

Agents of Transformation 2021: The rise of full-stack observability

How technologists can manage soaring IT complexity
by connecting full-stack observability with business context



Introduction: Tackling complexity with full-stack observability

Technologists the world over are facing a defining moment in their careers.

After almost a year of unremitting fire-fighting to guide businesses through the initial shock of COVID-19, technologists now need to raise their performance to even greater heights to propel their organizations through and beyond the pandemic.

Technologists implemented digital transformation projects faster in 2020 than in any previous year – on average three times faster according to new research presented in this report. However, they now face the challenge of spearheading wholesale innovation programs at even greater speeds over the next 12 months. And at the same time, they must deliver flawless digital experiences to customers and employees.

Failure is not an option. But rapid digital transformation comes at a price. Many IT teams are now experiencing crippling complexity across their IT infrastructure caused by urgent innovation and technology sprawl across on-premise and cloud architectures.

In response, technologists have recognized the need to monitor the full IT estate, from traditional, legacy IT systems through to new, hybrid cloud environments. This concept is known as full-stack observability – the ability to monitor the entire IT stack, from customer-facing applications down to core network and infrastructure, and it's vital for technologists wanting to identify and fix performance issues before they adversely affect customers and the business.

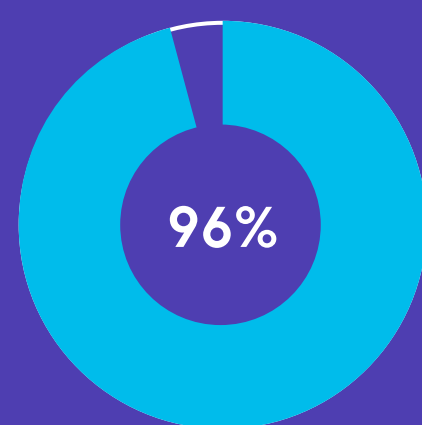
But on its own, full-stack observability simply isn't enough to tackle the layers of complexity now engulfing IT departments.



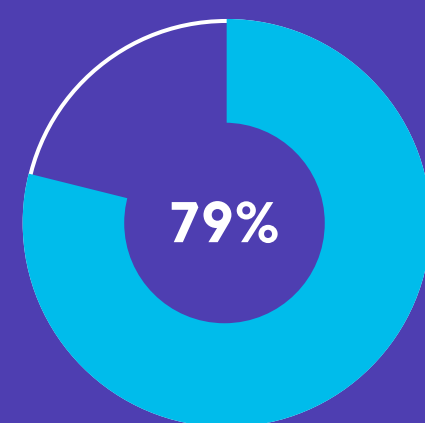
Technologists need to quickly navigate through the data deluge to pinpoint the most critical data and contextualize IT performance insights with real-time business data.

They need to observe what matters most by quickly understanding how it impacts the business, this will help them to prioritize actions, innovations and investments based on the direct impact to customers and the business.

Only when technologists are able to apply a business lens to IT performance can they truly connect the dots up and down the technology stack, cut through the 'noise' caused by ever-increasing volumes of data, and turn IT performance into business profit.



As this research finds, 96% of technologists now recognize that having the ability to monitor all technical areas across their IT stack and directly link that performance to business outcomes is now essential to delivering first-class digital experiences and accelerating digital transformation.



79% of technologists recognize that the technology decisions they make directly impact the performance of the business but 66% say they lack the strategy and tools to effectively measure how technology decisions impact business outcomes.

But perhaps most pressing is the reality that IT departments that are unable to link technology performance to business outcomes will suffer operationally and commercially. 73% of technologists state that the inability to connect full-stack observability with business outcomes will be detrimental to their business in 2021.

Today, many technologists are still without the tools they need to achieve their organization's innovation goals – creating difficulties in isolating technology performance issues and applying business context to technology decisions to better prioritize actions.

This report explores the heightened level of complexity facing IT departments after a year of tumultuous disruption.

It examines the urgent need for full-stack observability that enables technologists to see, understand and optimize performance across the entire IT landscape. And crucially, the research highlights the game-changing benefits for technologists when they are able to observe what matters and connect full-stack observability with business outcomes.

This is a defining moment for technologists to deliver the innovation that organizations – and our wider economies – will need to recover and prosper in the months and years ahead.

Research methodology

To better understand the complexity that technologists are facing in 2021, and to gauge general understanding of full-stack observability and the appetite for more business context, Cisco AppDynamics has undertaken comprehensive global research, from board-level directors and CIOs, through to senior and mid-level IT management.



This research comprised of:

- ▶ Interviews with 1,050 IT professionals in organizations with a turnover of at least \$500m
- ▶ Interviews were conducted in 11 markets – Australia, Canada, France, Germany, India, Japan, Russia, Singapore, United Arab Emirates, United Kingdom and United States
- ▶ Respondents worked across a range of industries, including IT, financial services, retail, public sector, manufacturing and automotive, and media and communications

All research was conducted by Insight Avenue in December 2020 and January 2021.

One year on: IT pressure reaches boiling point

Technologists have found themselves at the sharp end of their organizations' response to the COVID-19 pandemic.

With many businesses shifting to digital-only propositions and remote working almost overnight, the need to deliver world-class, flawless digital experiences for both customers and employees has taken on a whole new level of importance. For many

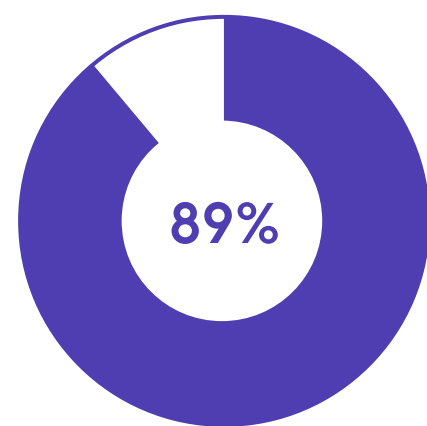
businesses, it has been the difference between survival and extinction.

At the outset of the pandemic, in the [Agents of Transformation Report 2020: COVID-19 Special Edition](#), we asked technologists to tell us about the immediate impact COVID-19 was having on their organizations and their own jobs. The results told a story of urgent digital transformation, heightened pressure and new opportunities.

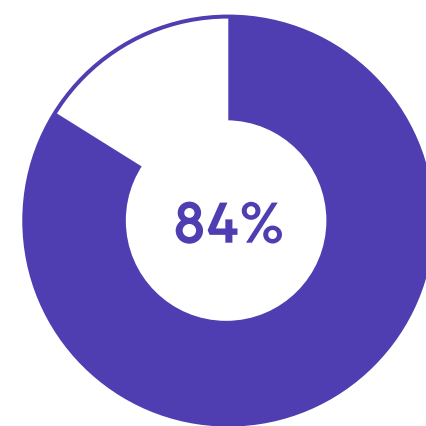
Now, almost 12 months on, this new report explores how the initial surge of activity played out across IT departments around the world in 2020, and how technologists are approaching what could potentially be an even tougher year ahead.

The study finds that technologists are, unsurprisingly, feeling the strain.

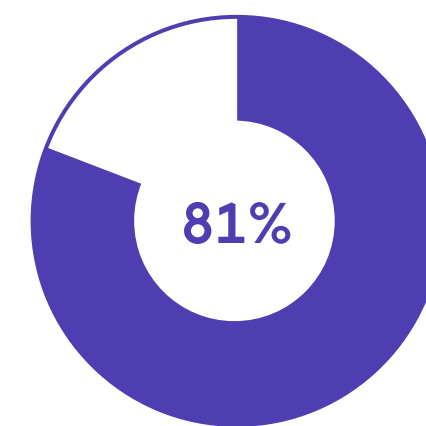
How the pandemic has impacted technologists' workload and performance



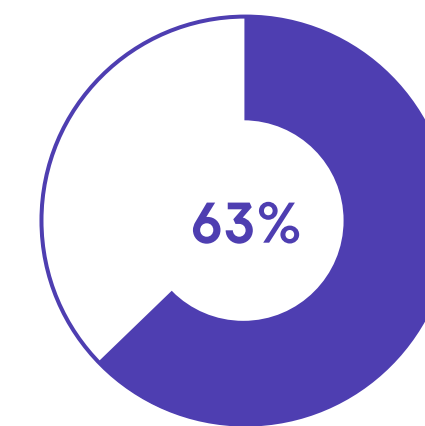
89% of technologists report feeling under immense pressure at work



84% admit to having difficulty switching off from work



81% say that they feel increased frustration about work



63% report increased levels of conflict with colleagues during 2020

Spiraling complexity in the IT department

75%

of technologists claim that their response to the pandemic has created more IT complexity than they have ever experienced.

83%

feel that their own job has become more complex over the last year.

This added complexity can be attributed to a wide range of different factors and dynamics within the IT department and beyond.

The biggest contributor is technologists having to manage an entirely new set of priorities and challenges as a result of the pandemic. As businesses have pivoted their entire strategies to serve customers in new ways and enable employees to work effectively during the pandemic, technologists have been asked to deliver innovation projects at breakneck speed.

The research reveals that the timeline for the implementation of major strategic transformation projects accelerated three fold in 2020. Innovation initiatives that would typically have taken 21 months prior to the pandemic were delivered within seven months last year.

In order to facilitate transformation at this speed, businesses have been forced to fast-track their move towards cloud computing, but this in turn has led to yet more complexity, with technologists facing the challenge of controlling systems both within and outside of the core IT estate.

The end result is huge numbers of technologists struggling to manage overwhelming 'data noise', without the resources and support they need.

Which of these factors has contributed to increased tech complexity in 2020?

80%

A new set of priorities and challenges

78%

Technology sprawl and a patchwork of legacy and cloud technologies

77%

Acceleration to cloud computing

74%

Multiple, disconnected monitoring solutions



Looking ahead: The 3X digital transformation challenge

The pace of change within enterprise organizations is expected to accelerate further over the next year as businesses continue to look to technology innovation to survive and grow in a turbulent marketplace.

88%

of technologists predict that the biggest challenge they will face in 2021 will be the need to drive through transformation at speed. With digital transformation already running three times faster than before the pandemic, this presents a massive challenge.

Technologists point to a number of issues that they need to resolve to deliver the rapid and sustainable digital transformation their organizations need. This includes having access to the right skills and resources, being able to prioritize technology performance fixes based on potential business impact, and having visibility into the entire IT landscape.

85%

of technologists state that quickly cutting through noise to identify root causes of performance issues will represent a significant challenge in the year ahead.



The importance of observability across the full IT estate

To tackle spiraling complexity, technologists require complete and real-time visibility across the entire IT estate, from traditional IT systems to new, hybrid cloud environments.

And in order to achieve this, technologists recognize the need for a single, unified observability platform to monitor the full technology stack, instead of multiple, disjointed monitoring solutions.

95%

of technologists say having visibility across the whole IT estate is important.

In particular, technologists stress the need to monitor the health of applications and services and their impact on user experience and business outcomes; and the health of network and infrastructure (traditional, cloud or WAN) and its impact on applications and services.

Technologists are striving to connect the dots up and down the stack – from the customer or employee-facing application, all the way down to the lowest level infrastructure (compute, storage, network and public internet). They need a platform which is capable of receiving data from multiple sources to accurately understand and

represent topologies and dependencies, and to drive actions. Significantly, the research reveals the profound impact caused by not having full observability across all IT infrastructure.

96%

of technologists point to negative consequences of not having genuine visibility and insight into the performance of the whole technology stack.

These include difficulties prioritizing IT innovation, the creation of silos across the organization, and the loss of customers and revenue due to technology performance issues.

76%

of technologists acknowledge that they can no longer afford to rely on gut instinct with technology performance, not when confronted with these heightened levels of complexity – they need accurate, real-time data.

The five most important areas for technologists to monitor

- 1 Applications and services health
- 2 Network and infrastructure (traditional, cloud or WAN) health
- 3 Prioritizing issues and tickets on user and business impacts
- 4 A unified end-to-end transactional view (from the front-end to supporting back-end services)
- 5 Centralized metrics, logs, event and traces for whole IT ecosystem

The critical next steps: Aligning full-stack observability with business performance

IT cannot afford to be blind to the impact of technology performance on customer experience and the business. In the current environment, the cost of failure is too great.

Across every organization, a technology decision is now a business decision, such is the dependency that business operations have on IT. For technologists, that means that the ability to monitor the full IT stack is simply not enough on its own.

A business perspective on full-stack observability is vital for technologists to cut through the noise, pinpoint the most critical data and contextualize IT performance insights with real-time business data.

Through this business lens, technologists need to see, understand and optimize what happens inside and beyond their IT architecture. This includes monitoring across infrastructure, network, security and the technology they don't directly control, such as the public internet and cloud. But they also need business context on every data point and decision allowing them to organize IT issues, alerts, and incidents by what most impacts the business and user experience.

Only by tying IT issues to tangible business outcomes such as customer experience, sales transactions and revenue can technologists prioritize decision-making and actions based on what really matters to the business.

96%

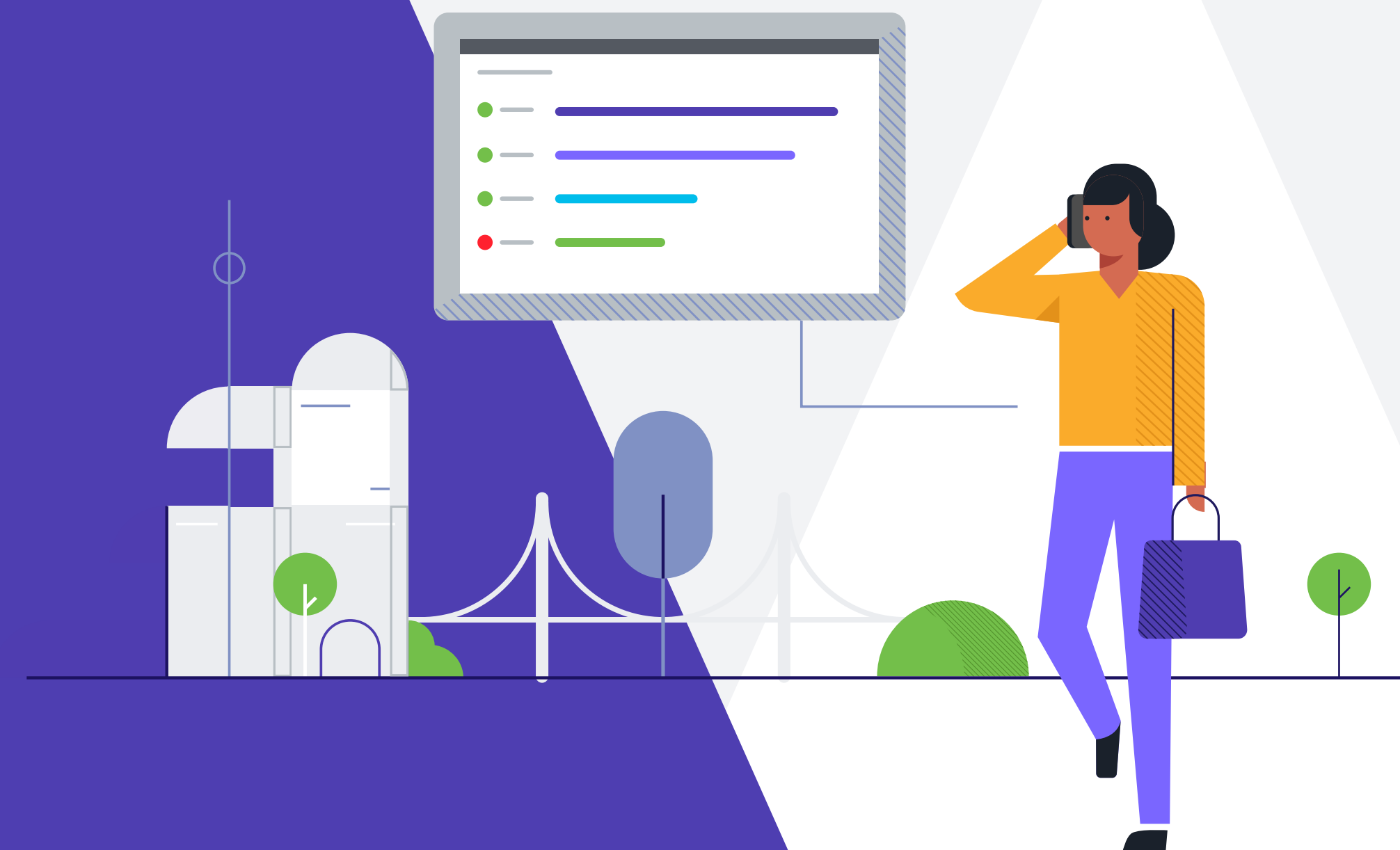
of technologists recognize that having the ability to monitor all technical areas across their IT stack and directly link technical performance to business outcomes will be important during 2021 ...

66%

and two thirds cite this as being very important.

92%

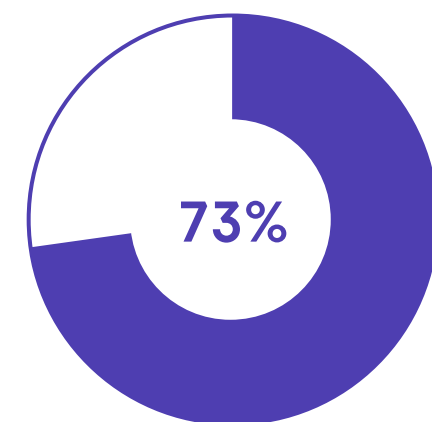
say the ability to link technology performance to business outcomes and to show ROI will be important to delivering innovation goals over the next year.



The impact of not aligning IT performance with business context

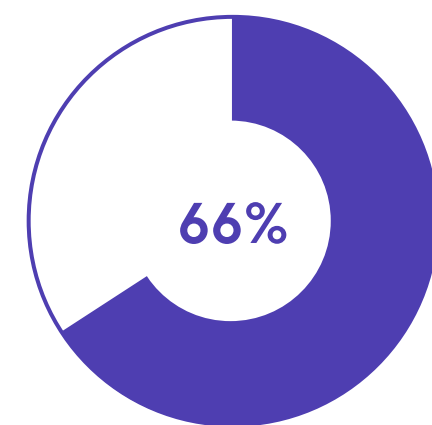
The inability to connect technology performance to quantifiable business outcomes is already having a profound impact within IT departments.

But many technologists are now becoming seriously concerned about the wider implications for their organizations.



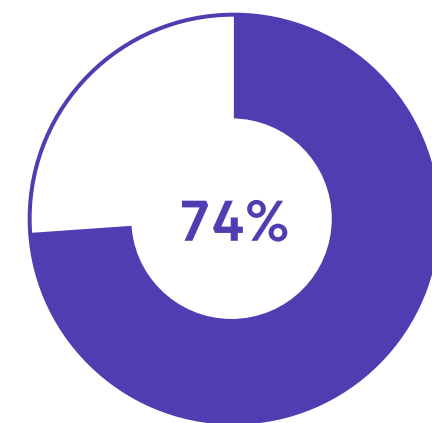
Almost three quarters of technologists fear that the inability to link IT performance with business performance will be detrimental to their business in 2021.

Technologists are acutely aware of the need to contextualize IT performance insights with real-time business data. But unfortunately most currently don't have the resources and support they need to do so.



Two thirds of technologists admit they lack the strategy and tools to effectively measure how technology decisions impact business outcomes.

On a personal level, the inability to observe what matters and to make strategic IT decisions based on business impact is leaving technologists feeling held back in their careers and understandably frustrated. They are being prevented from realizing their potential and creating a lasting legacy of innovation within their organizations.

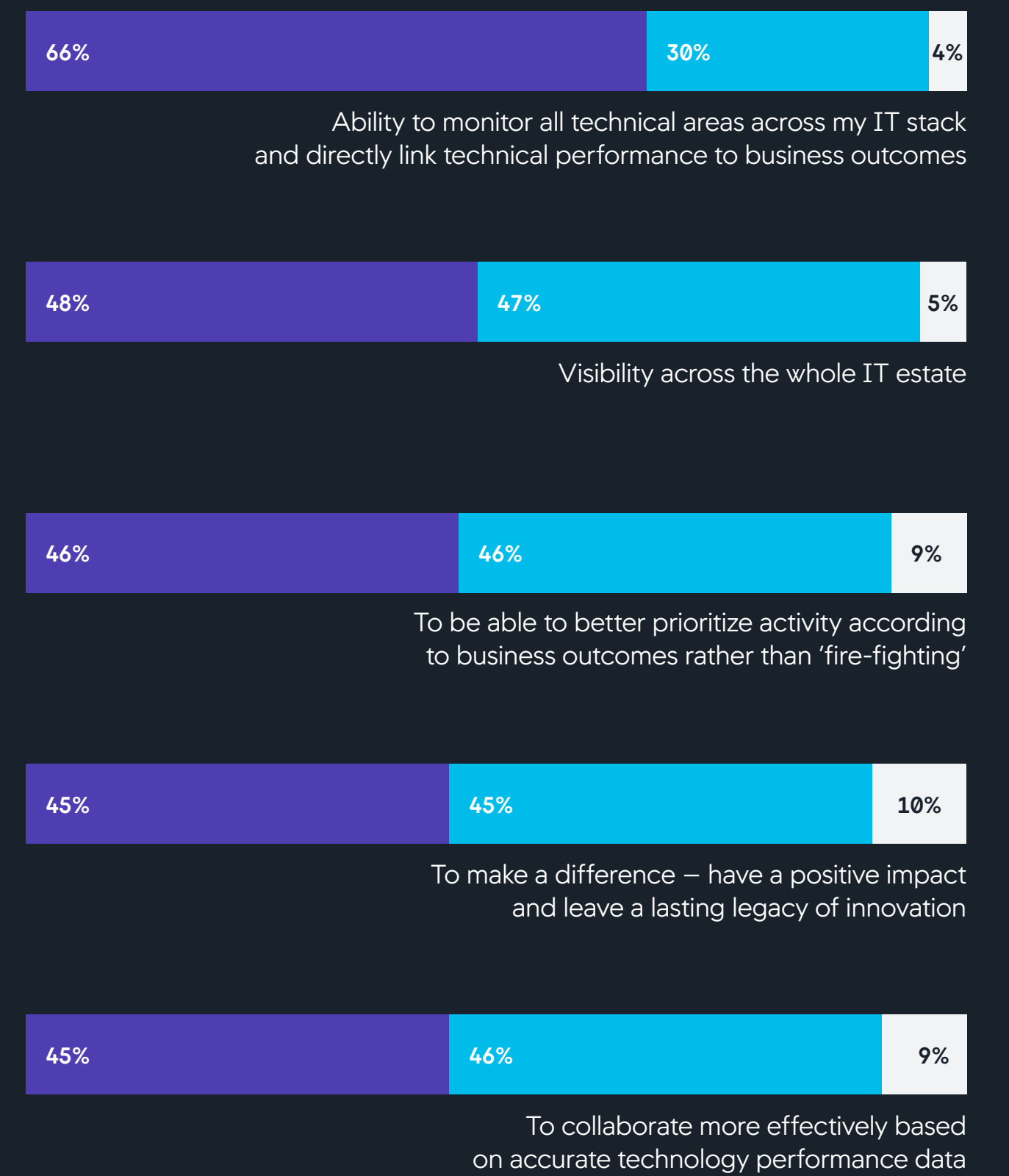


74% of technologists state that the inability to connect full-stack observability to business performance will hinder them becoming an elite technologist.

At a time when organizations desperately need their technologists to raise their performance to even greater heights and drive through accelerated digital transformation programs, this is undoubtedly an issue which must be urgently addressed.

Critical success factors for technologists in 2021

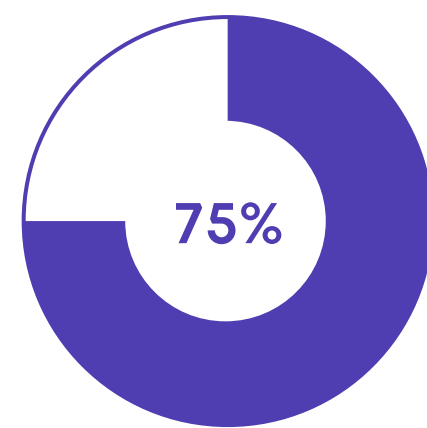
How important will the following be in your technology role going into 2021?



Very important Important Not particularly important

Overcoming the barriers to full-stack observability

Technologists are under no illusions about the urgent need to link technology performance with business outcomes.



Three quarters (75%) of technologists believe that their organization needs to connect full-stack observability to business outcomes within 12 months in order to remain competitive.

96%

However, 96% of technologists point to at least one barrier their organization must navigate in order to adopt a full-stack observability solution. Most common issues include, a lack of skills within their IT department, developing a robust business case for investment, and potential integration issues.

The research also exposes a level of confusion and uncertainty amongst technologists with regard to the types of monitoring and observability solutions that are now available to them.

71%

of technologists are wary of misleading claims from vendors who are re-labelling monitoring as observability.

65%

say it is difficult to distinguish between monitoring and observability tools.

These findings point to a need for greater transparency and clarity around full-stack observability within the market, and for the industry to provide technologists with the information and support they need to make informed decisions.

This is essential if technologists are to identify and implement a full-stack observability platform that links IT performance to business context and best supports their organizations' digital transformation plans.

Full-stack observability with business context will strengthen technologists in their defining moment

Technologists have demonstrated incredible levels of skill, commitment and resilience in response to the pandemic.

They've worked longer and harder than ever before, operating under extreme pressure to implement digital transformation programs at three times the speed of what was 'normal' before the pandemic.

But it seems likely that the year ahead will be even tougher.

Technologists will be asked to drive through innovation initiatives at a speed and scale never seen before, whilst delivering seamless digital experiences for customers and employees. And they will be asked to do this in the face of spiraling complexity across the IT estate.

This is a career-defining moment for technologists. They can step up to deliver the transformation their organizations need to compete and thrive in a turbulent and highly uncertain market. They can fulfil their potential and create their legacy. And in doing so, technologists can play an important part in kick-starting the economic recovery, post-pandemic.

But in order to deliver on their organizations' innovation goals and control heightened levels of IT complexity, technologists require full visibility and real-time insight into technology performance. They need the tools to monitor and optimize each and every part of the IT estate and to connect the dots up and down the technology stack, so that issues can be fixed before they impact customers and colleagues.

As this research has shown, full-stack observability is now business-critical for IT departments all over the world.

But it is only when full-stack observability is delivered with business context that technologists can truly cut through the noise to identify the most critical data, prioritize actions based on business outcomes and turn technology performance into profit.

By observing what matters and truly connecting IT performance to business outcomes, technologists can elevate their performance to a higher level.

75%

Three quarters of technologists feel like this year will be a defining moment for them professionally, but...

74%

fear that the inability to connect full-stack observability with business performance will hinder them performing as an elite technologist.

The AppDynamics Business Observability platform

Cisco AppDynamics is committed to helping technologists as they continue to spearhead their organizations' responses to the COVID-19 pandemic in an ever-more complex IT environment, providing the technology, technical support and training they need to prosper.

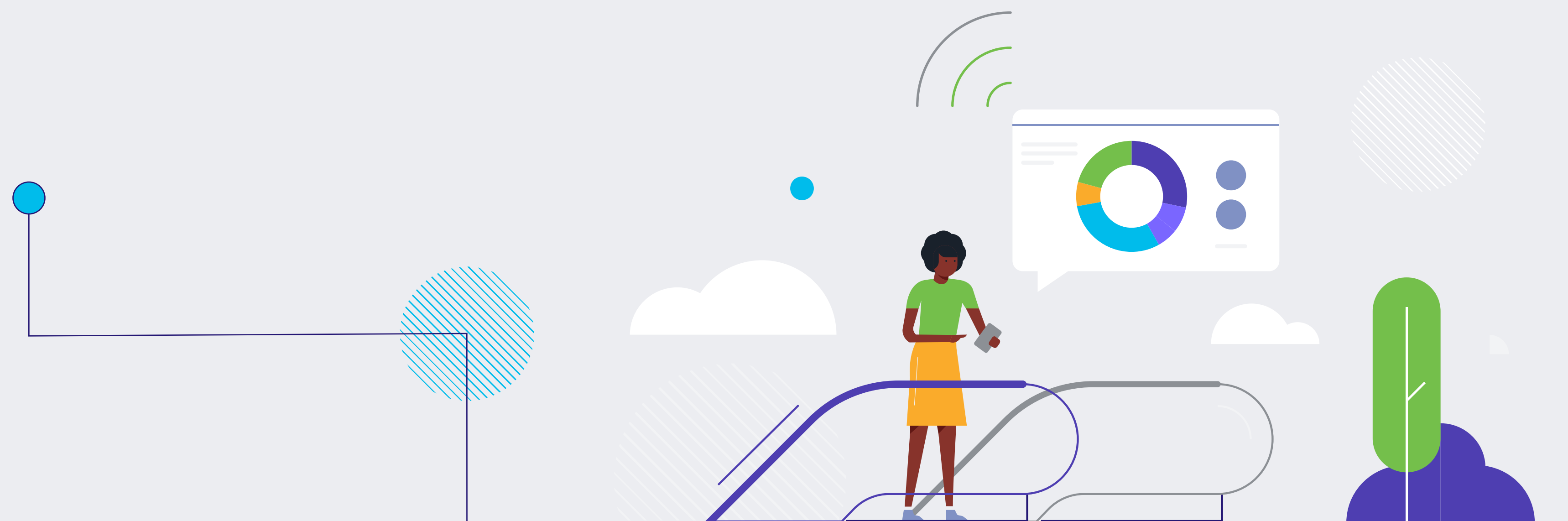
Over the last year, we've spoken and listened to thousands of the world's leading technologists to determine what they truly need as they tackle the biggest technology challenge of our lifetimes.

They told us that enterprise organizations need an observability platform that spans the full IT estate, from traditional IT systems to new, hybrid cloud environments; a unified platform which allows them to connect the dots up and down the entire IT stack; and crucially, a platform that provides them with a business lens on full-stack observability.

As this research has shown, technologists today need to contextualize IT performance insights with real-time business data, so that they can prioritize actions, innovations and investments based on the direct impact to the business.

The AppDynamics Business Observability platform is the only platform that enables technologists to monitor the full IT stack – from customer and employee-facing applications right through to low level infrastructure – and then link IT performance with business outcomes.

To find out more about the AppDynamics Business Observability platform, click [here](#).



About Agents of Transformation

Agents of Transformation are elite technologists with the skills, vision and commitment to drive positive and sustainable digital transformation within their organizations. AppDynamics is proud to be working alongside many of the world's most innovative companies, and to provide technologists with the tools, insight and training they need to accelerate their journey to becoming Agents of Transformation.

The Agents of Transformation campaign allows us to better understand the challenges and changing priorities for technologists around the world as they navigate these turbulent times and deliver game-changing business outcomes for their organizations. The previous edition of the report, Agents of Transformation 2020: The COVID-19 edition, is available [here](#).

About AppDynamics

Powered by Cisco, AppDynamics is on a mission to help companies see their technology through the lens of the business so they can work as one to prioritize what matters most. Today's users demand frictionless digital experiences. But meeting their ever-rising expectations is difficult because modern architectures have become too complex for even their operators to fully comprehend.

That's why AppDynamics is delivering full-stack observability that helps you see, understand, and optimize what happens inside and beyond your architecture—all through the lens of business impact. The AppDynamics Business Observability platform transforms organizations faster by providing business context deep into the technology stack, aligning teams around shared priorities, and enabling technologists to act with confidence on what matters most to the business.