

Systems Resilience

Managing unprecedented
disruption with an eye to
the future

April 2020



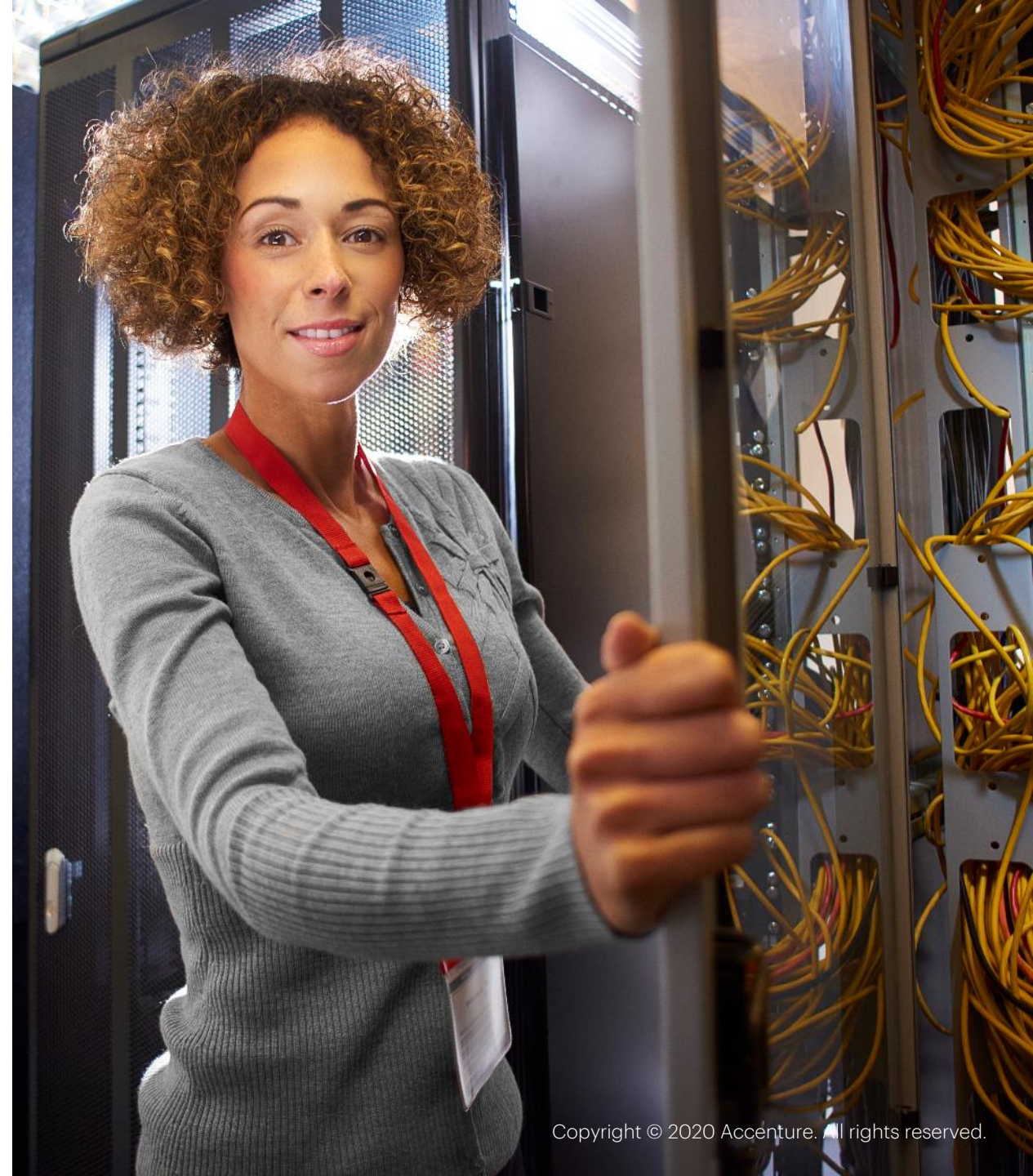


In response to COVID-19, the priority for your business is, first and foremost, to protect the health and safety of your people. At the same time, it is essential for you to ensure the stability of critical business operations and underlying systems.

In this unfolding crisis, systems resilience is being tested like never before.

Systems resilience describes a system's ability to operate during a major disruption or crisis, with minimal impact on critical business and operational processes.

This means preventing outages, mitigating their impact, or recovering from them. Our definition of systems includes applications, architecture, data, cloud, infrastructure and network.



The immediate challenge: Operating in a new reality

Companies are operating under a new reality that puts great strain on their systems. But most companies, based on our research, are already starting with a significant gap in systems resilience. The leaders today and those who act quickly to address the immediate challenge will successfully navigate the crisis and emerge stronger.



BUSINESS CONTINUITY RISKS

Supply chain disruptions, shifts in customer touchpoints, unavailability of critical resources and gaps in business continuity protocols.



SURGES OR DROPS IN DEMAND

Sudden increases (for example, because of a shift from physical to digital purchasing) or precipitous declines in volumes.



SECURITY RISKS

Countering bad actors who will inevitably seek to take advantage of individuals and organizations.



MONITORING, REPORTING & DECISION-MAKING

Responding to immediate business needs in a dynamic environment to enable rapid decision-making with real-time data.



WORKFORCE PRODUCTIVITY

Challenges with employees working remotely associated with connectivity and security.

However, only a small minority of companies—the top 10 percent—have cracked the code on systems resilience, according to Accenture’s Future Systems research survey of 8,300 companies conducted before the COVID-19 crisis.

For the rest, it is crucial to understand and address systems vulnerabilities. The current crisis only accentuates the need to take swift and informed action.

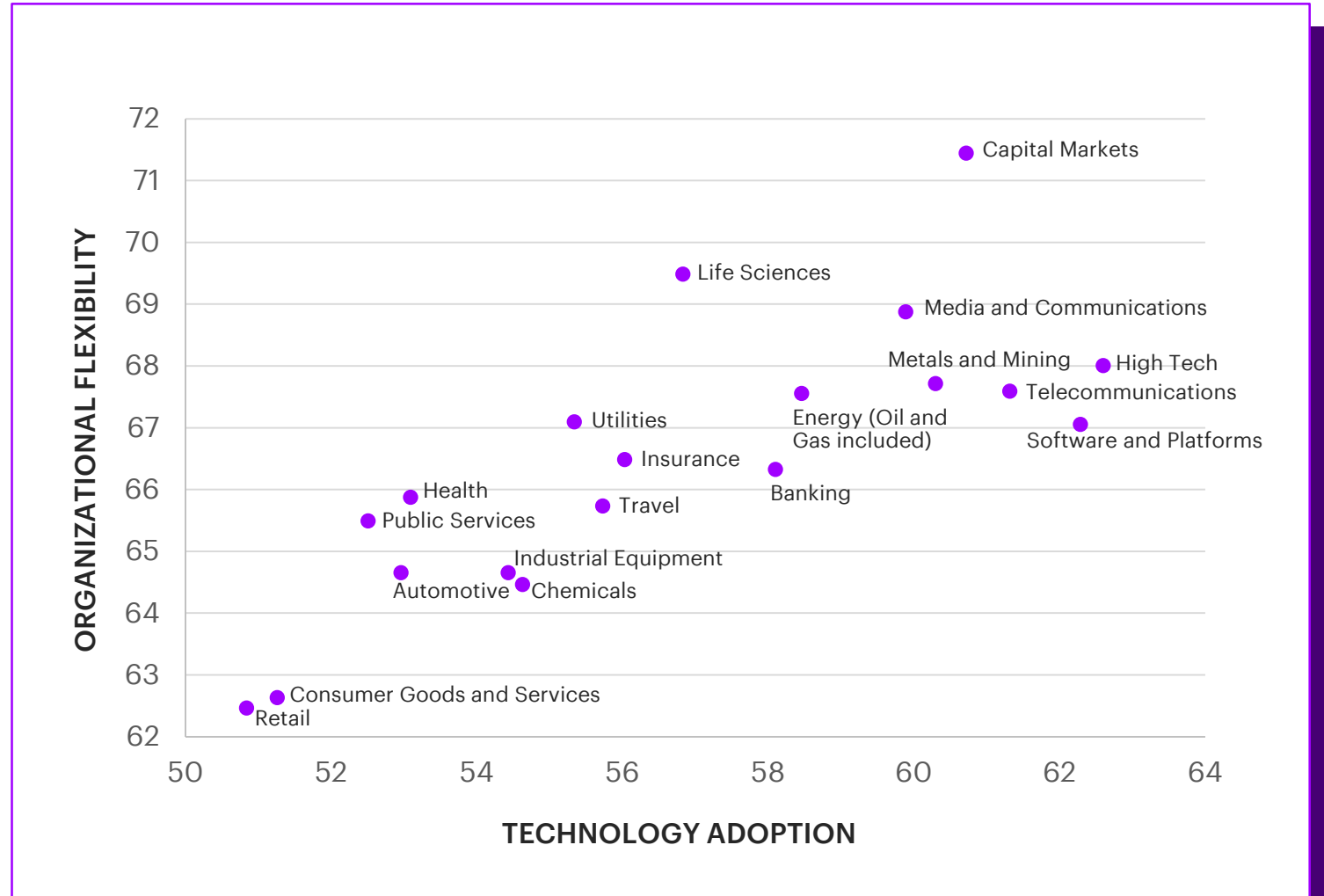
10%

Only the top 10% of 8,300 companies surveyed have cracked the code on systems resilience.

[*Accenture’s Future Systems Research*](#)

Our Future Systems research shows significant variation in systems resilience across industries.

We scored resilience based on two categories: technology adoption and organizational flexibility. Adoption of technologies such as cloud, DevSecOps, microservices, and containers, to name a few, makes enterprise systems fast and flexible, while organizational flexibility captures actions that companies take to establish the right culture and governance.¹

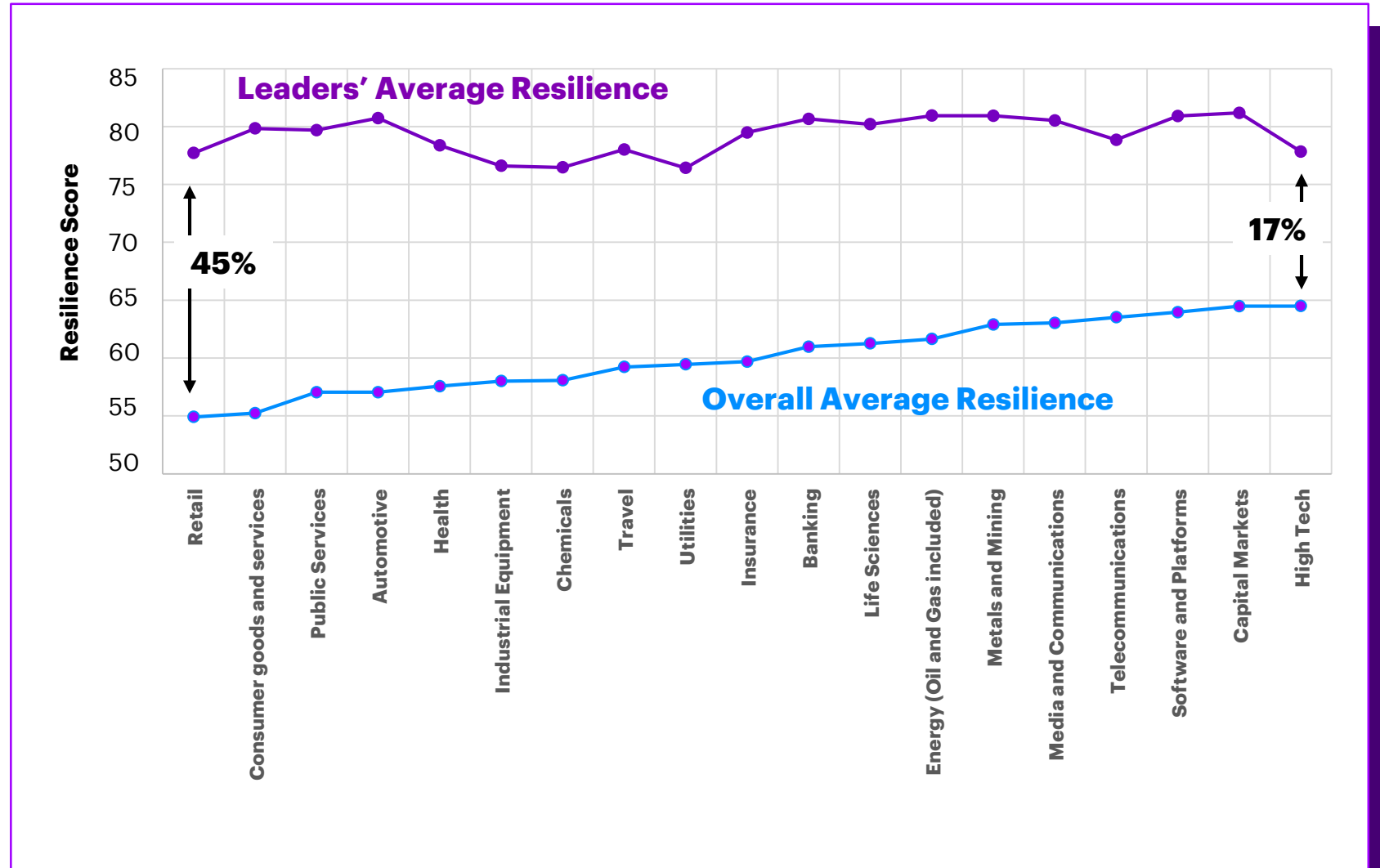


[Accenture's Future Systems Research](#)

Our research also shows a massive difference in resilience between Leaders and their average peers within an industry.

The chart shows that Leaders (companies with scores in the top 10 percent) exhibit high resilience, regardless of industry.

For example, in the retail industry, the Leaders' resilience score is 45 percent more than that of an average company in that industry.



Accenture's Future Systems Research

Actions to take now and next

Mobilize: In 72 hours

- Establish a lean governance structure for dynamic decision-making.
- Create an empowered resilience response team to address immediate issues.
- Proactively identify vulnerabilities and quick wins using toolkits such as the **Accenture Systems Resilience Diagnostic**.

Now: 2 weeks and beyond

Establish small scrum teams with the autonomy to execute point solutions using the **six building blocks of systems resilience**:

- Elastic Digital Workplace
- Hyper Automation
- Architecture & Performance Engineering
- Cloud Acceleration & Optimization
- Service Continuity
- Cybersecurity

Capture remediation actions in the form of 30, 60, 90 day plans.

Next: An eye to the future

Establish a structured intake process and platform to capture areas that need ongoing attention.

Scale to the new normal by defining long-term transformation strategies that drive towards a more resilient IT landscape.

Focus on small, incremental programs to self-fund transformation.

Optimize ecosystem partnerships to shift to an asset-light model and mitigate vulnerabilities.

Mobilize

CIOs and IT leaders play a central role in ensuring their organizations can continue to operate through disruption, by taking the following steps in the first 72-hours:

- Establish a lean governance structure with representation from business and technology for dynamic prioritization and decision making.
- Create an empowered resilience response team that immediately mobilizes resources to focus on business continuity in critical areas.
- Proactively identify vulnerabilities and quick wins to address current challenges using toolkits such as the Accenture Systems Resilience Diagnostic.



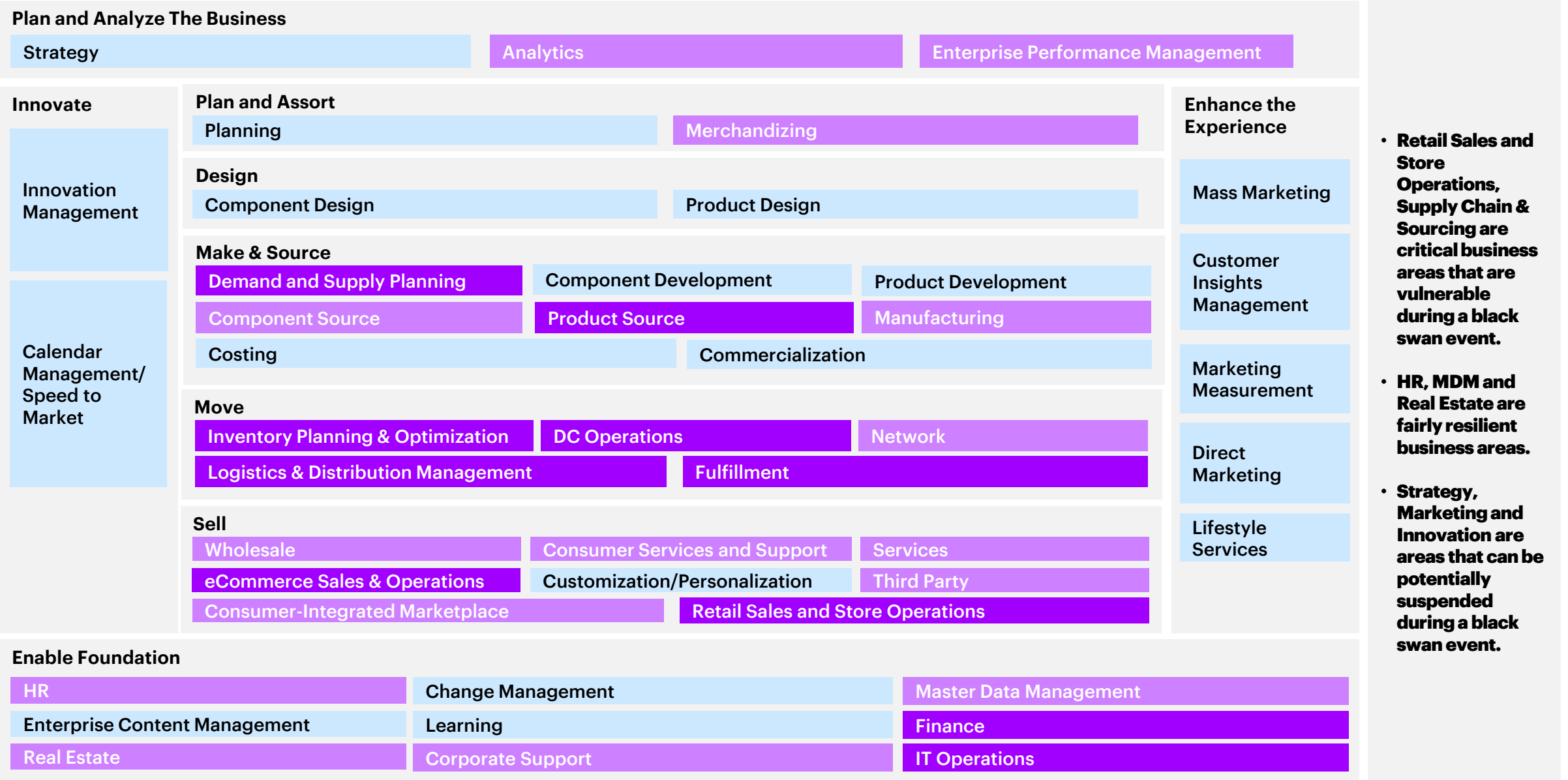
Accenture Systems Resilience Diagnostic

Within 72 hours, the Accenture Systems Resilience Diagnostic toolkit can help prioritize a company's critical business processes and systems and identify potential vulnerabilities.

The diagnostic brings together best-in-class industry reference models with Accenture's vast, cross-industry Future Systems research. We use these two inputs to create heatmaps that provide a starting point for applying the building blocks of systems resilience.

Illustrative heatmap for Retail

This illustrative heatmap provides a starting point to assess systems resilience of critical processes for companies in the Retail industry.



Actions to take now: **Six building blocks of systems resilience**



Six building blocks of systems resilience

We have defined six key resilience building blocks that will enable a quick and reliable response to critical system vulnerabilities.

01

ELASTIC DIGITAL WORKPLACE

Protect your people and your productivity, when you need to become fully remote overnight.

02

HYPER AUTOMATION

Mitigate the impact of systems disruption, free up human resource capacity and streamline IT workforce management.

03

ARCHITECTURE & PERFORMANCE ENGINEERING

Quickly resolve critical systems availability and performance issues.

04

CLOUD ACCELERATION & OPTIMIZATION

Manage risk, deploy instant innovation and optimize cloud performance and cost.

05

SERVICE CONTINUITY

Flex to support critical in-flight services or deliver new IT projects.

06

CYBERSECURITY

Secure your customers, people and systems wherever they are.

01

Elastic Digital Workplace

Protect your people and your productivity: Elastic Digital Workplaces unlock a wealth of opportunities for business leaders to improve resilience, including avoiding business disruption and potential revenue loss. Many organizations are enabling their workforce to work remotely from home, often overnight. To be successful, this requires a new work culture, technologies, communications and policies to be implemented at extraordinary speed and scale.

TAKE ACTION:

To enable a new approach to work, companies need to address a number of key areas:

- Immediately help employees adapt to remote working. For example, helping them effectively run large- and small-scale virtual meetings can significantly improve experience and productivity.
- Deploy or scale collaboration tools, such as Microsoft Teams, and provide targeted prescriptive guidance for effectively operating in a remote connected workplace.
- Organize an Elastic Digital Workplace Task Force with representation from key business leaders, as well as HR, IT and Security.
- Equip traditional desktop workers with mobile solutions and implement virtual desktop solutions from providers such as Amazon, Citrix, Microsoft and VMware with secure remote access to applications and data.

Accenture operates an Elastic Digital Workplace for our over 509,000 employees. In this uncertain market environment, we are helping other companies implement similar capabilities.

25,000

employees of a major energy company in the United Arab Emirates were converted to remote work in 10 days.

For example, working together with Microsoft, Accenture was able to convert 25,000 employees of a major energy company in the United Arab Emirates to work remotely in 10 days. Across the world, businesses and governments are racing to ensure they can continue to deliver essential services—while protecting their own employees through remote work and collaboration, with an elastic digital workplace.

See our related points of view on [Elastic Digital Workplace](#), [Human Resilience: What Your People Need Now](#) and [Responsive Customer Service in Times of Change](#).

02

Hyper Automation

Mitigate the impact of systems disruption, free up human resource capacity and streamline IT workforce management: Hyper automation accelerates a company's existing automation investments to make systems more resilient. It does so by eliminating application and infrastructure bottlenecks and freeing up human resources to focus on higher priority issues. During a pandemic, automation can also help track the location, safety and productivity of all resources as part of an overall business continuity plan.

TAKE ACTION:

To execute hyper automation at speed, companies need to take the following steps:

- Prioritize bottleneck areas. At Accenture, we leverage our Automation Opportunity Finder, which is part of the Accenture myWizard® platform, to drive rapid identification and automation of tasks. This analytics-based assessment derives critical insights using structured and unstructured data to find where human touchpoints can be reduced.
- Implement automation to immediately resolve high-volume tasks by leveraging techniques like machine learning and AI models. For example, one large retailer was struggling with a high volume of tickets and high average time to resolution impacting order fulfillment at their stores. Within weeks, Accenture used myWizard to identify 174 automation use cases that avoided 132,000 tickets, 55,000 hours of effort and reduced ticket resolution time from 4-7 days to just 15 minutes.
- Augment that which cannot be completely automated with digital co-workers. For example, Accenture implemented a virtual agent "buddy" bot at the start of the COVID-19 pandemic to stay connected with remote employees.

A large retailer resolved order fulfillment bottlenecks at their stores through automation.

The bot reaches more than 125,000 Accenture people daily to track daily work-location and provide timely reporting to make critical decisions. This action to ensure the safety, security and remote enablement of our employees would be unmanageable for humans to do alone.

- Optimize the deployment of human talent to focus on high touch activities. For example, one large healthcare organization redeployed an entire IT triage team through automation to other, more critical areas. This team would normally review incident tickets for accuracy, include necessary data, and resolve the low-complexity tickets, before routing the remainder of tickets to the next-level team.

03

Architecture & Performance Engineering

Quickly resolve critical systems availability and performance issues:

Architecture and performance engineering can help improve systems resilience by rapidly scaling applications and resolving performance constraints. When critical systems are under stress, it is important to identify root causes of degradation and execute a “get well” plan to remediate as fast as possible without causing new issues.

TAKE ACTION:

To identify architecture and performance engineering solutions that can be executed within hours, days or weeks, companies should take the following steps:

- Set up a triage room to analyze the actual user experience and technical landscape and establish an end-to-end, traceable view of troubled business transactions. This important step enables quick consensus about which business processes and underlying systems are critical, including constantly changing priorities in the current context, and address those in the right order.
- Identify and implement quick wins such as optimizing application memory, architecture-caching and data-indexing and enabling automatic infrastructure restarts and load balancing. For example, a large chemicals company was able to resolve a SAP processing failure within hours by using a simple load-balancing technique to fix an imbalance in traffic. In another example, a large US state government used rolling server restarts during a peak registration period to prevent application failures, while a development team fixed a memory leak within days.
- Quickly introduce and scale application capabilities leveraging configuration or commercial changes. Creative commercial

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arrangements with existing ecosystem partners can help solve acute challenges in times of crisis. For example, Microsoft worked with the UK’s National Health Service to extend free access to Microsoft Teams, allowing staff who are self-isolating to work remotely and more effectively and share advice with patients wherever they are.² For a major airline, ServiceNow and Accenture brought their capabilities together to establish a COVID-19 employee response center—from gathering requirements to launch and user training in 24 hours.

- Apply rapid architecture remediation techniques such as streaming data to offload demand on critical systems. A European bank was able to offload transactions from their near-capacity mainframe core banking system in just over four weeks by instead using microservices to handle the data load, preventing disruption to the customer experience.

04

Cloud Acceleration & Optimization

Manage risk, deploy instant innovation and optimize cloud performance and cost: Cloud can make companies resilient in the short term by navigating through extreme surges or drops in demand. For example, retailers like Carrefour have been confronted with 300 percent increases in the usual demand for digital commerce.³ Cloud also enables deployment of instant innovation and alignment of technology costs to rapid fluctuations in demand.

TAKE ACTION:

- Reconfigure traffic to maximize capacity for critical applications when surges in volume and compute capacity disrupt the ability to serve customers and suppliers. Even moving low-priority applications to the cloud can free-up valuable systems and human resources. For example, one large retailer, working with Accenture, was able to handle a massive surge of Black Friday sales by building a cloud-based coupon application in two days that offloaded traffic from the failing core eCommerce site, providing a better consumer experience. Strategic planning tools like the Accenture myNav platform can help companies get started by looking at existing cloud consumption patterns and optimize utilization. In addition, companies can leverage automation to eliminate manual activities for less-critical computer, storage and network configurations.
- Leverage the power of cloud to deploy instant innovation through new cloud-native solutions, for example by launching chatbots or diverting calls to digital channels. Modern engineering in a cloud sandbox offers the capabilities needed to develop minimum viable products in just two to three days. One hospital in Spain, with support from Avanade, was able to deploy a new virtual assistant to manage the massive increase in incoming calls during the COVID-19 crisis. The Singapore government was able to quickly launch a mobile app called TraceTogether to support contact tracing efforts in the nation-state aimed at reducing the spread of COVID-19—an initiative that would not have been possible without the cloud.⁴

\$2.2mil

In monthly cloud spend discovered through the Accenture Cloud Platform leads to greater cost optimization.

- Take advantage of cloud's pay-by-the-drink model to align technology costs to drops in demand. Companies can proactively lower operating expenses by selling excess capacity on the secondary market. One large energy company used the Accenture Cloud Platform to provide an integrated view of their cloud usage across multiple corporate entities and providers—both AWS and Microsoft Azure. They quickly discovered over 91,000 cloud objects including 9,000 virtual machines and close to \$2.2 million in cloud spend per month. Now, with the immediate visibility of their environment, they can start optimizing costs across their cloud estate.

Service Continuity

Flex to support critical in-flight services or deliver new IT projects:

Skilled resources with institutional knowledge of business processes and specific technology expertise are critical for business resilience. In times of crisis, companies need service continuity to execute critical in-flight projects or maintain key applications and infrastructure. When COVID-19 mobility restrictions were put in place, one Fortune 100 bank faced a 60 percent IT resource gap—putting systems supporting their digital business at significant risk.

TAKE ACTION:

Companies need to quickly source and onboard expertise to provide service continuity in specific areas. This will also necessitate rapid enablement with knowledge transfer, service readiness, governance and tools.

- Find the right skilled resources and initiate knowledge acquisition. This requires empowered sourcing teams and technology-enabled knowledge transition. When a leading retailer asked Accenture to add approximately 300 remote resources on short notice to support their digital channel, we used our touchless knowledge capture platform to virtually onboard team members. This platform uses analytics to prioritize and source people for critical tasks and makes them productive through learning videos and sandbox environments.
- Enable accelerated service readiness by streamlining environment, security, data protection and tooling requirements for onboarded resources, as a leading US hospital did when they needed to quickly develop a video consultation application to manage COVID-19 patient load. In contrast, a large bank's complex, 15-step security policy and individual non-disclosure agreement for new development resources limited their ability to move fast.

When a leading retailer asked Accenture to add approximately 300 remote resources on short notice to support their digital channel, we used our touchless knowledge capture platform to virtually onboard team members quickly.

- Support service continuity through fit-for-purpose modern engineering practices and lean governance. Modern engineering includes automation, DevOps and agile while lean governance addresses stand-up meetings, peer reviews and project status reporting. One North American insurer leveraged automation for critical releases, testing and operations to ensure that the productivity of newly onboarded resources was unhindered.

Secure your customers, people and systems wherever they are: In a global crisis, resilient systems must be ready to counter the bad actors who will inevitably seek to take advantage. In early March, the European Central Bank published a warning to financial services organizations about a spike in financial cyberfraud related to the Coronavirus. Meanwhile, hackers posing as the World Health Organization and the US Centers for Disease Control are already using Coronavirus in phishing attacks.⁵ While moving quickly to enable the remote workforce, it is very important to address the right security protocols and solutions to mitigate risk.

TAKE ACTION:

In addition to imposing travel restrictions, controlling access to locations and establishing crisis management capabilities, there are a number of critical security actions organizations will take when facing an immediate “forced remote work” scenario. Key steps include:

- Rapidly deploy a Zero Trust model across your environment—from multicloud, individually owned devices (BYOD), and third-party technologies to enable secure application access without relying on traditional VPN solutions.
- Identify security abnormalities and events through increased vigilance in both automated and manual network and security monitoring. While vigilance from external threats is important, it is also critical to monitor outbound network activity that could identify infected devices—potentially communicating or exfiltrating data that may not be detected by endpoint controls.
- Institute daily situational threat intelligence briefings virtually to include security leaders, technical leaders, senior business executives, and current business continuity and disaster recovery war rooms.
- Remind employees and third parties to remain vigilant as spear-phishing, business email compromise and other cyberthreat tactics increase.
- Build analytics and automation for endpoint, VPN, threat intelligence, vulnerability management, data

loss prevention and other technologies and monitoring solutions to accommodate the expanded use of a multitude of devices in potentially less secure locations. A large mining company implemented secure, scalable access across their network to shift to a remote workforce in just three days. Using Accenture’s SERA solution (Secure Emergency Remote Access), they applied automation for setup, configuration and monitoring, rapidly establishing a robust security architecture.

Deploying many of these tactics, a large European financial institution secured remote smart working capabilities by establishing a war room dedicated to emergency management, provided secure devices and access procedures that guarantee sufficient monitoring for their remote employees, and defined references for external suppliers to operate remotely.

A man with short brown hair and glasses, wearing a white button-down shirt, is leaning against a white pillar. He is looking at a black smartphone in his hands. The background is a bright, modern office with large windows, a desk with a laptop, and a lamp.

Actions to take next

Actions to take next: **An eye on the future**

Even before COVID-19, many organizations faced considerable challenges to their resilience. Once we reach the other side of this pandemic, it will be important to establish long-term strategies for greater resilience. Apply lessons learned from the experience to create a systems and talent roadmap that better prepares your company for future disruptions.

Define long-term transformation strategies that prioritize and address antiquated applications, architectures and infrastructure, highly manual processes and underfunded cyber resilience.

Self-fund your transformation through small incremental programs that drive efficiency and free up capital.

Leverage ecosystem partners to shift to an asset-light model and mitigate vulnerable dependencies, choosing partners resilient to global risks.

How Accenture helps



In uncertain times, Accenture can help bring stability, reliability and resilience to your systems and your company, fast.

Accenture is uniquely positioned to help you respond to immediate challenges, as well as define and execute medium- and long-term actions. We combine our Accenture Systems Resilience Diagnostic toolkit with unmatched execution capability, industry expertise and our privileged ecosystem relationships to build systems resilience.

While each company's systems are different and resilience improvements will vary depending upon a number of factors, the combination of the actions outlined in this paper can position your company to face complex challenges today and in the future.



With 509,000 employees working in 120 countries, we have the global scale and geographic distribution to respond with agility to business needs.

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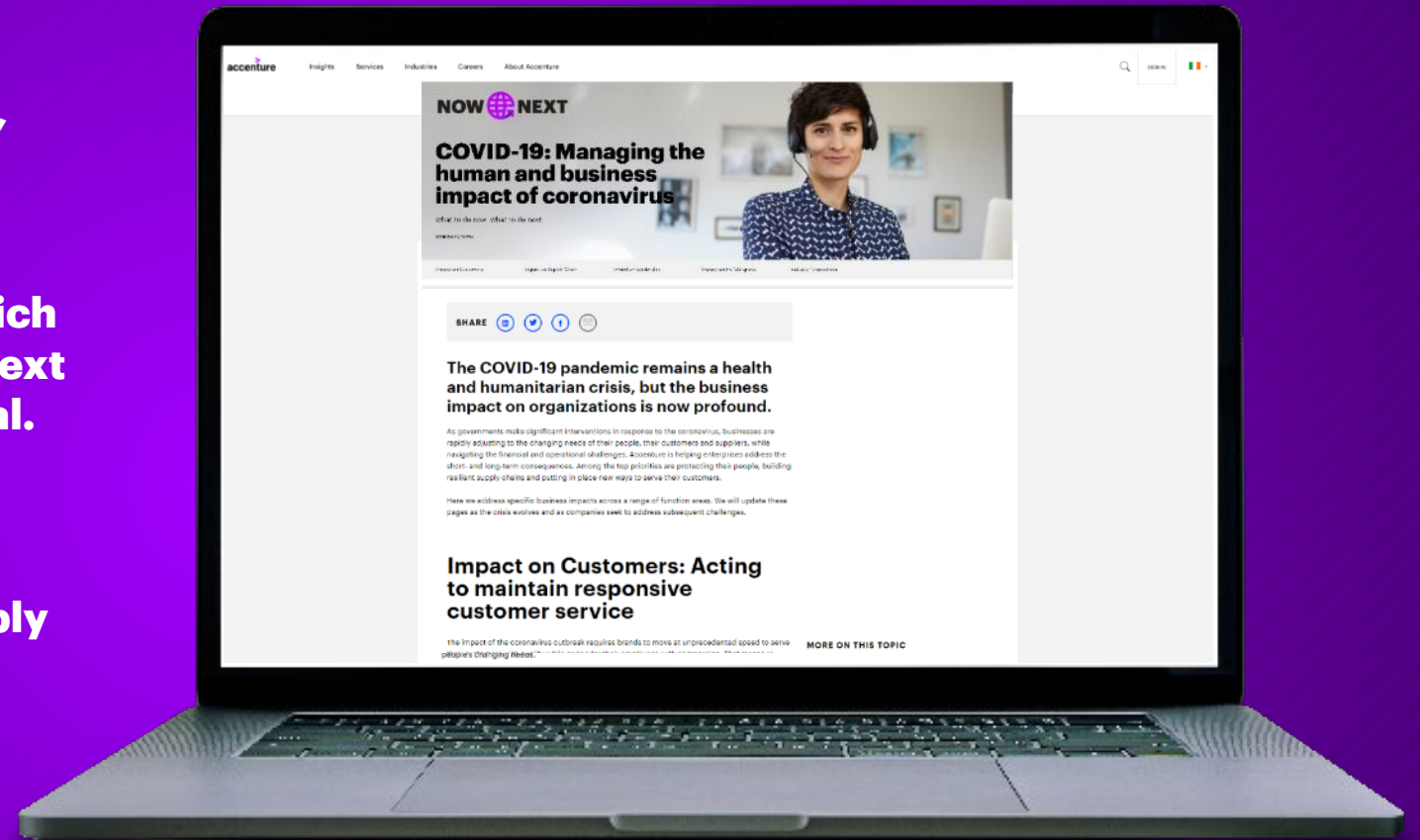
Contact us to learn more at: systemsresilience@accenture.com.

To help you navigate both the human and business impact of COVID-19, we've created a hub of all of our latest thinking on a variety of topics.

Each topic highlights specific actions which can be taken now, and what to consider next as companies move towards a new normal.

From leadership essentials to ensuring productivity for your employees and customer service groups to building supply chain resilience and much more, our hub will be constantly updated. Check back regularly for more insights.

[VISIT OUR HUB HERE](#)



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