

MANUFACTURING: HOW CLOUD-BASED ARCHITECTURE DRIVES AGILITY AND SUPPORTS INNOVATION THROUGH DISRUPTION

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EXECUTIVE SUMMARY

SECTION 1

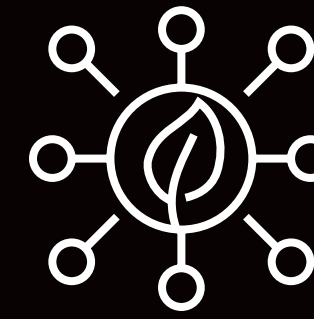
Accelerated disruption and the “adaptable” future



- Even though manufacturers are dealing with accelerated disruption, most recently with the COVID-19 pandemic, they haven’t lost their focus on innovation. There is certainly no inertia in decision making.
- At the same time, manufacturers know they cannot stick to the old ways of working — they need to change for a new future.
- Business transformation is key to success for recovery to the next normal.

SECTION 2

Collaboration and ecosystems



- Transformation is centered around a shift of focus from the enterprise to the ecosystem, and closer integration with customers, suppliers, and partners.
- The good news is that many ecosystem scenarios are available today — they have evolved from being pure collaboration tools only.
- To establish successful business models going forward, it’s imperative to support processes with disruptive technology that enables agility, efficiency, and innovation. Real-time data is essential in this mission, not only in the enterprise but across the entire ecosystem.

SECTION 3

The relationship between IT investments and business impact, and the role of (multi) cloud



- Manufacturers increasingly realize that investments in DX have a direct and positive impact on profit and revenue; realizing this, manufacturers are willing to close their gaps.
- IT therefore becomes an important business enabler, but it needs to become fit for purpose.
- Investments in new cloud architectures are key to driving unprecedented business value, especially resiliency and innovation.
- Managing multiclouds will become part of the next normal, but manufacturers will need help with that to leverage benefits across all operations.

OVERCOMING THE INERTIA — INFLAMED BY THE CRISIS, COMPANIES ARE IN COMPETITIVE OVERDRIVE

Supply shock



LIMITED PRODUCTION

Factory shutdowns or restricted access to the workplace to prevent the spread of the virus

BROKEN JUST-IN-TIME VALUE CHAINS

Restrictions on modes of transport, including road, rail, and air

Manufacturers are facing **accelerated disruption**, fueled by global events and challenges such as trade wars, environmental changes, epidemics, and regulatory pressures. Despite the impact that COVID-19 has had on the industry, it has not stalled manufacturers’ efforts to achieve competitiveness and innovate.

Demand shock



DEMAND DECREASE

B2B and B2C sales have plummeted worldwide due to insecurity and buyers’ financial difficulties

Workforce shock

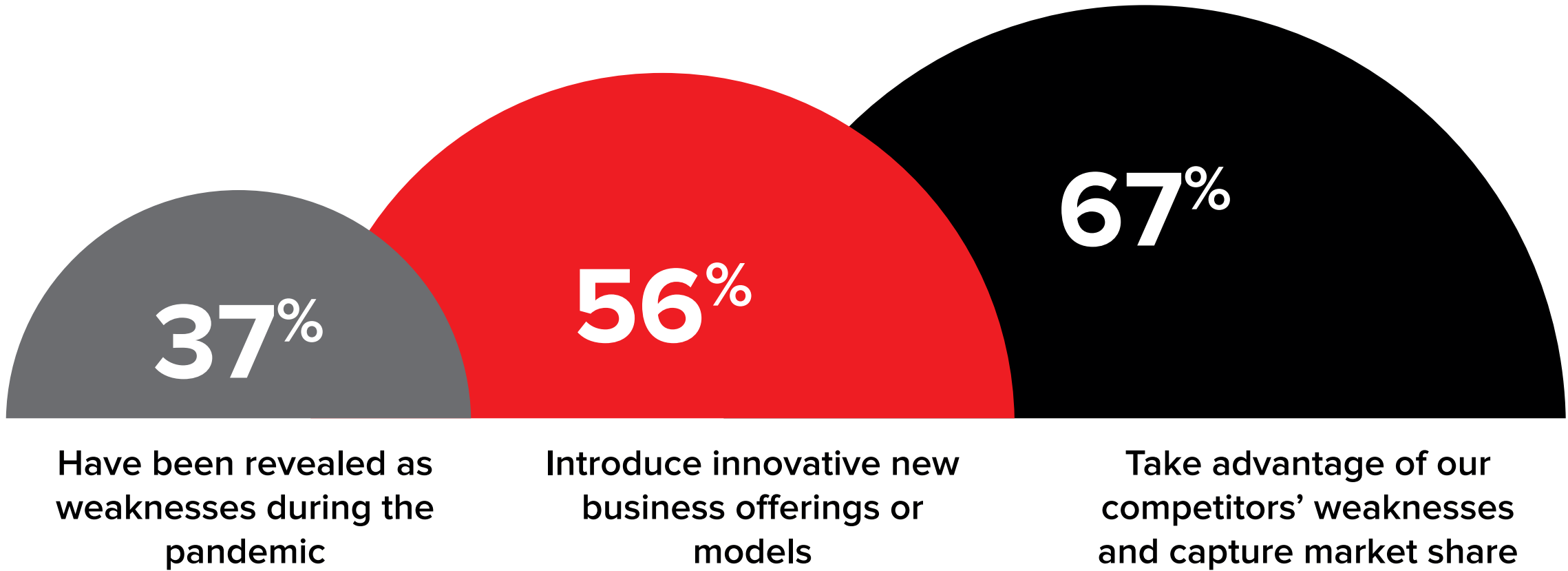


LIMITED PHYSICAL ATTENDANCE

Due to social distancing, the number of operators on the shop floor has decreased

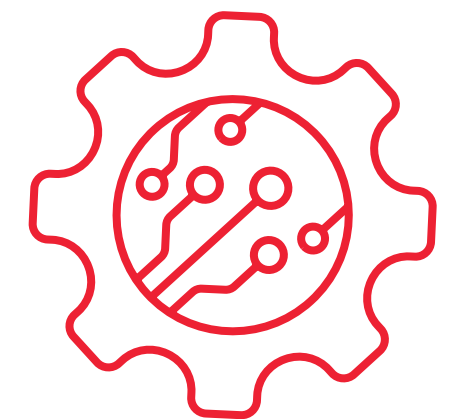
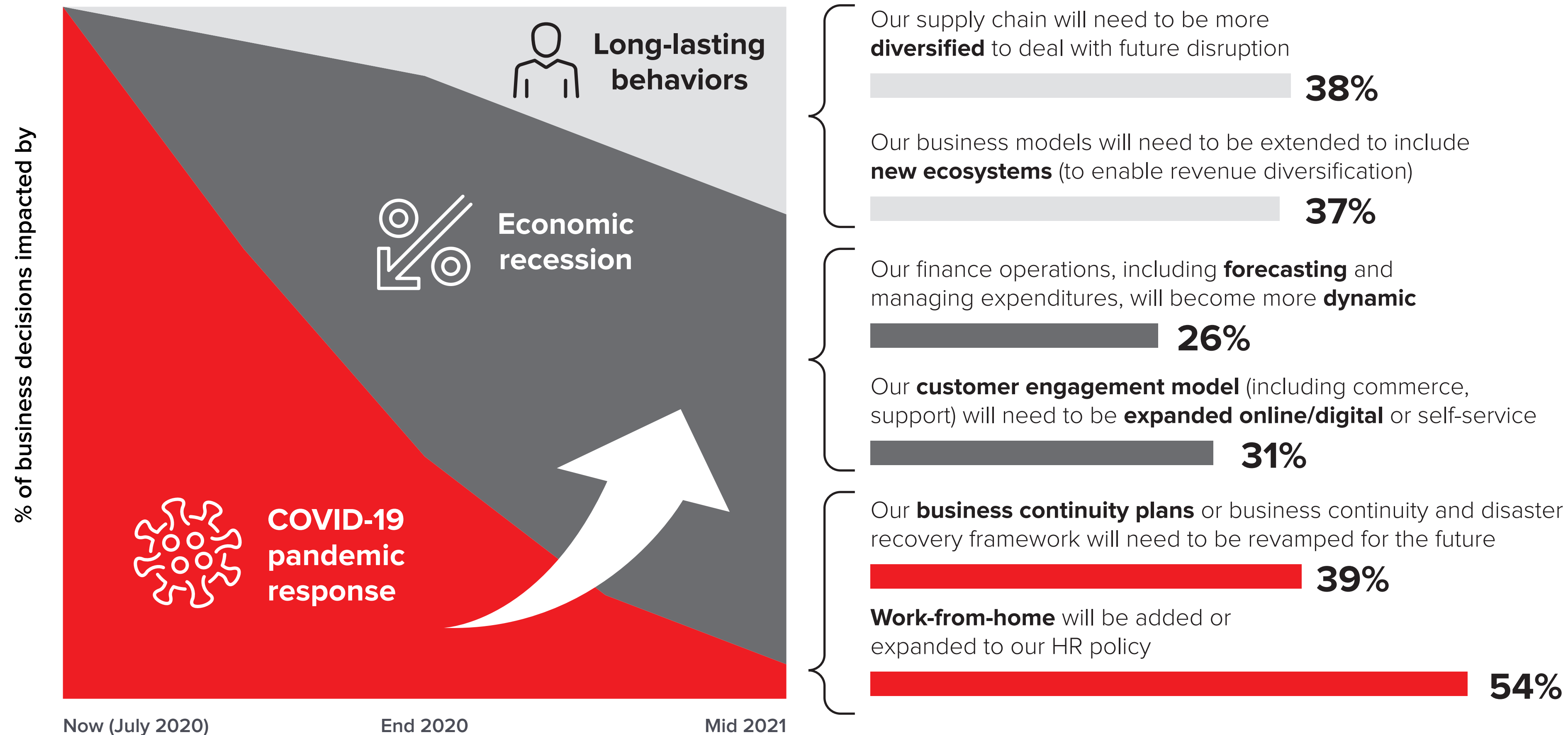


Which of the following targets are driving your organization’s 2020 technology road map? (We are investing in new projects and related technology investments that ...)



TOWARD THE NEXT NORMAL — NOTHING WILL BE (QUITE) THE SAME AGAIN

Which of these areas are likely to be permanently changed as a result of the COVID-19 pandemic?



Our **operating models** will need to be **digitally enabled** to account for **more automation** and contactless solutions

39%

SUSTAINABILITY IS KEY TO ADAPTING TO THE NEXT NORMAL

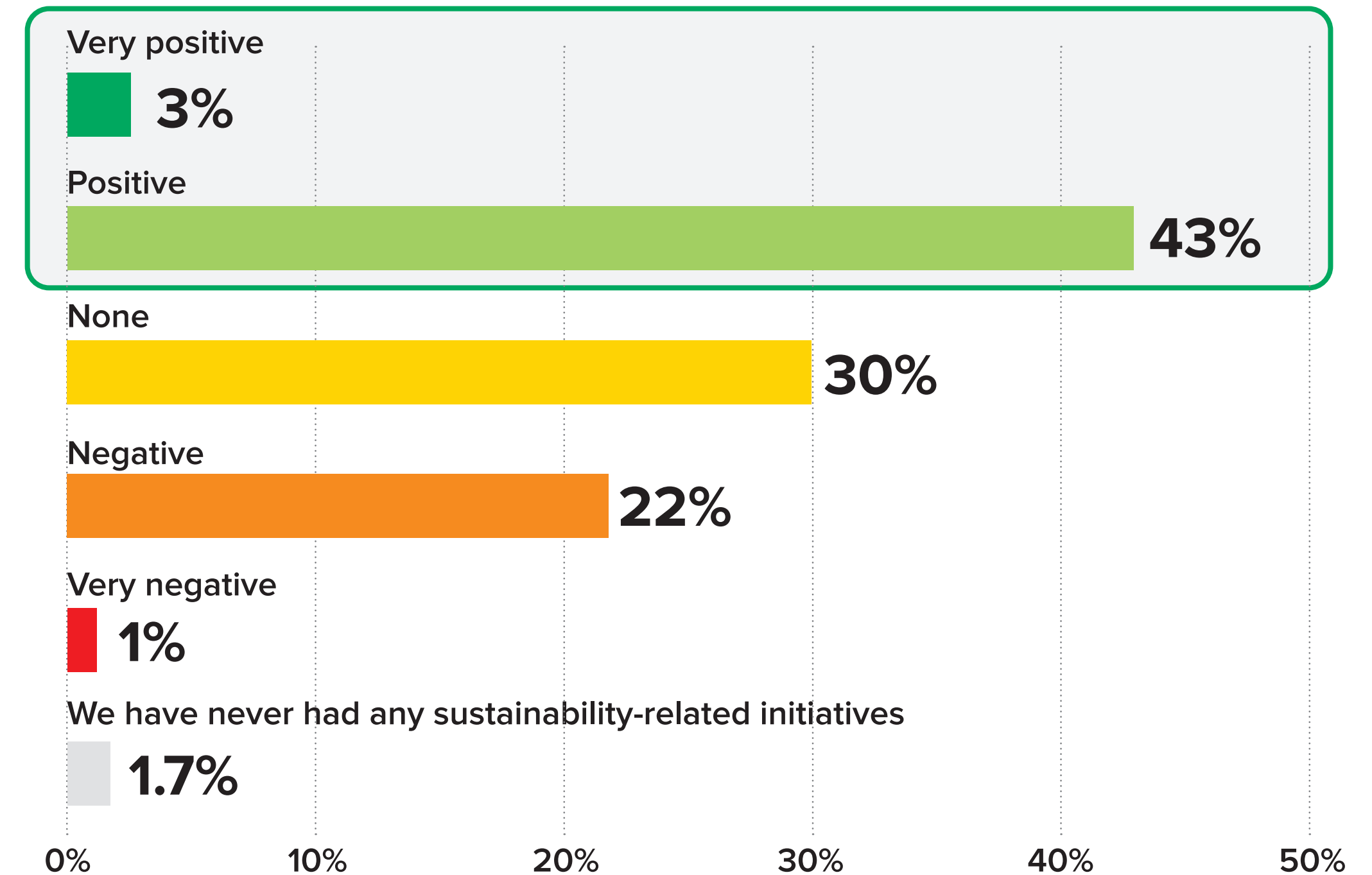
Given **ever-changing regulatory** and **consumer pressures**, manufacturers can no longer ignore their impact on the environment or treat it as an afterthought.

Companies that treat sustainability as an **opportunity** — and not a burden — can leverage it to create **new** and **innovative products** and processes, and therefore achieve **competitive differentiation**.

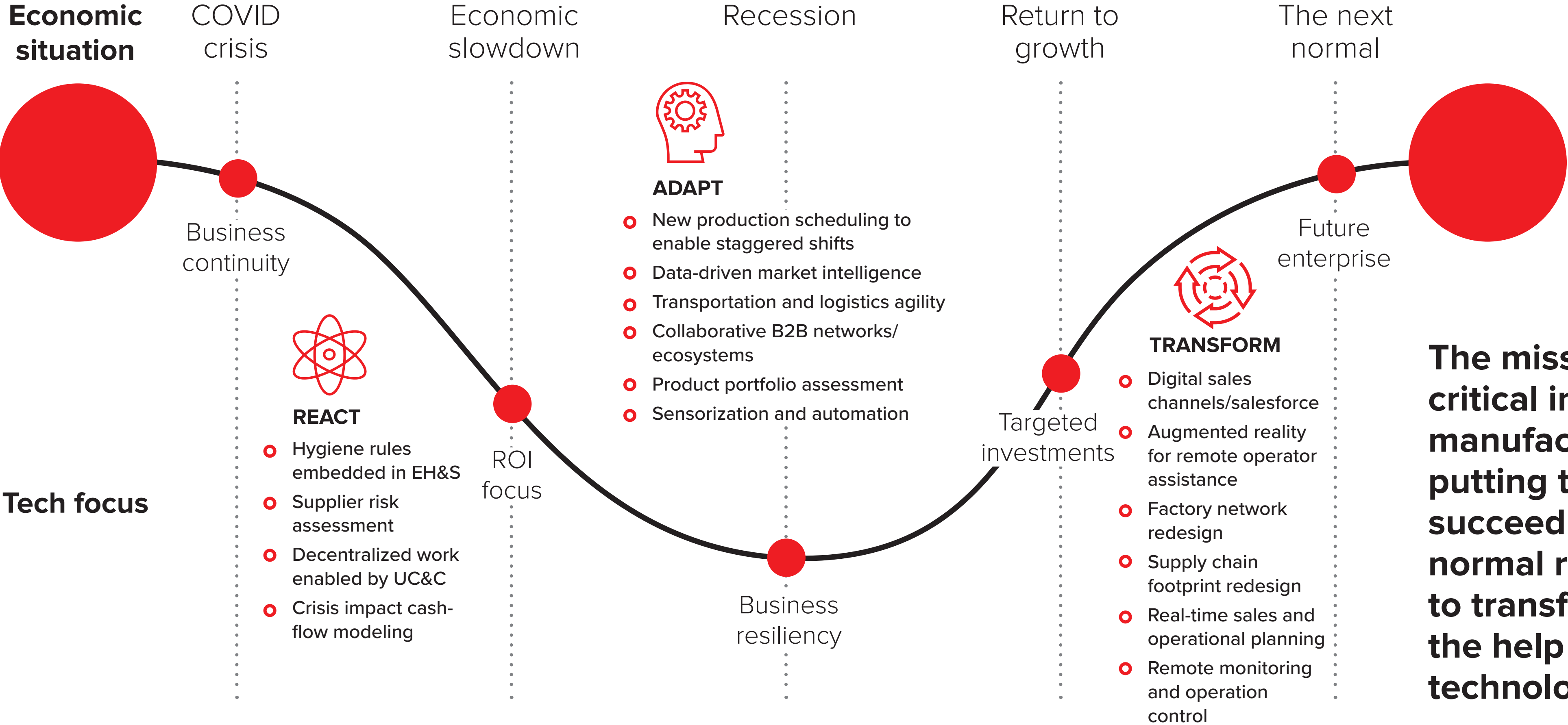
Spurred by **COVID-19**, **46%** of European manufacturers have woken up to the importance of **sustainability**, while **30%** still see it as mandatory.



What impact will COVID-19 have on your sustainable development goals (including climate change, diversity and inclusion, and responsible production) and related activities?



BUSINESS TRANSFORMATION IS KEY IN THE JOURNEY TO THE NEXT NORMAL



The mission-critical initiatives manufacturers are putting together to succeed in the next normal require them to transform with the help of digital technologies.

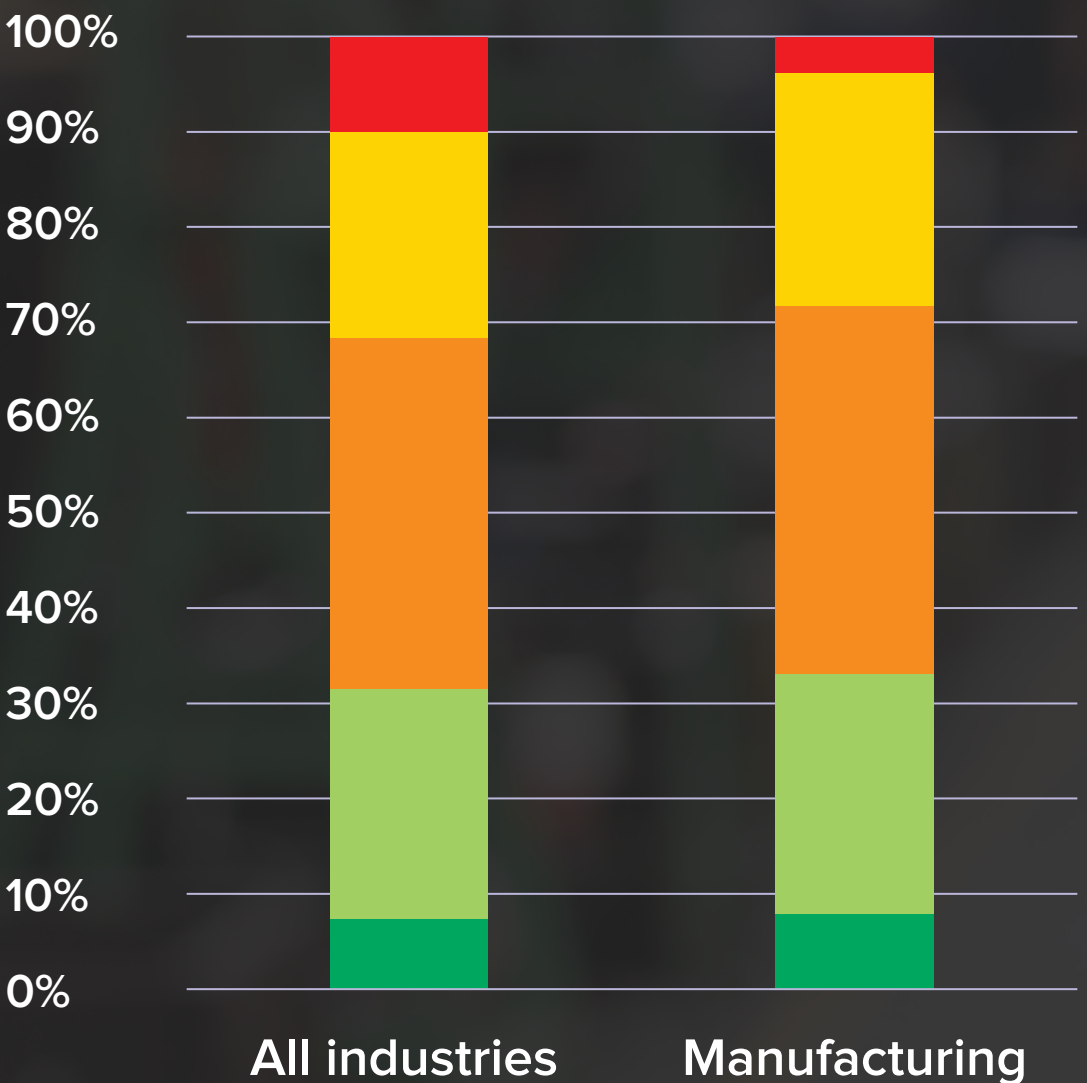
TRANSFORMATION CENTERED AROUND A SHIFT IN FOCUS FROM THE ENTERPRISE TO THE ECOSYSTEM

By 2022, driven by rising customer expectations and competition from the platform economy, **25%** of manufacturers will be engaged in cross-industry collaboration, resulting in a 10% revenue increase.

IDC FutureScape, 2018



What is your priority when evaluating new ecosystem partners?



- Not a priority at all
- Low priority
- Medium priority
- High priority
- Top priority

Driven by business, economic, technological, and competitive reasons manufacturers are looking for innovative business models to ensure sustainable growth and profitability.

Drivers of ecosystem collaboration:

- Increasing B2B process efficiency
- Need to scale innovations fast
- Data capitalization and monetization
- Enabling new business models

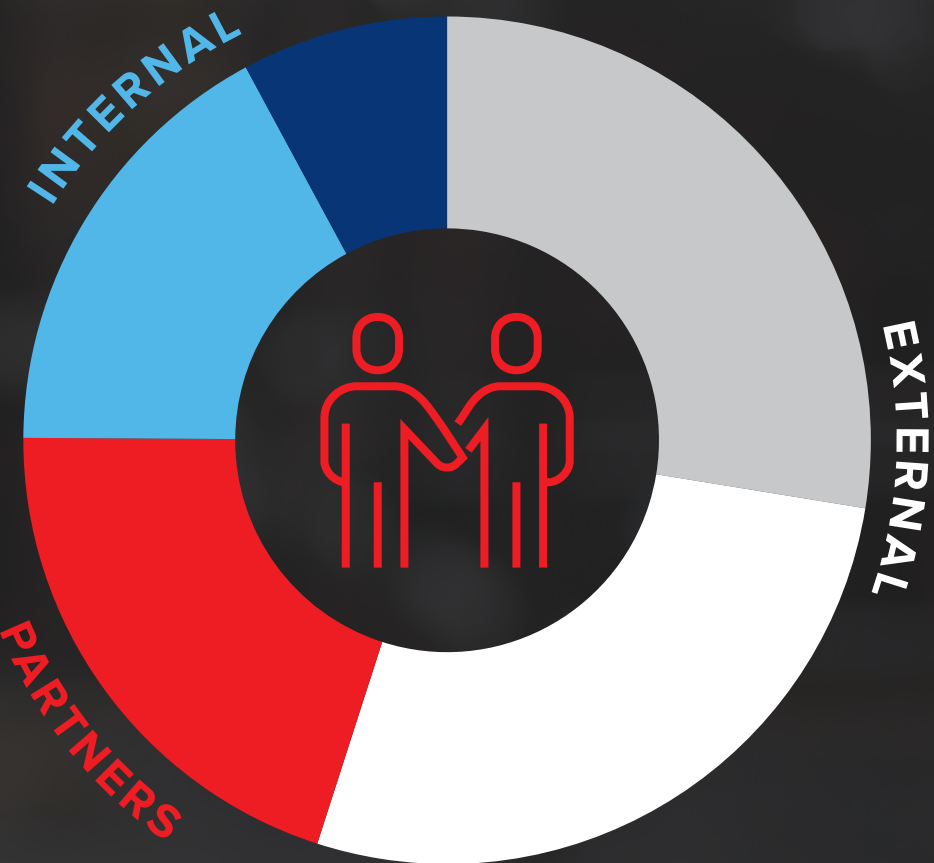
IDC EMEA, COVID-19 Impact Survey Europe, Wave 3: May 20–27, 2020, manufacturing n = 111

Manufacturers are increasingly looking **outside** of their own industry and seeking **value-added initiatives** centered around **ecosystem collaboration**. This requires not only **physical changes** but also a **change in mindset** by bringing people within the organization and from different parts of the ecosystem together for one mission.



From a business collaboration perspective, where is the biggest opportunity for your business?

- Upstream with suppliers (i.e., buy-side B2B collaboration)
- Downstream with customers (i.e., sell-side B2B collaboration)
- With external partners (e.g., logistics providers)
- Within our business (i.e., between supply chain and marketing, or sales)
- Within the supply chain (i.e., between planning and execution)



Source: IDC Supply Chain Survey, April 2020, European manufacturing n = 256

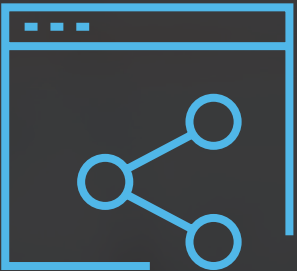
WHEN IT COMES TO MANUFACTURING ECOSYSTEMS, MANY MODELS ARE FEASIBLE

Definition

A shared application model is where organizations create industry-specific applications by sharing software or infrastructure platforms to improve processes or products/ services related to the manufacturing ecosystem.

Key characteristics:

- Custom-built applications for a specific purpose
- Can be hosted by a third-party non-manufacturing enterprise
- Dominated by IoT platforms, blockchain, and industry collaborative clouds
- Innovation-focused ecosystem



**Shared
application
ecosystem
model**

High



**Collaboration
ecosystem
model**

Definition

A collaboration ecosystem model is a joint initiative developed to co-create manufacturing technology, products, or services by more than one enterprise for commercial synergy through innovation or new offerings.

Key characteristics:

- The key objective is gaining rapid scale
- The parent enterprise acts like a holding company
- Collaboration throughout value chain: product design, development, production, and after-sales

Low

High

Business growth potential

Definition

An information exchange model is where participants share and exchange relevant information through a technology platform to improve efficiency for manufacturing-related business processes.

Key characteristics:

- The main aim is to facilitate information sharing between agreed parties
- Only information is shared, and little or no material or services are exchanged
- The model itself is not necessarily exploited directly for commercial gain



**Information
exchange
ecosystem
model**

Low



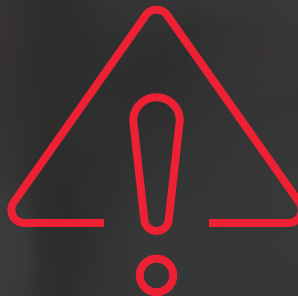
**Marketplace
ecosystem
model**

Definition

A marketplace ecosystem is a web-based and/or mobile-enabled model that brings together demand- and supply-side players to discover and promote specific manufacturing products or services.

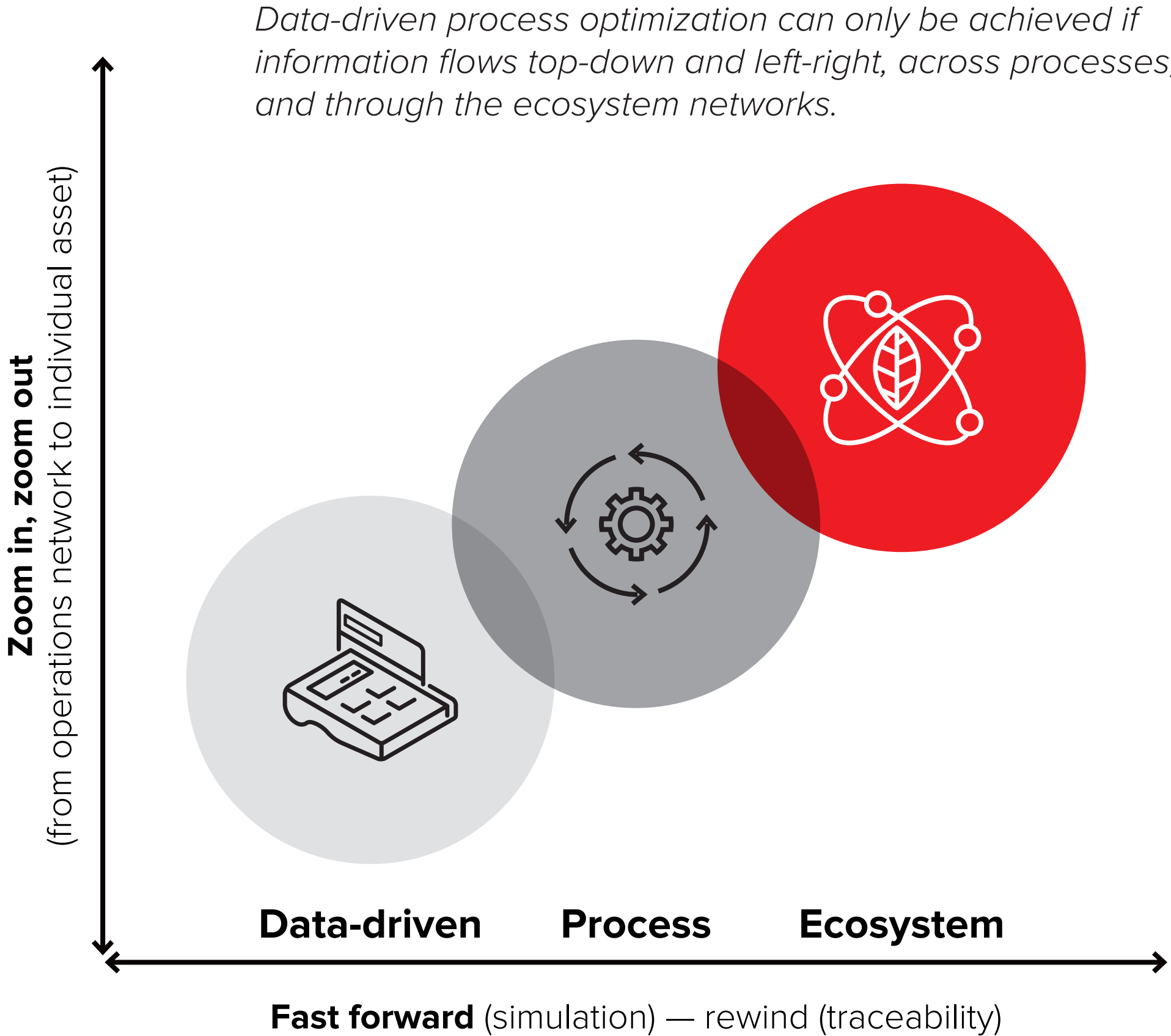
Key characteristics:

- Extension of directories and search engines, ecommerce, direct-to-consumer initiatives
- Also known as a model of commerce, with the main purpose being commercial transactions
- Model participants enjoy a network effect through referrals and ratings
- Varied model: free, time-based subscriptions, percentage for awarded RFQ/job, etc.



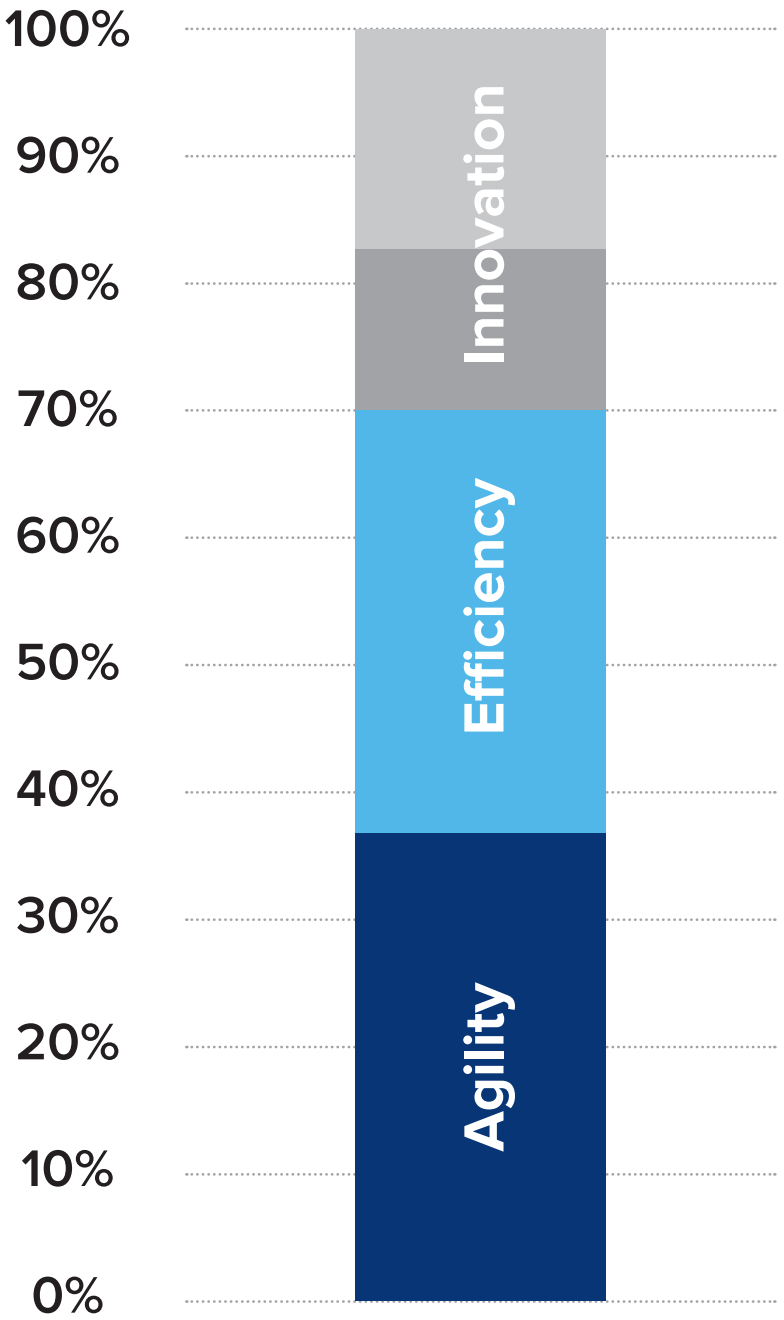
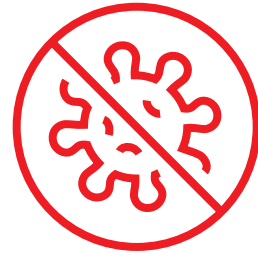
To pursue collaboration strategies in ecosystems, there is often no suitable infrastructure and little experience. Moreover, for many manufacturers, digitalizing their businesses could be a very long journey as they lack the right IT and logistics infrastructure, experienced workforce, and digital and business skills.

REAL-TIME DATA BECOMING MORE IMPORTANT IN MANAGING OPERATIONS WITH AGILITY AND EFFICIENCY, WHILE ALSO DELIVERING INNOVATION



How should your C-suite change to best tackle this crisis?

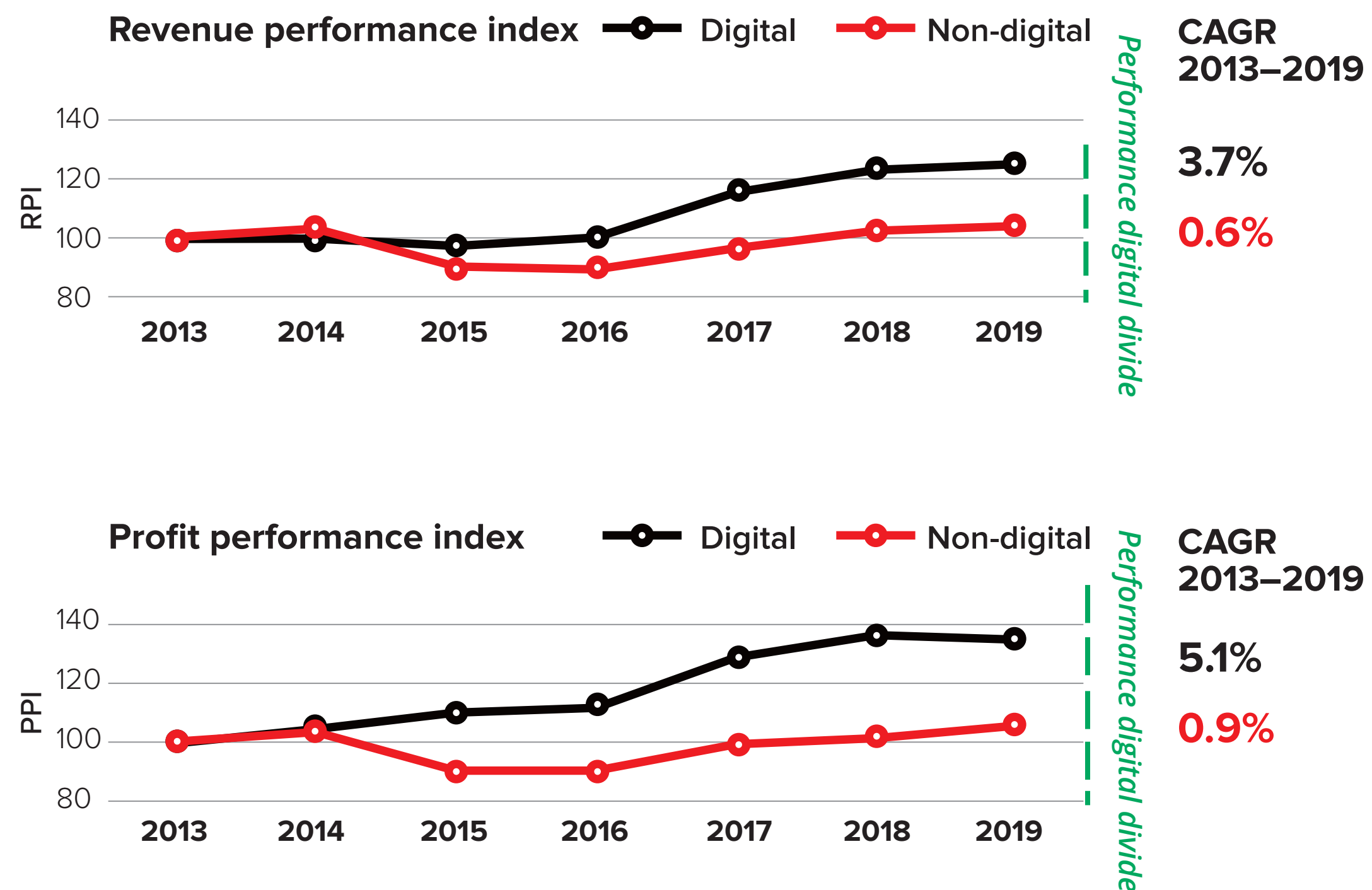
70% of European manufacturers plan to adjust their 2020 technology road map to respond to the COVID-19 pandemic.



- *Preserve cash and take fewer risks*
- *Double down on a technology-enabled vision for our core offerings*
- *Automate to increase efficiency in core operations*
- *Invest in technologies to deliver response to volatile customer needs*

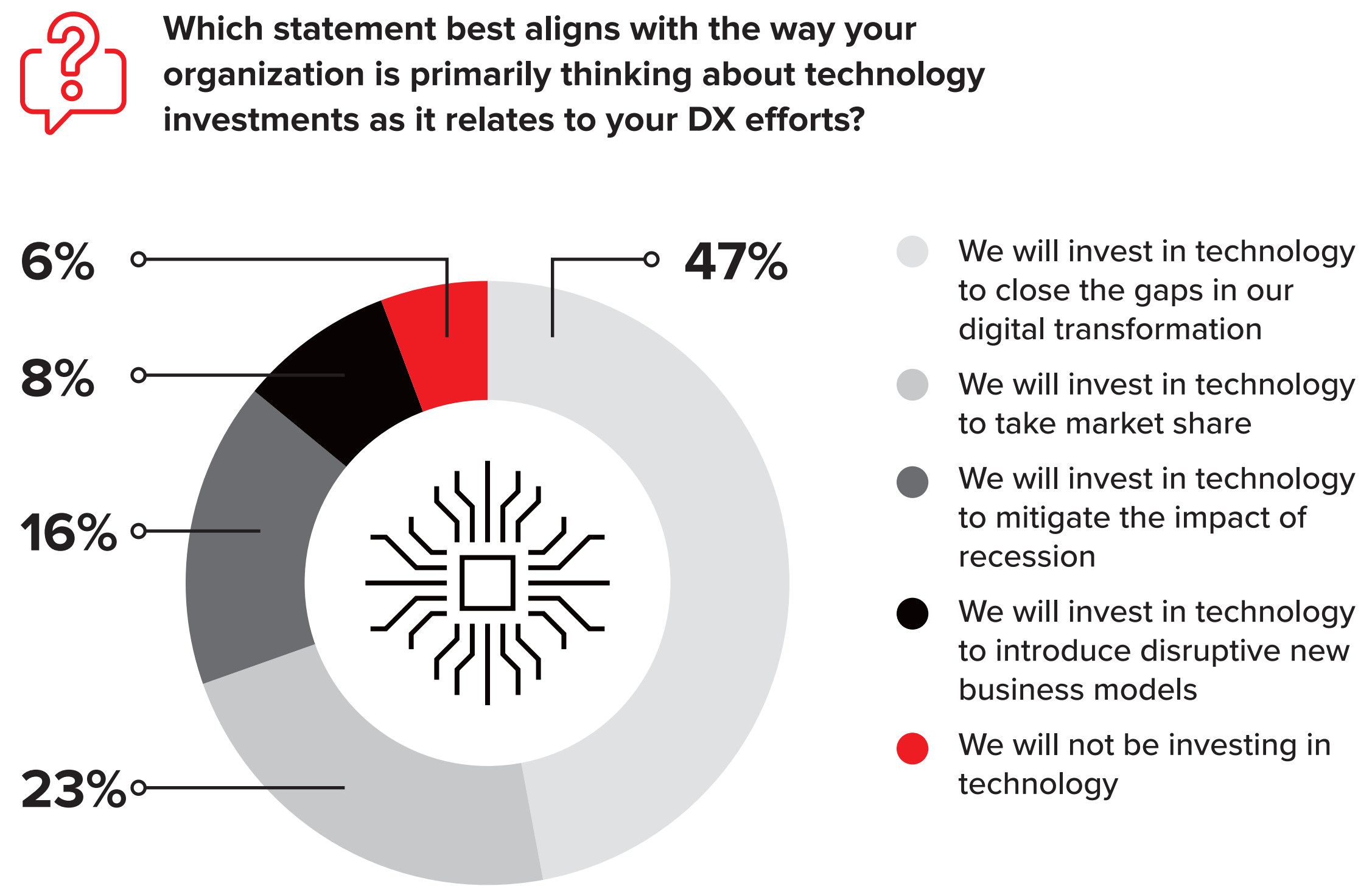
To establish successful business models going forward, it's imperative to support processes with disruptive technology that enables **agility**, **efficiency**, and **innovation**.

MANUFACTURERS ARE INCREASINGLY AWARE OF THE LINK BETWEEN IT INVESTMENTS AND BUSINESS RESULTS



Source: IDC Manufacturing Insights' Global Performance Index analysis, 2013–2019

Methodology: The IDC Manufacturing Insights Global Performance Index (GPI) tracks growth metrics from 800+ publicly traded global firms in the manufacturing and retail industries based on the performance of a sample of companies from those subindustries. The definition under which companies qualify as “digital” is assessed using the IDC DX maturity framework, taking into account factors such as leadership, operating model, data management, and omni-experience.



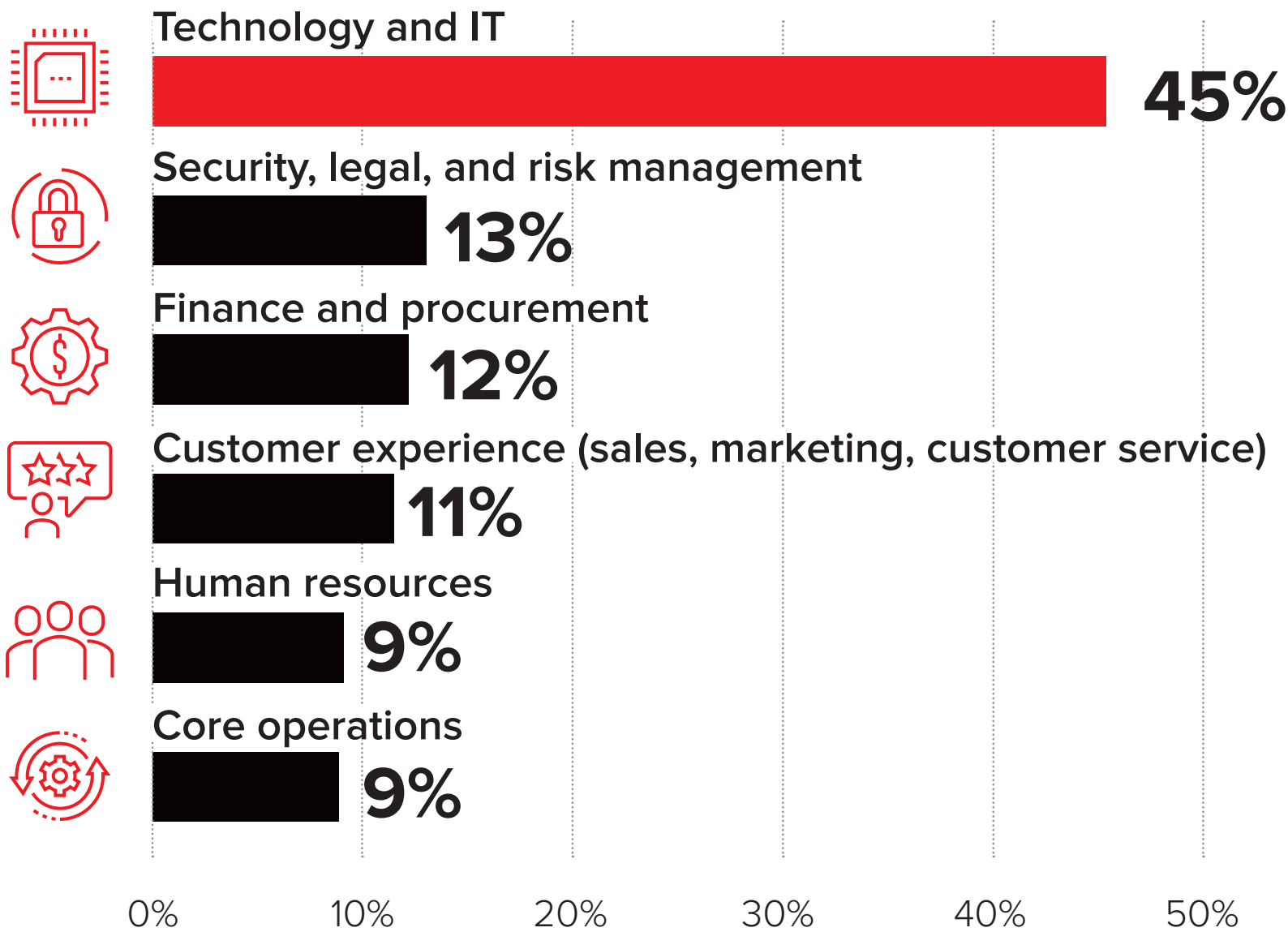
Source: IDC EMEA, COVID-19 Impact Survey Europe, Internal, Wave 6: June 8–12, 2020, manufacturing = 156

IN THIS JOURNEY, THE IT FUNCTION IS BECOMING AN ESSENTIAL BUSINESS ENABLER, BUT CHANGING THE WAY IT OPERATES

Companies are reinventing their IT organizations, skills, and practices to make them more fit for purpose for the modern world. IT leads this transformation.



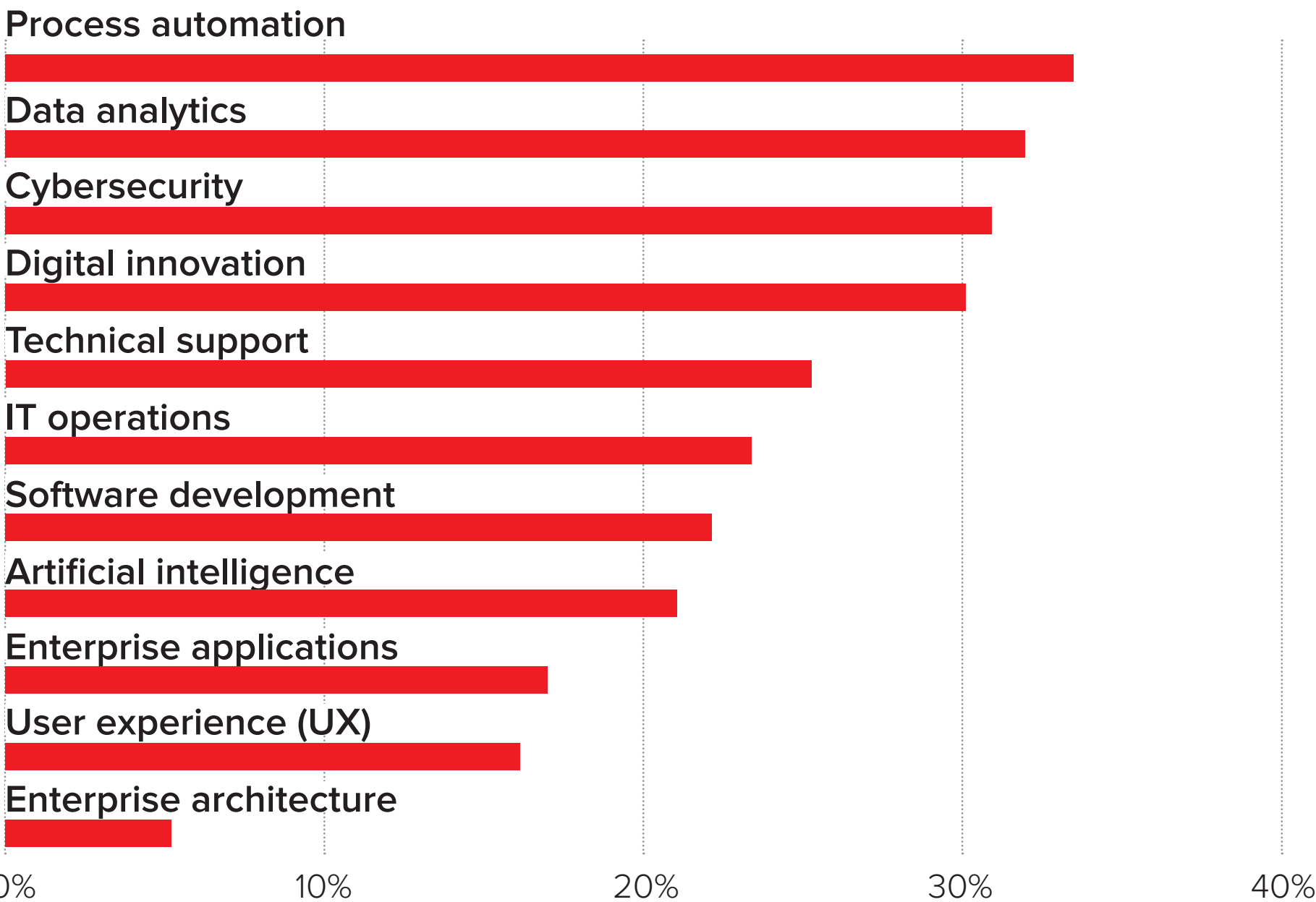
Which function is gaining in relevance at executive level because of the crisis?



Source: IDC EMEA, COVID-19 Impact Survey Europe, Wave 5: May 18–25, 2020, manufacturing = 160



What will be the most important IT skills that your organization needs to build/rebuild/hire in the first wave of economic recovery?



Source: IDC EMEA, COVID-19 Impact Survey Europe, Wave 6: June 8–12, 2020, manufacturing = 156

A DISRUPTIVE APPROACH TO TECHNOLOGY, WITH A HINT OF PRAGMATISM

Please indicate which of the following best describes your organization's approach to buying technology in the next six months.

We will aggressively seek out emerging technology to create advantage even if it means some products may sometimes not work



We will be leaders and early adopters of new technology; we're willing to take a few risks



We will be pragmatic and look for proven but not necessarily innovative solutions that we are confident will add value



We will stay with our current technology as long as we can and buy only well-established products when we must



We will avoid purchasing anything new if we can help it



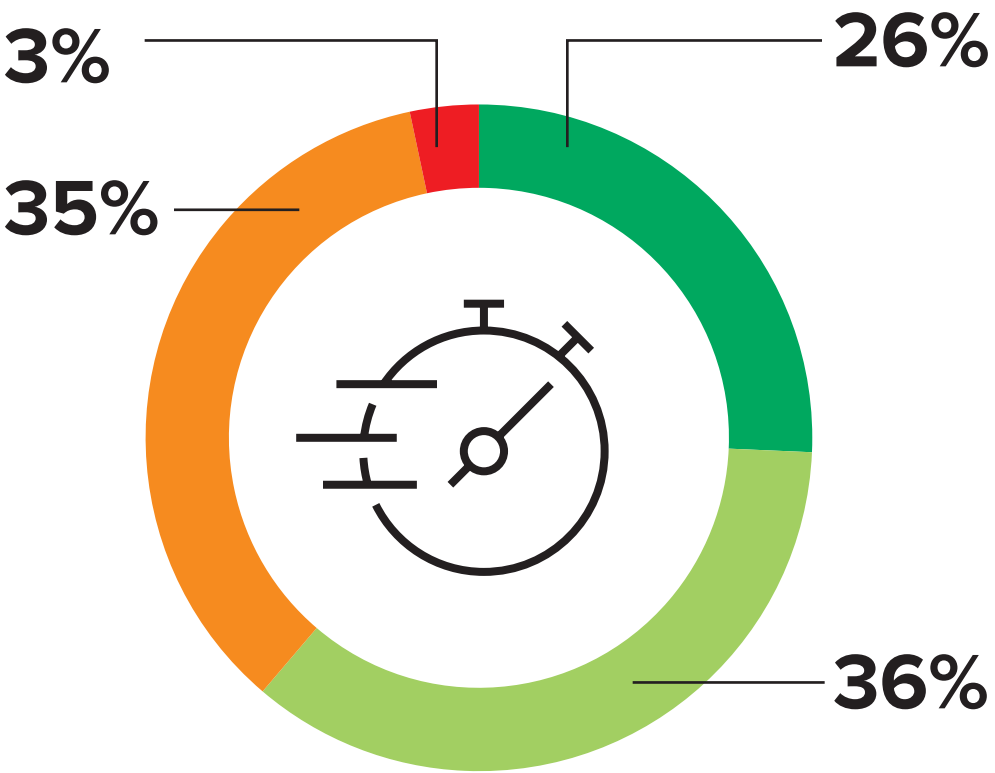
While the approach to new technology investments ranges from being conservative to maximizing the opportunity to the fullest, manufacturers realize this needs to be done at **speed** with a **focus on ROI**.

Source: IDC EMEA COVID-19 Impact Survey Europe — Wave 6, June 8–12, 2020, manufacturing sample n = 156

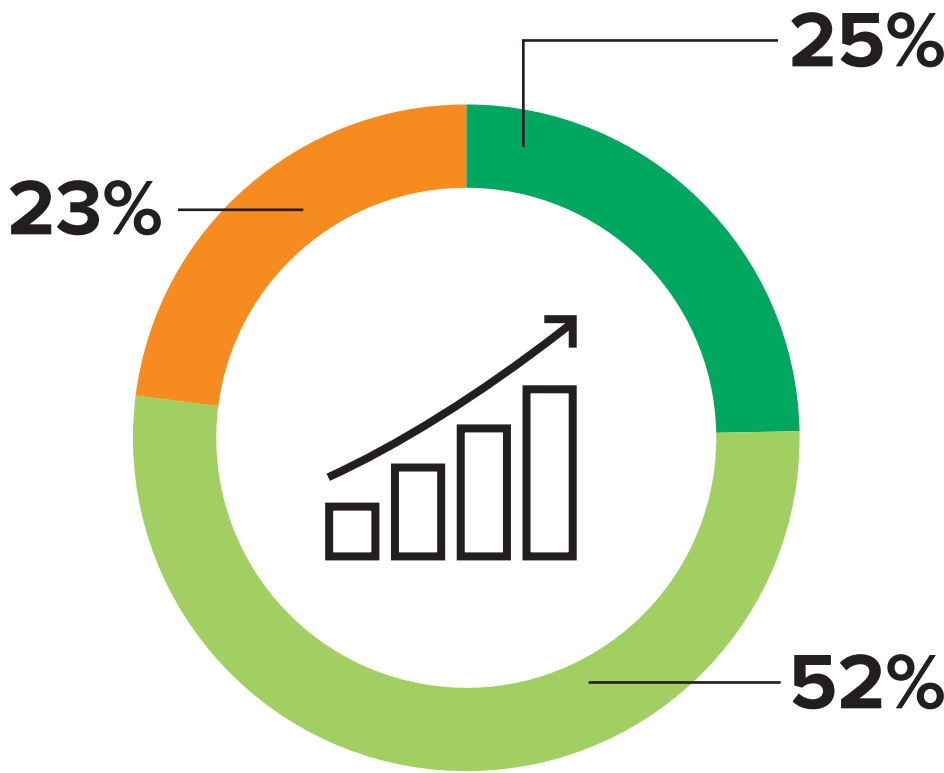


Have these become more or less important to your technology purchase decisions as a result of the COVID-19 pandemic?

Implementation speed



Shorter ROI

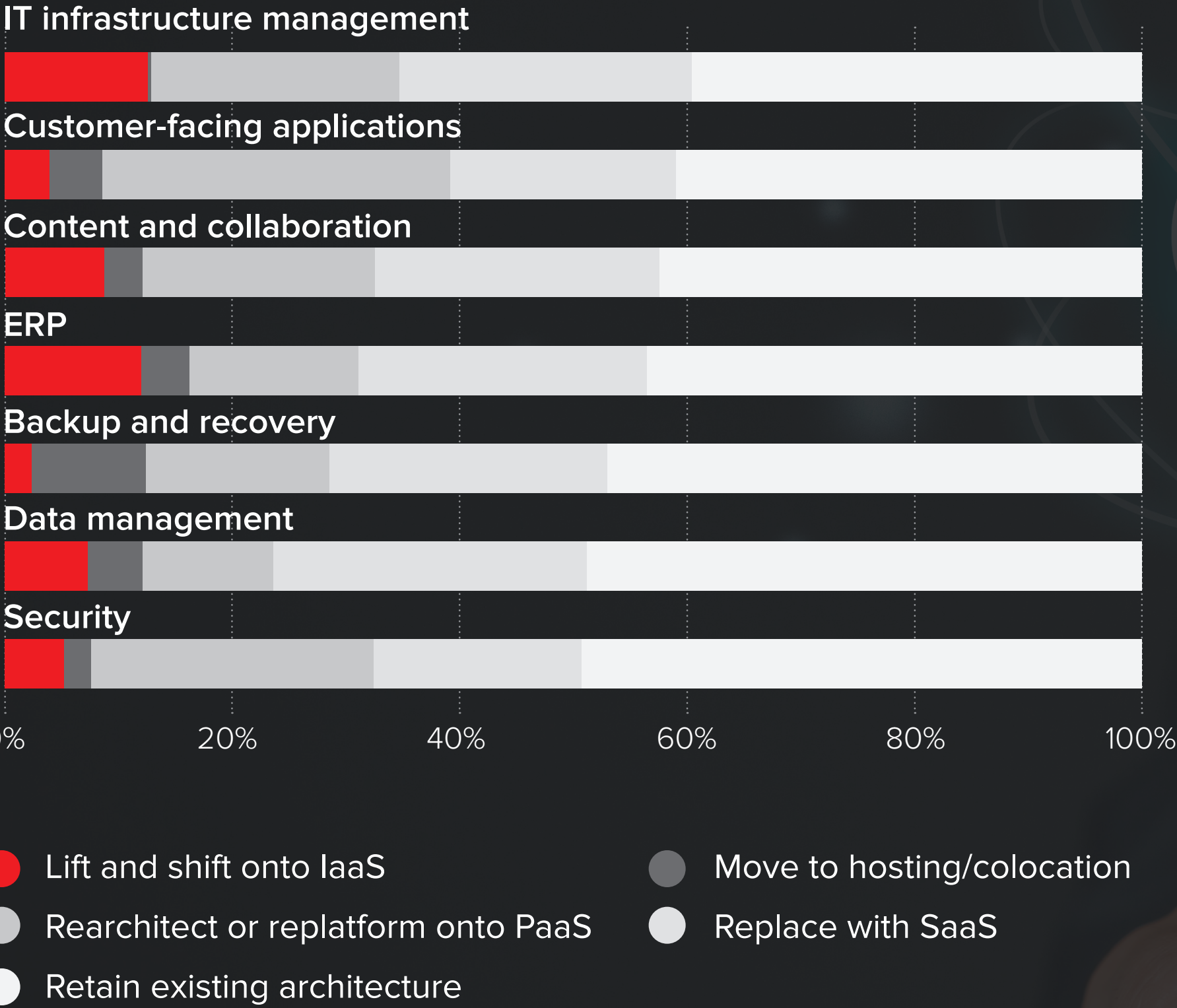


- Significantly more important
- More important
- Same importance
- Less important
- Significantly less important

Source: IDC EMEA COVID-19 Impact Survey Europe — Wave 4, May 4–11, 2020, manufacturing sample n = 143

INVESTMENTS IN NEW CLOUD ARCHITECTURES GET TRACTION, HELP WITH SPEED

Looking at your 2020 technology road map, please highlight your plans for the following workloads.



Making business operations resilient and scaling innovations fast are some of the key reasons for using cloud.

Investments in **new cloud architectures** are considered to support main workloads and drive value to business in the form of superior resiliency and in preparation for future disruptions.

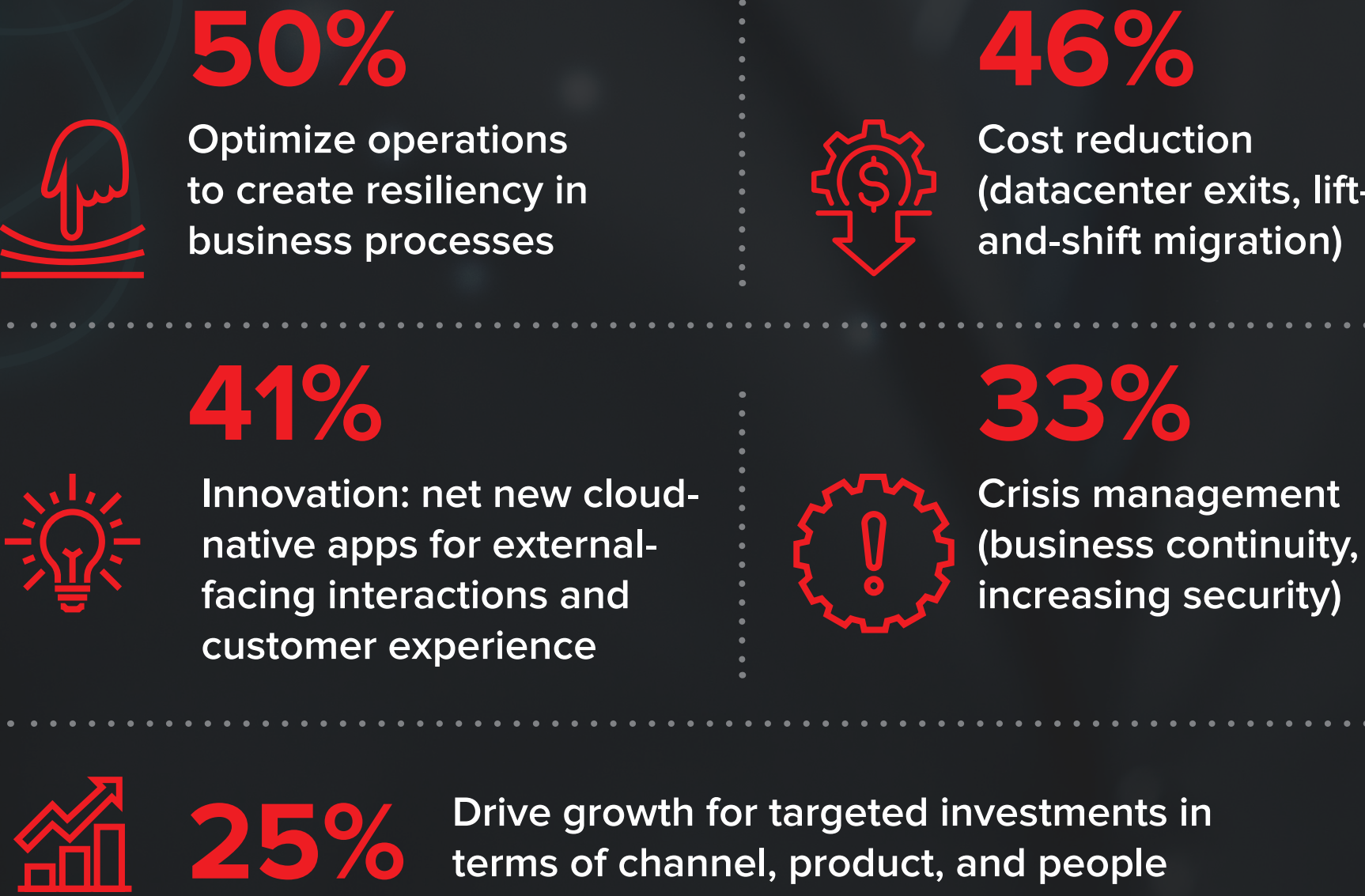
The advantage of cloud:

- An IT infrastructure that is scalable for use in a broader ecosystem
- Data management, data analytics, and AI/ML capabilities

Ecosystem-specific cloud deployments

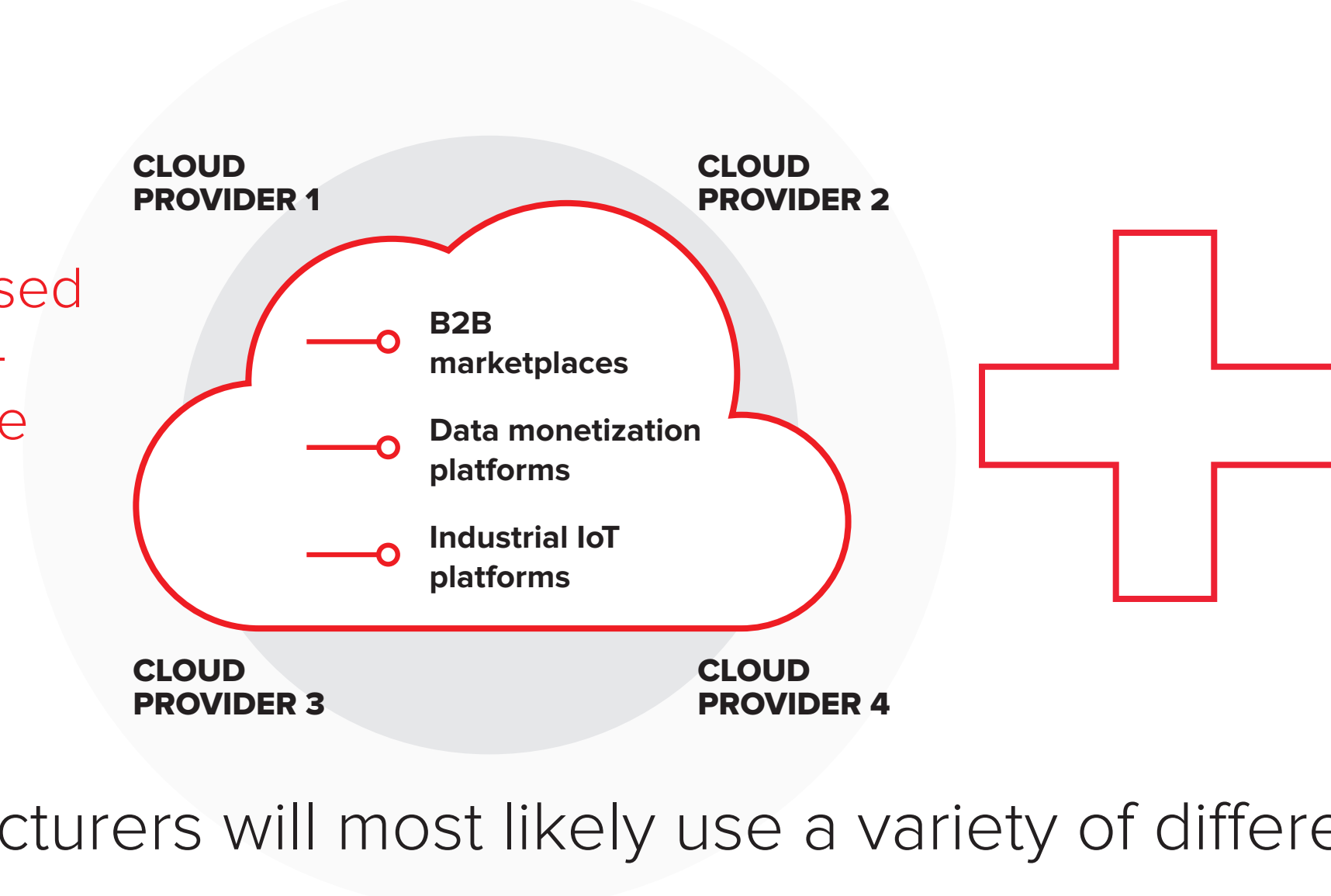
- B2B marketplaces
- Data monetization platforms
- Industrial IoT platforms

What is your organization using cloud for?



MANAGING MULTICLOUDS WILL BECOME PART OF THE NEXT NORMAL

Manufacturers cloud-based collaboration platform — they're more likely to use multiple platforms.



In addition to cloud-based platforms that are used for ecosystem collaboration, there is also a general shift toward cloud for various other reasons:

- Optimizing operations to create business resiliency
- Capitalizing on data
- Accessing applications that help to increase customer engagement



In fact, manufacturers will most likely use a variety of different cloud-based platforms for various use cases.

Examples in action

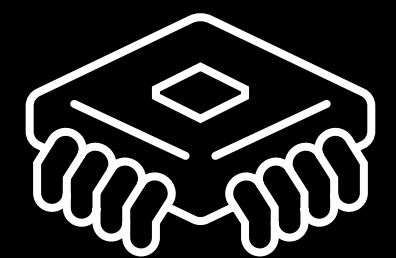
Case study 1

- A **heavy-equipment manufacturer** was facing constantly fluctuating marketplaces and significant competition, especially in Asia. To maintain its market position and competitive advantage, it needed to transform its IT, rearchitecting for a digital edge.
- To take control of its digital strategy, the manufacturer deployed an interconnection-first strategy, enabling it to bring applications and services closer to users, optimize multicloud connectivity, enhance security and reliability, and boost performance.
- As it transformed its IT strategy, the manufacturer leveraged a portfolio of interconnection solutions, which unlocked capability across the world's most strategically located and interconnected datacenters. This led to heightened security, compliance, and reliability, as well as significant global commercial flexibility across all operations.



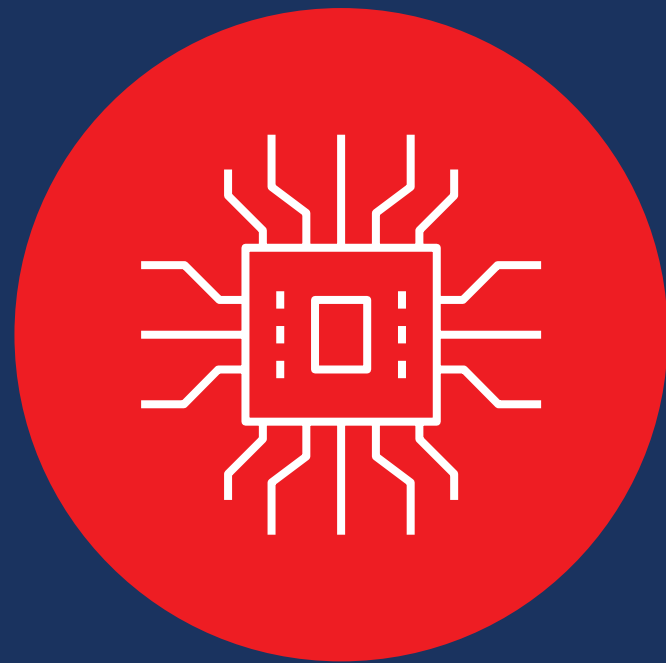
Case study 2

- An **electronics manufacturer** known for its ability to quickly react to market changes in different markets needed to find a way to maintain this agility for innovation.
- The company invested in integrating cloud solutions into its infrastructure to support greater cost and performance efficiencies.
- Not only did the move from local to virtualized hardware investment reduce cost and workloads, but it also saved the manufacturer time by establishing data management independent of local storage that works at a global scale.



IDC RECOMMENDATIONS

Propelled by the COVID-19 pandemic and in light of accelerated future disruption, the importance of DX is more obvious than ever for today's manufacturing enterprises — not just to become more resilient but also to improve competitiveness. This requires investment in digital technologies that can help to enter new markets, engage customers in unprecedented ways, and explore new business models. They will only achieve this by shifting from an enterprise to an ecosystem approach. Key to this shift is a cloud-based environment that leverages multiple cloud services and is run across diverse physical environments that provide stable, high-speed, low-latency interconnections:



Invest in a **platform** that can turn large amounts of data into valuable insights while integrating with your business partners' **technology platforms**



Develop an **enterprise framework** for **secure data management** and **exchange** globally that covers **edge** and **cloud workloads**, as well as **peer-to-peer connections**

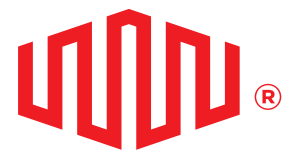


Consider a technology partner that can support your needs for a **scalable infrastructure** and **data management** by optimizing your **multicloud connectivity**

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