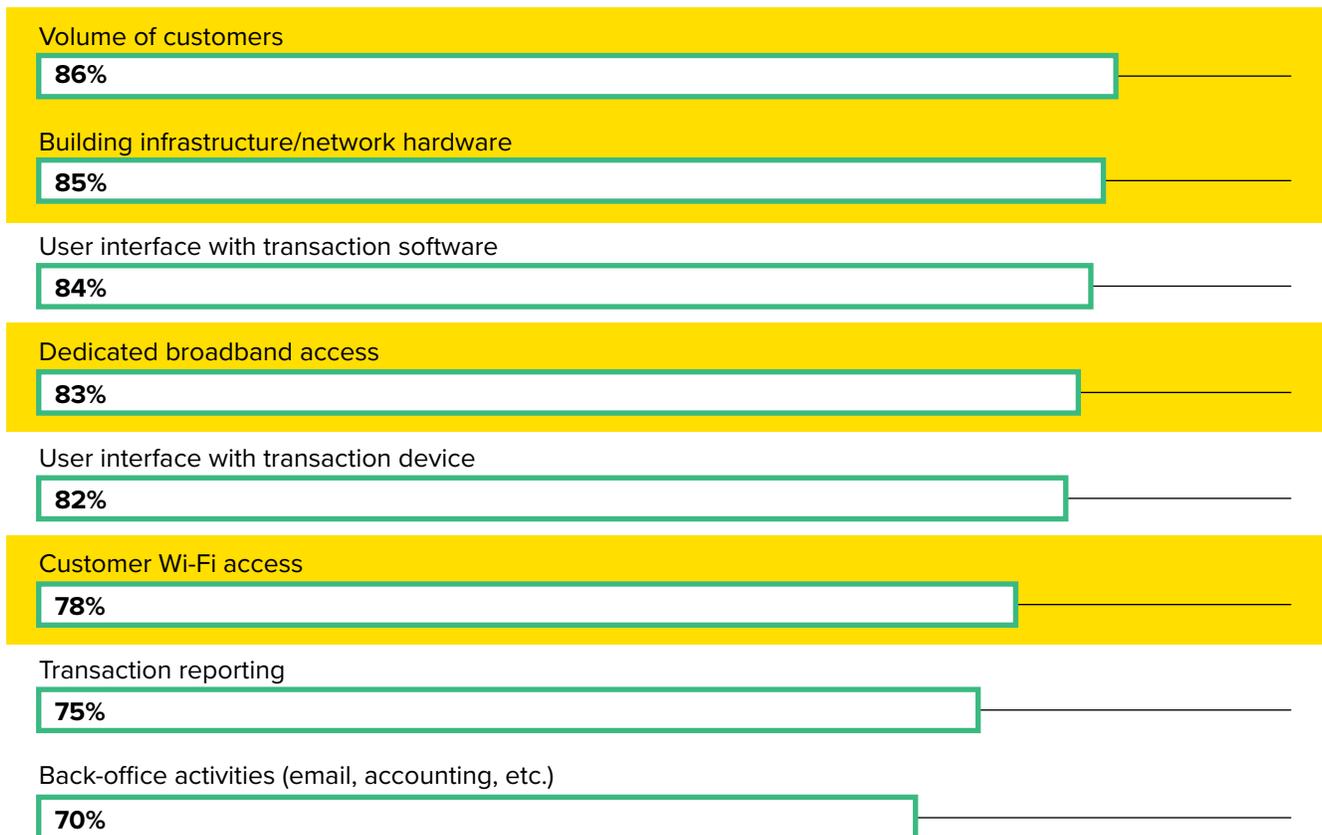
Volume of customers
86%

Building infrastructure/network hardware
85%

User interface with transaction software
84%

Dedicated broadband access
83%

User interface with transaction device
82%

Customer Wi-Fi access
78%

Transaction reporting
75%

Back-office activities (email, accounting, etc.)
70%

Base: 400 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

Why are organizations looking for a new way to deploy their tax software, and why is interest in edge so high? We'll dive into the specific benefits of edge later in this study, but first, it's important to examine the challenges surrounding current tax deployments.

CLOUD DEPLOYMENTS OFFER AGILITY AT THE EXPENSE OF CONTROL

More than half of IT decision-makers indicate their organizations deploy tax software solely in the cloud today, and 90% say their organizations have some level of cloud deployment for tax software. While cloud offers significant benefits, it does not come without challenges, especially in a retail environment. We found that:

- **Cloud offers a more agile and cost-effective option.** Decision-makers at organizations which currently use a cloud solution for tax software say their top reasons for doing so include: ease of maintenance, faster update speed, and better scalability, flexibility, and general speed (see Figure 3).

82%

of cloud users say that when they lose internet access, their tax software does not operate correctly.

Figure 3

"Which of the following were your organization's top reasons behind choosing a cloud/software-as-a-service-based tax solution instead of an on-prem solution?"

| **72%** Reduced maintenance/ support costs | **71%** Faster update speed | **68%** Greater speed | **67%** Scalability | **63%** Flexibility | **62%** More consistent deployment of the solution across the company |
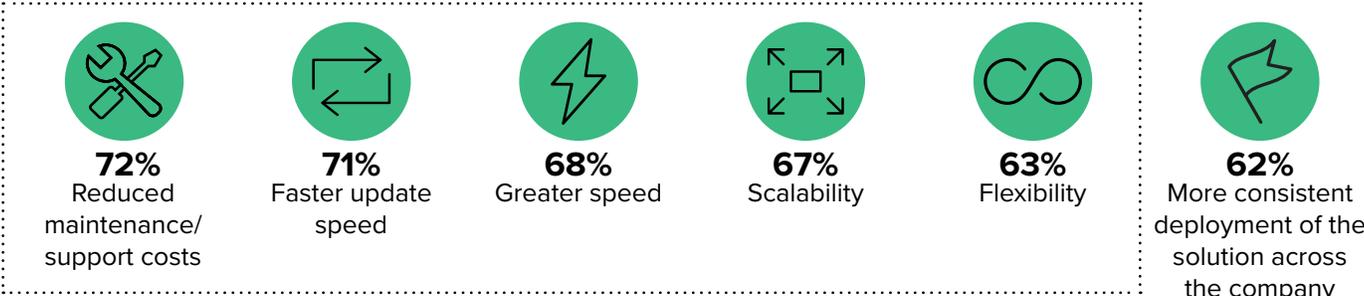
Base: 191 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

- **However, cloud has significant security and control challenges.** Cloud users worry about security and a lack of control when it comes to tax software: 50% say they worry about security in their cloud tax deployments. In addition, the dependency on internet bandwidth is a significant impediment: 42% say the reliance on the internet slows them down, and 82% say that when they lose internet access, their tax software does not operate correctly.

- **Cloud can cause challenges to the customer checkout experience.** Respondents cited the following as impacting the store checkout experience: volume of customers (86%); building infrastructure and network hardware (85%); dedicated broadband access (83%) ; and customer Wi-Fi access (78%). Decision-makers are looking to mitigate these issues by considering new software and hardware options. If they don't, they will be forced to continue to gate customer checkout volume and Wi-Fi access, creating a poor customer experience (see Figure 4).

Figure 4

"In an effort to maintain store bandwidth, which of the following has your IT organization actively attempted to mitigate over the past three years?"

Assessing the use of particular
types of software applications
60%

Managing the volume of customers
going through checkout simultaneously
59%

Building infrastructure/network hardware
54%

Managing customer Wi-Fi access
48%

Managing employee Wi-Fi access
38%

Reporting on transactions
38%

Managing back-office activities
37%
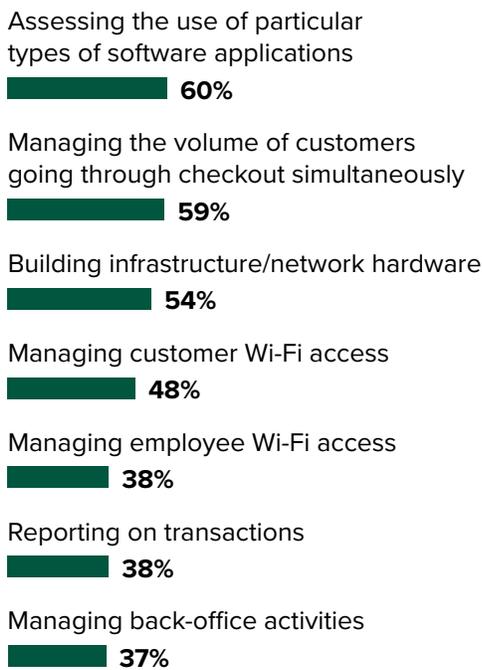
What consequences does your organization face from slow internet speed during checkout?"
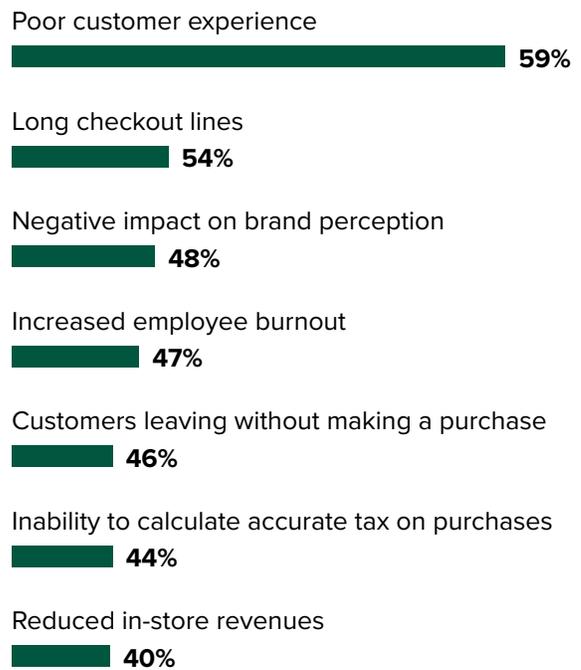
Poor customer experience
59%

Long checkout lines
54%

Negative impact on brand perception
48%

Increased employee burnout
47%

Customers leaving without making a purchase
46%

Inability to calculate accurate tax on purchases
44%

Reduced in-store revenues
40%

Base: 400 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

ON-PREM DEPLOYMENTS TRADE AGILITY FOR STABILITY

While it is easy to write off on-prem deployments as being outdated, our study found that the majority of respondents note that their organizations still have some form of it, and a good number (10%) are still exclusively on-prem. There are good reasons for organizations to want to stay on-prem, but there are real downsides as well. We found that:

- **On-prem offers more stability, control, and security.** Sixty-eight percent of on-prem users remain on-prem to keep control of the update process and maintain security. In addition, the prospect of updating legacy, often highly customized, systems is daunting (see Figure 5).

Figure 5

"Which of the following were your organization's top reasons behind choosing an on-prem solution for tax software, instead of a cloud/software-as-a-service-based solution?"

68%
We want to maintain control over the update process

68%
Challenge of updating legacy systems

53%
Our systems are highly customized

40%
Security concerns

38%
We don't want to eat up bandwidth in our stores

68%
of on-prem users remain on-prem to maintain control over the update process.
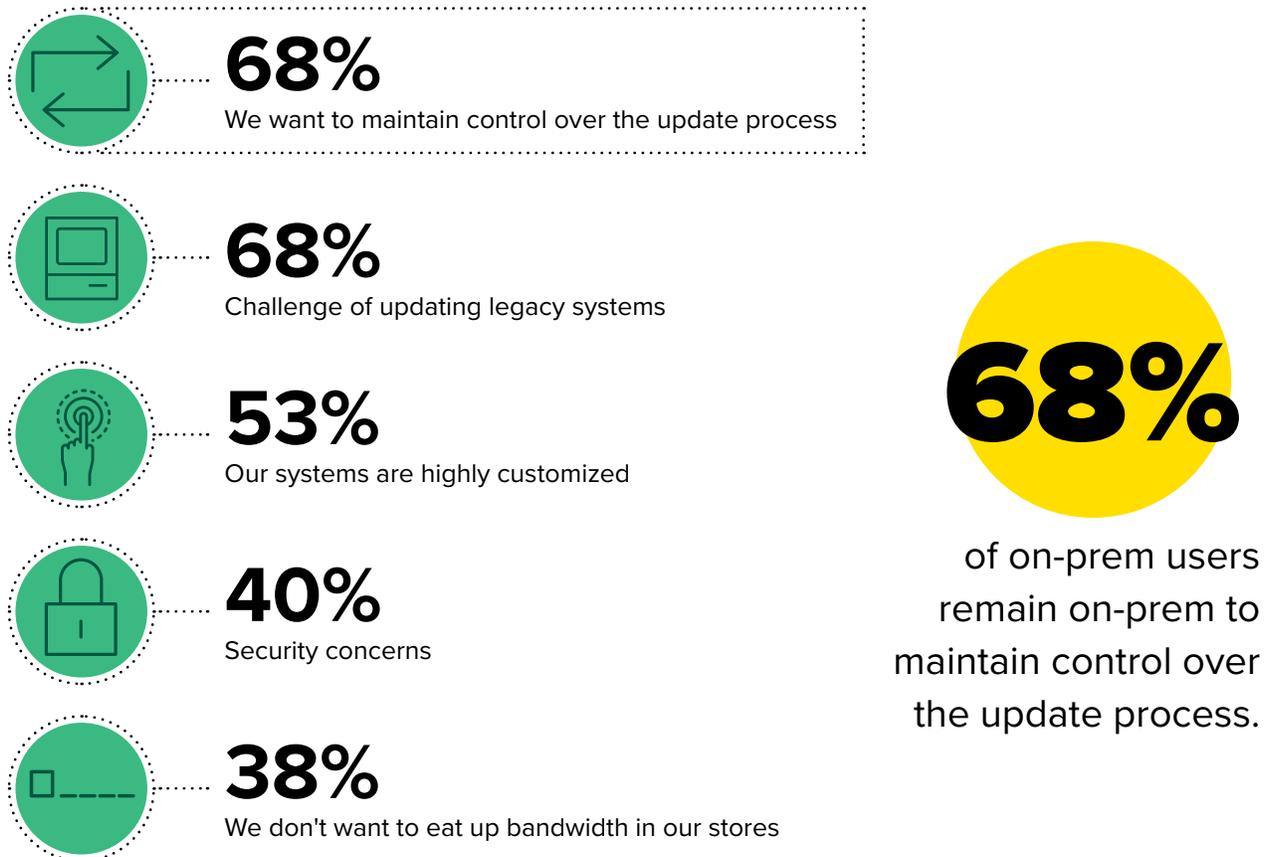
Base: 40 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

- **However, on-prem deployments are slower to upgrade, less agile, and more reliant on legacy systems.** On-prem deployments are more stable and allow businesses to maintain more control, but they can't compete with cloud when it comes to agility and flexibility. In fact, 70% of on-prem users say that the tax software update process takes longer than they'd like it to. The top challenges on-prem users cite are slow update processes and an inability to adapt quickly to changes in tax software. This is particularly important as regulations change frequently and fast updates are necessary.

70%

of on-prem users say that the tax software update process takes longer than they'd like it to.

The last thing we need to examine in order to fully understand the context behind an edge and containerization deployment for tax software is how organizations are utilizing edge and containerization across other parts of their technology ecosystem. We found that 87% of respondents' organizations have adopted edge computing, and 51% are using containerization as the deployment method for edge. By implementing this technology, organizations have found that:

87% of respondents' organizations have adopted edge computing, and **51%** are using containerization as the deployment method for edge.

- **Edge provides significant benefits but comes with some security worries.** Organizations who adopt edge see benefits in flexibility, speed, scalability, and ease of use (see Figure 6). However, for decision-makers whose organizations have not adopted edge, their biggest concern — and reason for not doing so — is around security.

- **Seventy-three percent say containerization provides consistency with software deployed at scale.** In fact, 71% of those who use containerization as a deployment method for edge see improved security.

- **A containerized edge approach addresses issues found with both cloud and on-prem tax deployments.** In addition to addressing common security concerns with cloud, 58% of respondents reported that enabling edge with containerization provided internet outage protection. Nearly half said that containerization helps provide the agility needed to make application updates, which is a significant issue with on-prem deployments in the tax world.

71%

of those who deploy edge using containerization see improved security.

Figure 6

"What benefits does your organization get from using edge computing?"

Ease of maintenance

58%

Flexibility to support modern use cases

57%

Improved security

56%

Faster response time

55%

Improved scalability

53%

Reduced latency

51%

Reduced expense of providing network connectivity to remote locations

48%

Local data storage and processing (compliance)

45%

Ability to conduct processing that cloud can't support

44%

Internet outage protection

42%

Consistent deployment

41%

Base: 348 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

IT Decision-Makers Foresee Significant Value In A Containerized Edge Tax Solution

Given the challenges with current tax deployments and the value of edge and containerization in non-tax contexts, it is easy to see why IT decision-makers have so much interest in a containerized edge solution for tax software. With this type of tax deployment, they expect to see:

- **Reduced dependence on connectivity and bandwidth.** Cloud tax deployments use internet bandwidth during the checkout process, and this can create significant issues. It's unsurprising then to see why 73% of respondents say that a containerized edge approach that doesn't use internet bandwidth during checkout would be valuable or very valuable. Additionally, nearly half indicate that they expect increased resistance to outages as another benefit of adopting a containerized edge solution (see Figure 7).

73%

said that control over the configuration and creation of containers would be valuable or very valuable.

Figure 7

"How valuable would each of the following features of a containerized tax solution be for your organization?"

○ Valuable/very valuable

Control over automation of updates
80%

Fitting with existing container solutions for other software
76%

Not using internet bandwidth during checkout
73%

Control over the configuration and creation of containers
73%

Small footprint (memory, processing, etc.)
63%
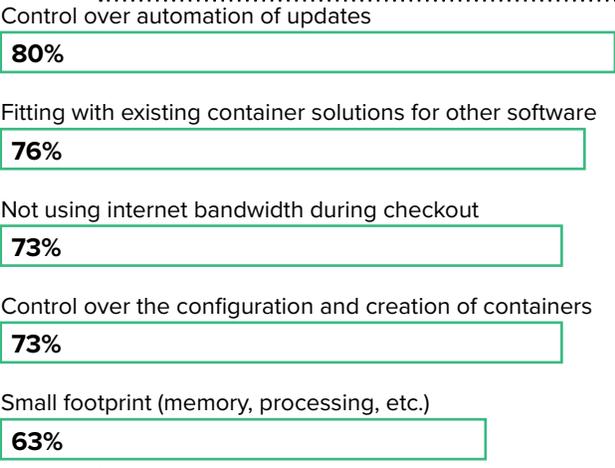
"You indicated that you would potentially be interested in a containerized tax solution. What benefits do you think a containerized edge solution could bring to deployment of tax software?"
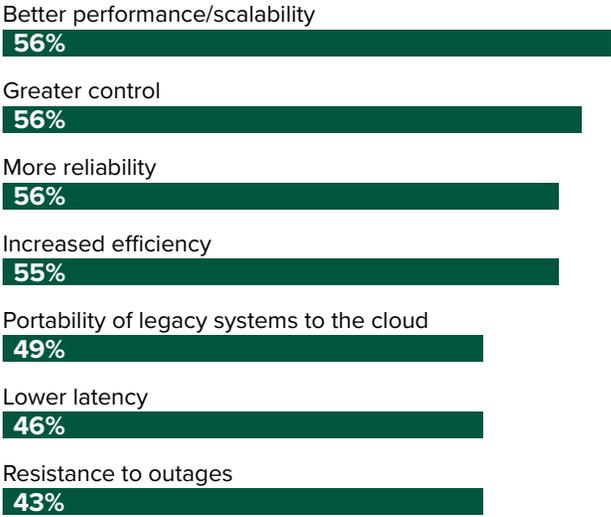
Better performance/scalability
56%

Greater control
56%

More reliability
56%

Increased efficiency
55%

Portability of legacy systems to the cloud
49%

Lower latency
46%

Resistance to outages
43%

Base: 400 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

- **More control over updates.** For on-prem users, deploying updates is a very time-consuming and manual process, whereas cloud users have very little control over when updates happen. Eighty percent of decision-makers agree that more control over automating updates and greater control in general would be top benefits of an edge tax solution.

- **Deployment scalability.** Deploying tax solutions at scale can be a significant challenge in a brick-and-mortar retail environment. This is potentially why 73% of respondents say that control over the configuration and creation of containers would be valuable or very valuable.

With such significant interest in a containerized edge solution, what concerns do technology decision-makers have today that could potentially hold them back from moving towards this type of deployment? The most common concern is understandably a lack of knowledge. Technology decision-makers are tasked with navigating the red tape of changing systems and convincing tax and business leaders that edge deployment has value (see Figure 8).

Figure 8

"What concerns would you have about a containerized tax solution?"

55%

I would want to know more about it

46%

It would be hard to convince people to change our system

44%

We face a lot of red tape when trying to change systems

38%

I'm not sure if the tax people at our company would be happy with it

34%

I don't know if we have the skills to deploy it
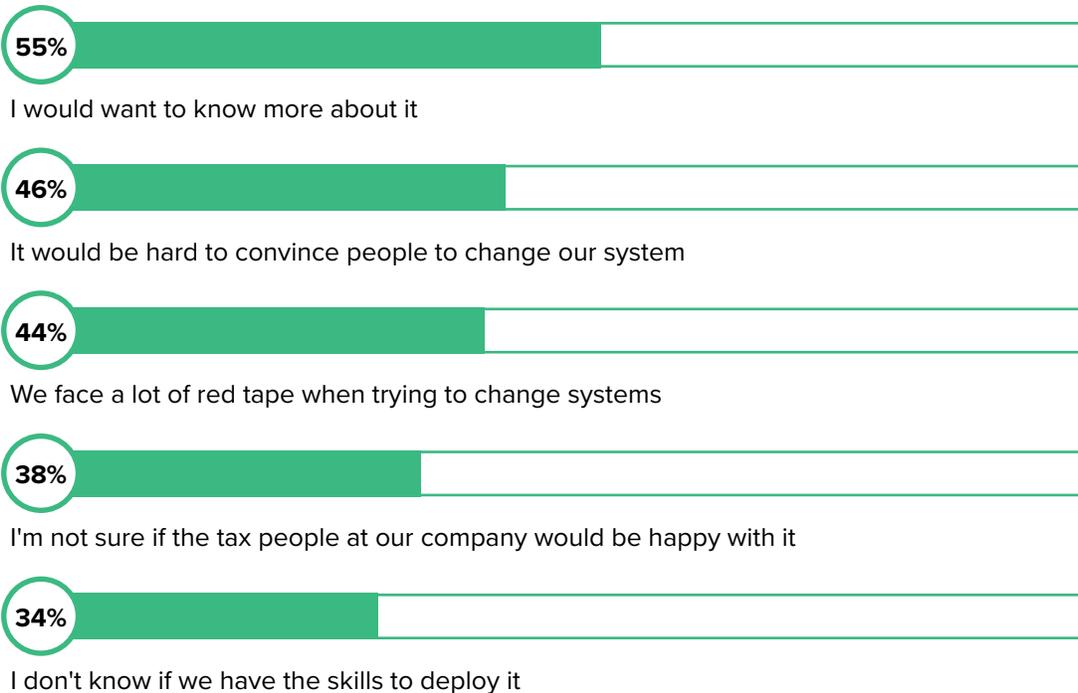
Base: 390 IT decision-makers responsible for purchasing tax software
Source: A commissioned study conducted by Forrester Consulting on behalf of Vertex, March 2022

Key Recommendations

Retail firms are transforming their operations to support omnichannel environments and seamless customer experiences. Application containers are revolutionizing how IT decision-makers engage in app development by enhancing flexibility, improving efficiency, and enabling competitive differentiation. Many IT decision-makers are deploying containerized technology to power edge computing solutions, which distribute data, applications, and workloads where they best optimize outcomes in diverse retail environments.

Forrester's in-depth survey of technology stakeholders about the role of application containers and edge deployments for tax software yielded several important recommendations:

Address stakeholder concerns related to containerized tax applications at the edge.

IT decision-makers must help business stakeholders understand the value of containerized edge solutions and address questions related to transitioning to a strategy that's defined by containerized application deployment at the edge. They should clearly communicate the benefits and value of using this type of deployment. IT decision-makers should seek partner solutions that help address these concerns and facilitate seamless deployment of containerized tax applications that span various edge environments.

Assess requirements for critical applications spanning various retail channels.

A key element of retail operations is seamlessly incorporating tax calculation engines in the transaction. It is important for IT decision-makers to work with business stakeholders and assess current and future application priorities; this includes ensuring tax calculation apps are distributed in local and global retail sites and omnichannel environments.
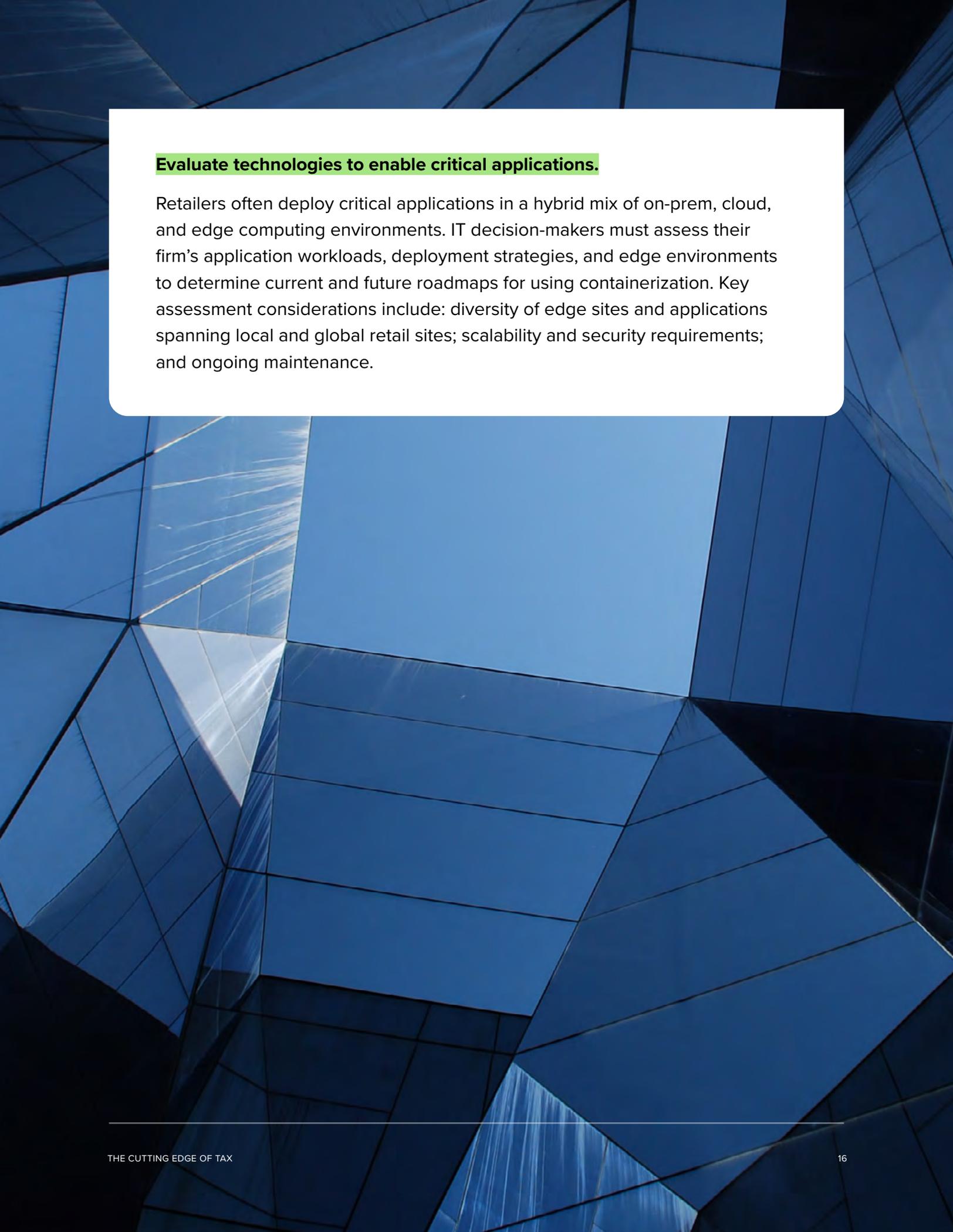
Evaluate technologies to enable critical applications.

Retailers often deploy critical applications in a hybrid mix of on-prem, cloud, and edge computing environments. IT decision-makers must assess their firm's application workloads, deployment strategies, and edge environments to determine current and future roadmaps for using containerization. Key assessment considerations include: diversity of edge sites and applications spanning local and global retail sites; scalability and security requirements; and ongoing maintenance.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 400 IT decision-makers at organizations in the United States, the United Kingdom, and Germany to explore the viability and interest in a containerized edge tax solution. Survey participants included decision-makers responsible for purchasing tax software. Questions provided to the participants asked about tax software deployment challenges and preferences. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in February 2022 and was completed in March 2022.

Appendix B: Demographics

TOP INDUSTRIES	
Retail	**36%**
Manufacturing and materials	**11%**
Consumer product goods and/or manufacturing	**10%**
Financial services and/or insurance	**8%**
Technology and/or technology services	**6%**

COMPANY REVENUE	
$250M to $349M	**11%**
$350M to $449M	**26%**
$450M to $549M	**24%**
$550M to $1B	**19%**
$1B to $5B	**12%**
>$5B	**10%**

COUNTRY	
United States	**50%**
United Kingdom	**25%**
Germany	**25%**

RESPONDENT LEVEL	
Vice president	**52%**
Director	**44%**
Manager	**2%**
Project manager	**2%**

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