

The Intelligent Business

Bold moves, priorities, and barriers to cross the turning point



AT&T Business

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Executive summary

Digital transformation is at a turning point. Sure, businesses have been augmenting their infrastructures with advanced data management solutions, emerging technologies, and the next generation of networks. But only a few companies (8% of those surveyed) are successfully using infrastructure to connect data from edge to edge—across their endpoints, networks, and cloud services. We call these companies the Committed Investors.

Committed Investors are making bold moves when it comes to investing in infrastructure—a strategy that might sound counterintuitive against the headlines of hot technologies. These moves are helping to improve their customers' experiences, shorten innovation cycles, and boost operational efficiency.

The research in this report is based on a survey of 795 non-IT executives in Asia Pacific, EMEA, and North America, from the retail, manufacturing, transportation, healthcare, and financial services industries.

What the research shows

Investments are paying dividends—for those bold enough

For organizations that are prepared to invest heavily and in the right areas, their investment in technology infrastructure is paying off. However, fears about making the wrong technology decisions, combined with internal barriers, are causing pain points within many companies. Responses from a minority of organizations that are pulling ahead provide valuable strategic insights.

Data, priorities, and cognitive dissonance

Businesses have high confidence in their data management capabilities but are frustrated by their inability to exploit existing data. This suggests there is a disconnect between the organization's perception of its existing systems and the reality of its data management processes. Couple this with potentially misguided technology priorities, and many companies may find themselves struggling to stay ahead of the technology curve.

Hyper-focus on cybersecurity can be a barrier to digital transformation

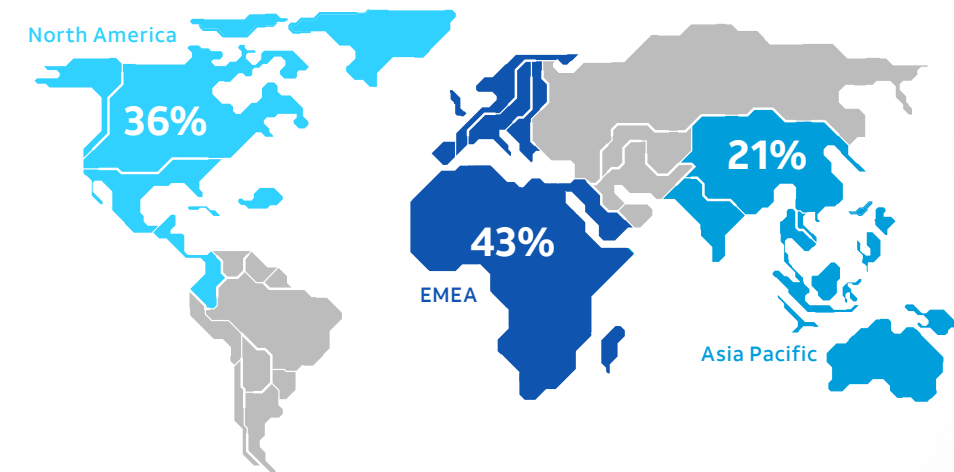
Prioritizing cybersecurity above all else can stifle business transformation if resources are funneled into cybersecurity to the exclusion of other investment. Therefore, businesses must determine what their data security priorities are before investing. Critically, the survey shows those investing the most in technology infrastructure are looking beyond security. Instead, their focus is to build more agile, innovative businesses by prioritizing a range of technologies, including open architectures. If those with lower budgets can apply elements of this approach to their own strategy, it could see them pulling ahead from competitors whose investments in cybersecurity dwarf their other technology investments.

About the research

The analysis in this report draws on the results of a global online survey of 795 senior non-IT roles (C-Suite and direct reports) conducted in June and July 2018 on behalf of AT&T by Longitude, a Financial Times company that has world-class expertise in quantitative and qualitative research.

All of the survey's respondents have oversight of, influence on, or involvement in their organization's decisions relating to its technology infrastructure. Quotas were set on the sample to help ensure a roughly even split between 5 industries: financial services, healthcare, manufacturing, retail, and transportation.

Respondents were based in 3 territories:



All respondents work in large organizations that have annual revenues of USD1 billion or more.

In-depth insights were obtained from interviews conducted with the following individuals:

- **BARNEY LOEHNIS**
Chief Digital Officer and Digital Transformation Consultant
- **MICHAEL MCNAMARA**
GM Architecture, ANZ
- **ROMAN PACEWICZ**
Chief Product Officer, AT&T Business
- **MIKE QUINDAZZI**
Managing Director, PwC
- **RANDALL SKATTUM**
Senior Director, Marketing & Marketing Communications, Celanese
- **NELSON K. STACKS**
President & CEO, WaveGuide Corporation
- **PAUL SZABLOWSKI**
Thought Leader and Former SVP of Brand Experience, Texas Health Resources

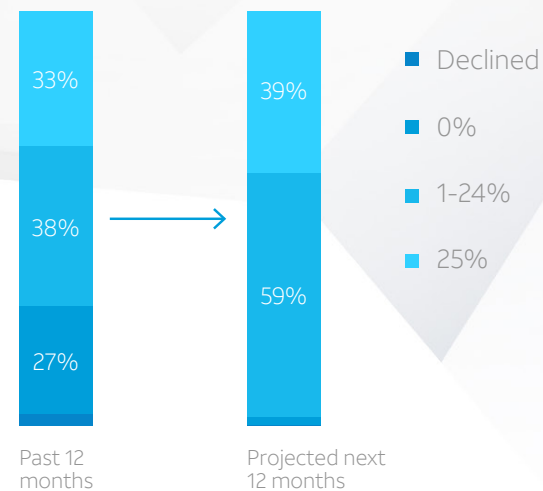
Invest heavily now— or pay the price later

Upward trajectory

Investments in technology infrastructure are expected to shoot up.

By approximately what percentage has your organization's investment in upgrading your technology infrastructure grown in the past 12 months, on average?

And by how much are you expecting your organization's investment in upgrading your technology infrastructure to grow in the next 12 months, on average?



The majority of businesses are committed to upgrading their technology infrastructures and are investing to propel their transformation programs.

For instance, 71% of respondents have increased their technology infrastructure spending over the past 12 months; it's projected that 98% will increase their spending over the next year. 8 in 10 are also investing in technology infrastructure to keep pace with evolving customer expectations.

This increased investment appears to translate into improved outcomes across the business. Over the same time frame, more than 75% of respondents report 'improvement' or 'significant improvement' in areas including customer experience, time to act on new opportunities, and operational efficiency.

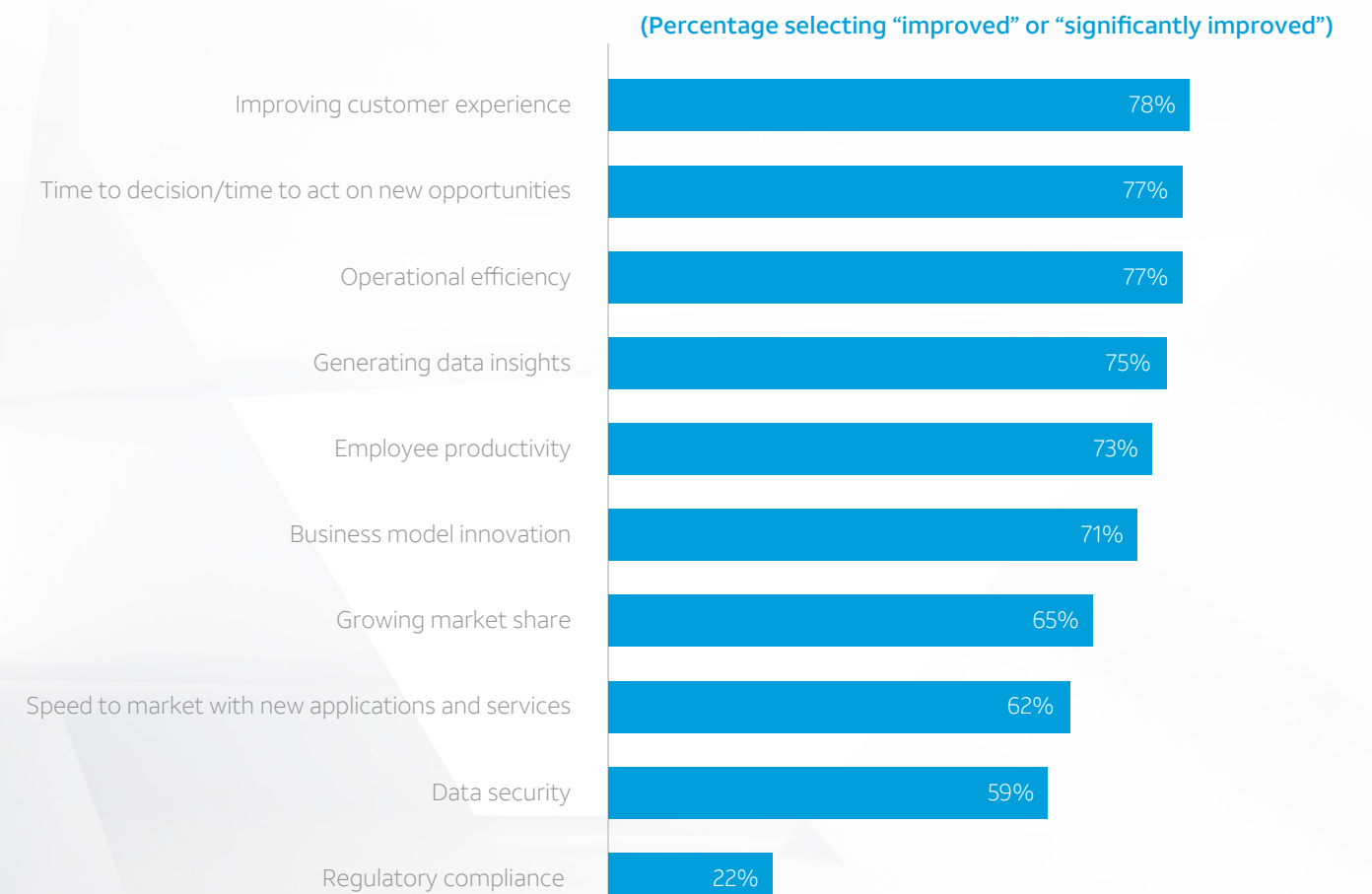
“Organizational value is created by having a flexible, dynamic infrastructure that allows you to connect everything almost instantaneously and can be adapted to whatever is needed.”

ROMAN PACEWICZ
Chief Product Officer, AT&T Business

Promising performance

Business performance is improving in all areas.

How would you describe your organization's performance in the following areas over the last 12 months?



Who are the Committed Investors and Hesitant Investors?

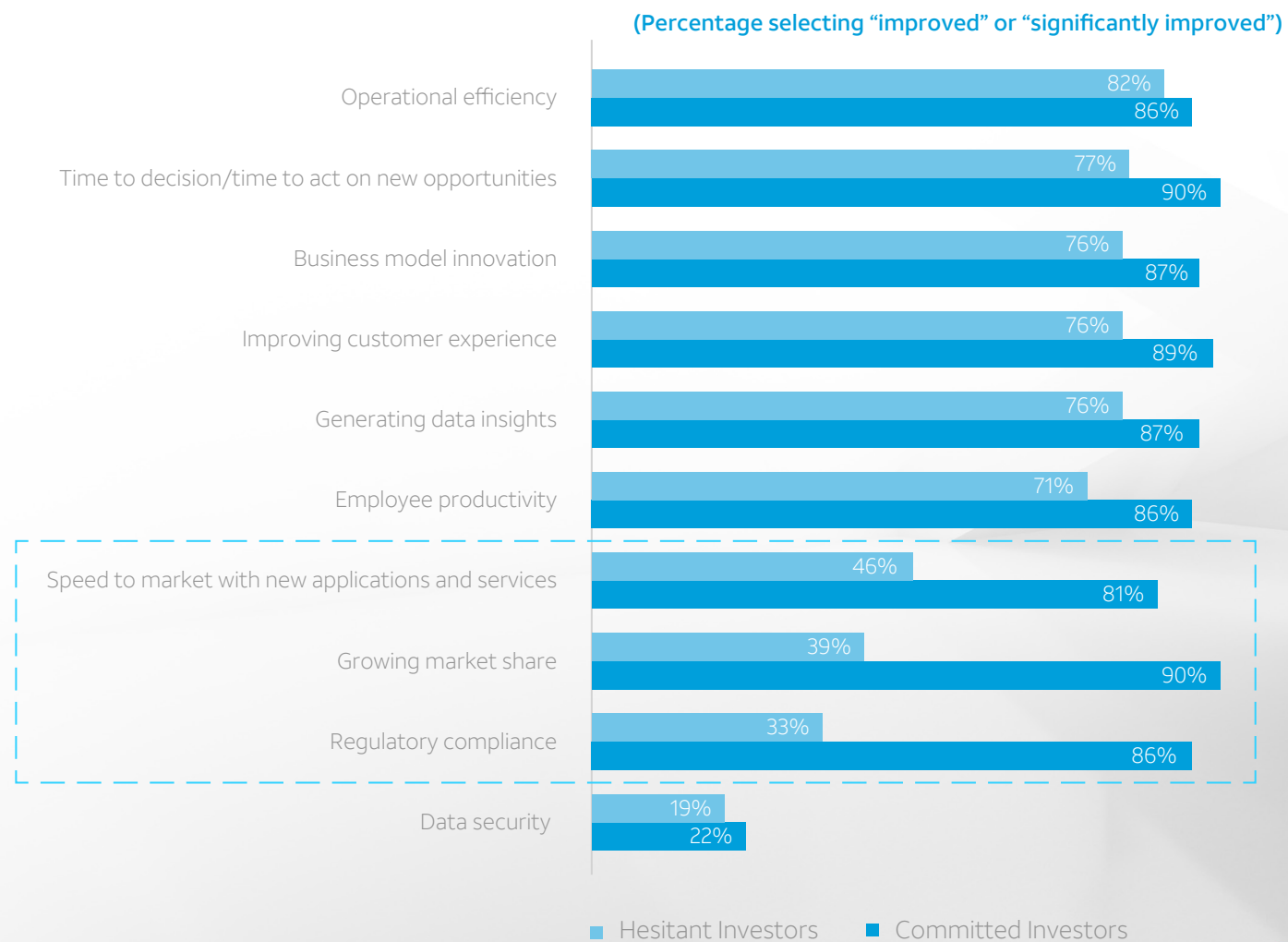
Throughout the report, deeper analysis of respondents from either end of the investment spectrum reveals valuable insights. These are best illustrated with 2 groups:

Committed Investors. Organizations that have increased their investment in technology infrastructure by more than 75% year on year (YoY)—8% of the total sample.

Hesitant Investors. Organizations whose investments in technology infrastructure have declined or stayed the same YoY—29% of the total sample.

Segmenting these 2 groups shows, for example, that those who are investing the most—our Committed Investors—are far more likely than Hesitant Investors to see improvements in critical business areas such as growing market share and speed to market with new applications and services.

How would you describe your organization's performance in the following areas over the last 12 months?



And the differences don't end there. While Committed Investors may have larger budgets fueling their transformation (see below), nevertheless, valuable insights can be gleaned through deeper analysis of how these businesses are investing in infrastructure.

Committed Investors

The Committed Investors are evenly spread across the surveyed territories, with the manufacturing and financial services verticals showing the greatest commitment to high investment levels—37% and 24% respectively. Critically, enterprises with revenues of USD10 billion+ make up the most significant proportion of this group (49%). This suggests that the larger the enterprise's revenues, the greater the commitment—and the investment.

Hesitant Investors

Hesitant Investors are most likely to be found within transportation: 35% come from this vertical. This is followed by retail (28%) and healthcare (22%). Just 6% and 9% of this group are from financial services and manufacturing, respectively. Organizations with between USD1 billion and USD4.99 billion in revenues account for 64% of Hesitant Investors, which suggests that organizations with smaller revenues are the least confident about investing in technology infrastructure.

Transformation will drive competitive advantage

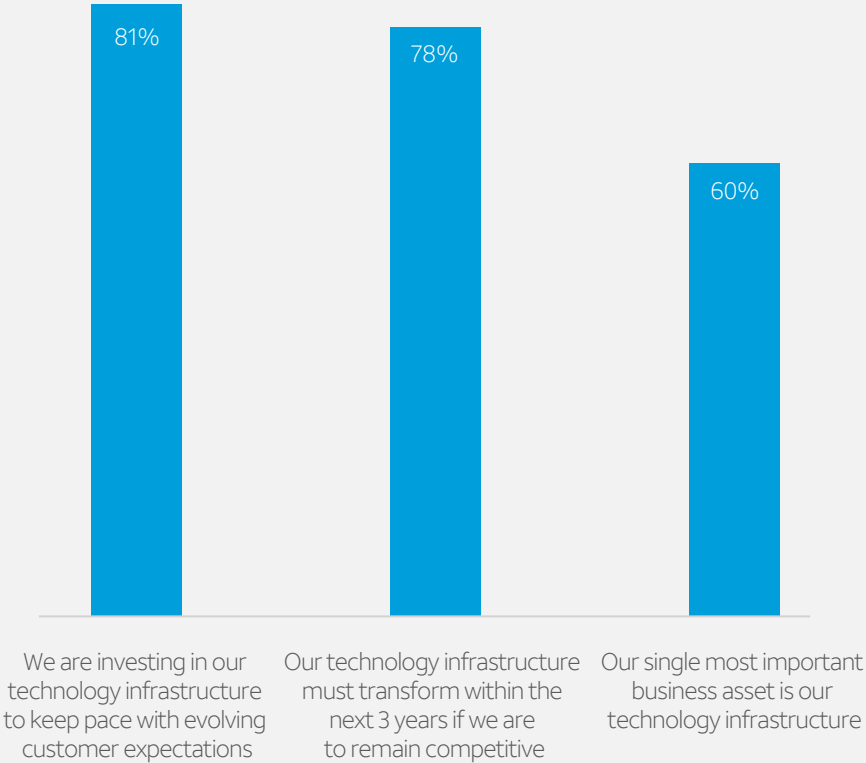
The survey shows that organizations believe transformation will give them a competitive edge over their rivals.

Priority check on tech

Executives agree that next-generation technology infrastructure will fuel competitive edge.

To what extent do you agree or disagree with the following statements?

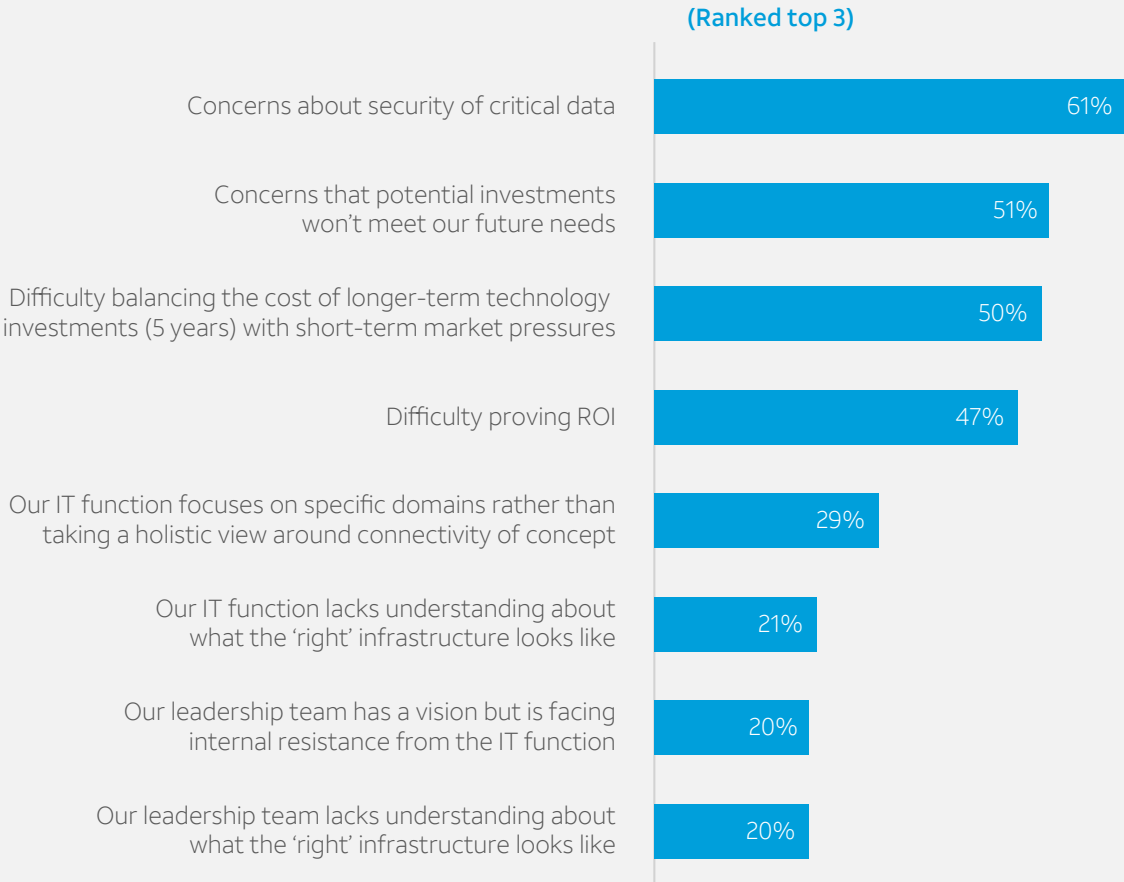
Percentage who "agree" or "strongly agree"



Investment roadblocks

Top barriers to agreeing on investment strategy for technology infrastructure.

Which of the following are/have been a barrier to agreeing on an investment strategy for your technology infrastructure?



However, several internal barriers suggest that many business leaders are struggling to make long-term strategic decisions. For example, more than 1 in 5 are fearful that they do not have the knowledge they need to scrutinize their IT function's approach and strategy, while one-third are struggling with competing visions about future technology infrastructure. Finally, 1 in 5 businesses feel that their IT departments are holding them back from transforming despite having a vision in place.

Overcome internal challenges with planning, persistence, and partners

These barriers are not insurmountable. Transformation demands that organizations take a multi-tiered approach:

Strategy first

A cohesive strategy is required before committing to any infrastructure investment—a strategy that accounts for deciphering the specific needs of the company, non-tech stakeholder education, and formulating a coherent roadmap for the transition itself. The more defined the strategy is, the greater the organization's chance of overcoming common barriers and, crucially, winning buy-in from the C-Suite and IT department.

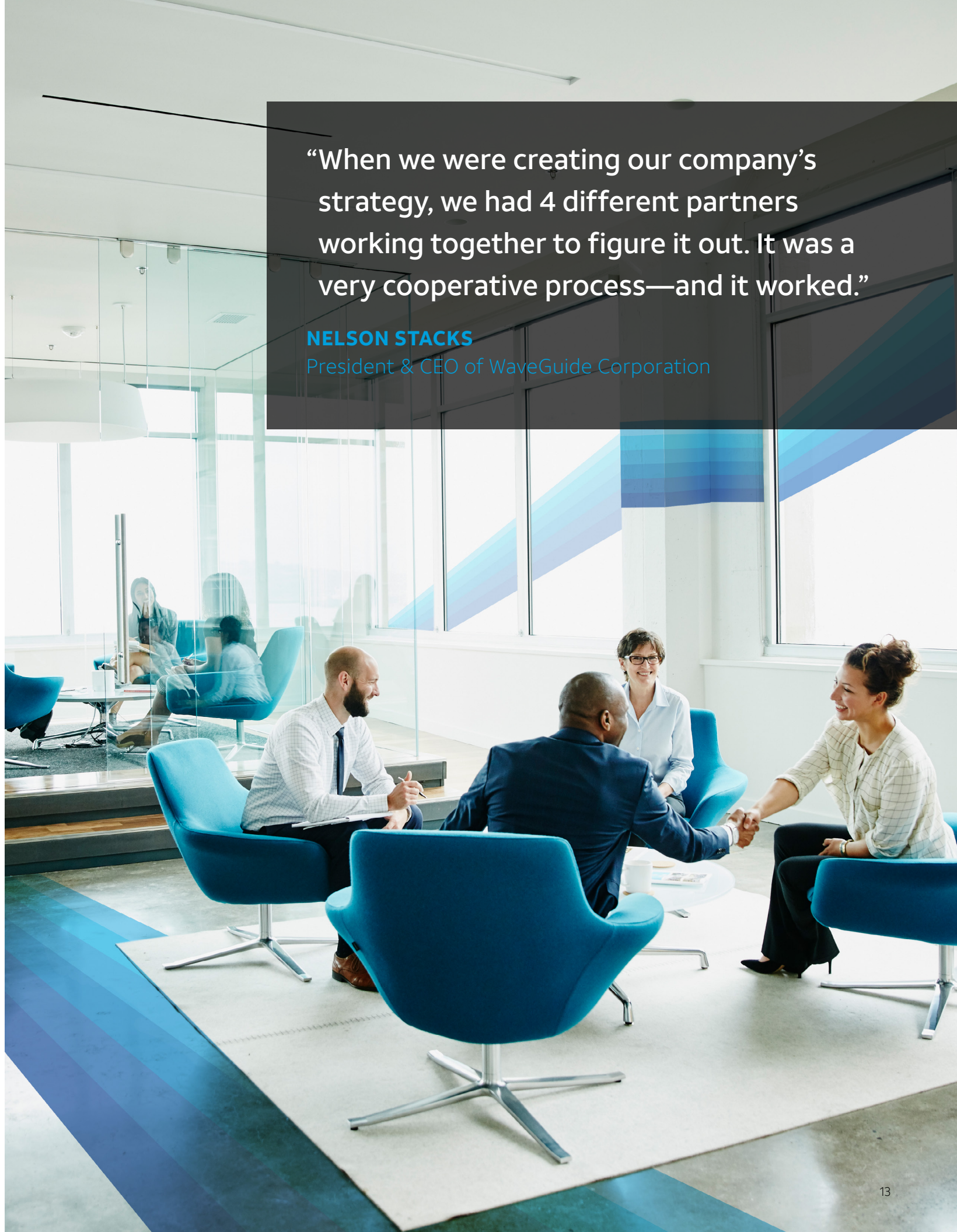
A critical part of this strategy development is managing the human element. Businesses are typically willing to adopt transformation in principle, but stakeholders can be notoriously wary of change itself, and will insist on seeing analysis from multiple, often conflicting, quarters.

Michael McNamara, GM Architecture, ANZ, believes that to combat stakeholder wariness, the enterprise must have a “transformation evangelist” driving the transformation strategy. “If you don't, it causes all sorts of cultural friction,” he says. “As soon as you get into a decentralized technology environment, nobody is going to agree. Instead, have someone on the floor creating a shared sense of clarity and working with people to get to the outcomes.”

Partner up

Other key allies are service providers that can analyze infrastructure requirements, aid in strategy creation, and assist in the rollout itself. A seasoned provider will help business leaders to cut through the “white noise” of technology, enabling them to focus on what is most crucial to the business and its future growth.

“For a lot of companies, the only way they can really move forward is by identifying partners to support their ‘network of networks,’” explains Barney Loehnis, Chief Digital Officer and Digital Transformation Consultant. “So, look at the longer-term strategic shifts needed, and line up a network of partners that can help you scale when the market economics allow you to scale.”



“When we were creating our company’s strategy, we had 4 different partners working together to figure it out. It was a very cooperative process—and it worked.”

NELSON STACKS

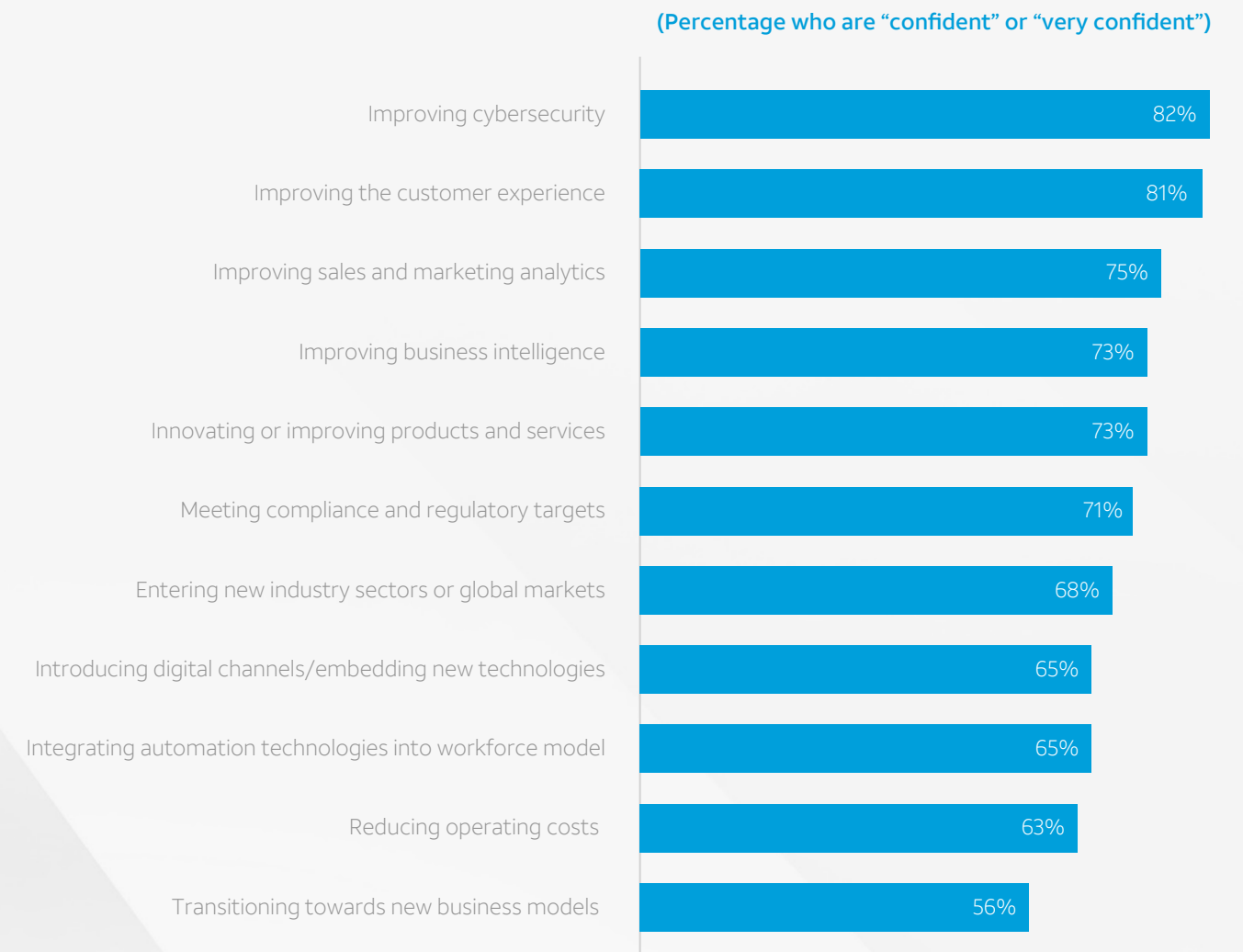
President & CEO of WaveGuide Corporation

Perception vs. reality: The perfect (data) storm

Businesses are confident that their current technology infrastructure will deliver on key data priorities, including better customer experience (81%), sales and marketing analytics (75%), and business intelligence (73%).

Confidence levels riding high

Business leaders say their technology infrastructure will deliver the performance needed to achieve strategic priorities.



How confident are you that your current technology infrastructure will deliver the performance needed to achieve these strategic priorities?

But there is a problem. When it asked respondents about their biggest sources of frustration when they use data within their organizations, the survey revealed a contradiction. Businesses might be confident about their technology infrastructure, but they have serious reservations about their existing data management capabilities.

Reality check

When it comes to using data, business leaders share common frustrations.

Thinking of your own experience of using data in your company, what are your biggest sources of frustration?

Leaders' biggest sources of frustration when using data in their organization

1. A lack of standardized data across the organization
2. Disparate systems mean that data is not visible/accessible across the organization
3. A lack of access to real-time data

(Ranked top 3)

Risky business: Will pride come before a fall?

This contradiction suggests businesses are overconfident about their data capabilities and are failing to extract worthwhile insights. It means business leaders must take another look at their data management processes to be satisfied they are robust enough.

“The problem is enterprise is not looking at the big picture about data first,” says WaveGuide’s Nelson K. Stacks. “They’re not asking, ‘How do we get there?’ They aren’t thinking up front about how they will pull data out or how they will analyze it.”


Celanese Corporation’s Senior Director, Randall Skattum, puts it this way: “Without a clear strategy of what it is that you want to accomplish with your data, it just becomes a whole bunch of ‘stuff.’ It’s like those files in the filing cabinet that no one ever looks at.”

Follow a strategy, not the herd

Closer analysis of Hesitant Investors reveals that this cognitive dissonance is even starker at the lower end of the investment spectrum. The survey shows that they are prioritizing IoT over big data and analytics: over the past 12 months, 59% have focused on IoT, while just 35% have focused on big data and analytics.

These statistics reveal a threat to the Hesitant Investors on 2 fronts. First, they can expect a vast increase in data supplied by the rollout of IoT, but risk being unable to analyze it because they are not investing sufficiently in big data and analytics.

Second, it looks like Hesitant Investors are playing catch-up, investing in “hot technology” as dictated by industry peer pressure, rather than focusing initially on the technology and infrastructure they need to drive forward their own particular transformation strategies.



“Technology is moving quickly. Companies that can absorb technology in new and differentiated ways gain a sustained competitive advantage in the market.”

ROMAN PACEWICZ

Chief Product Officer, AT&T Business

Over the edge

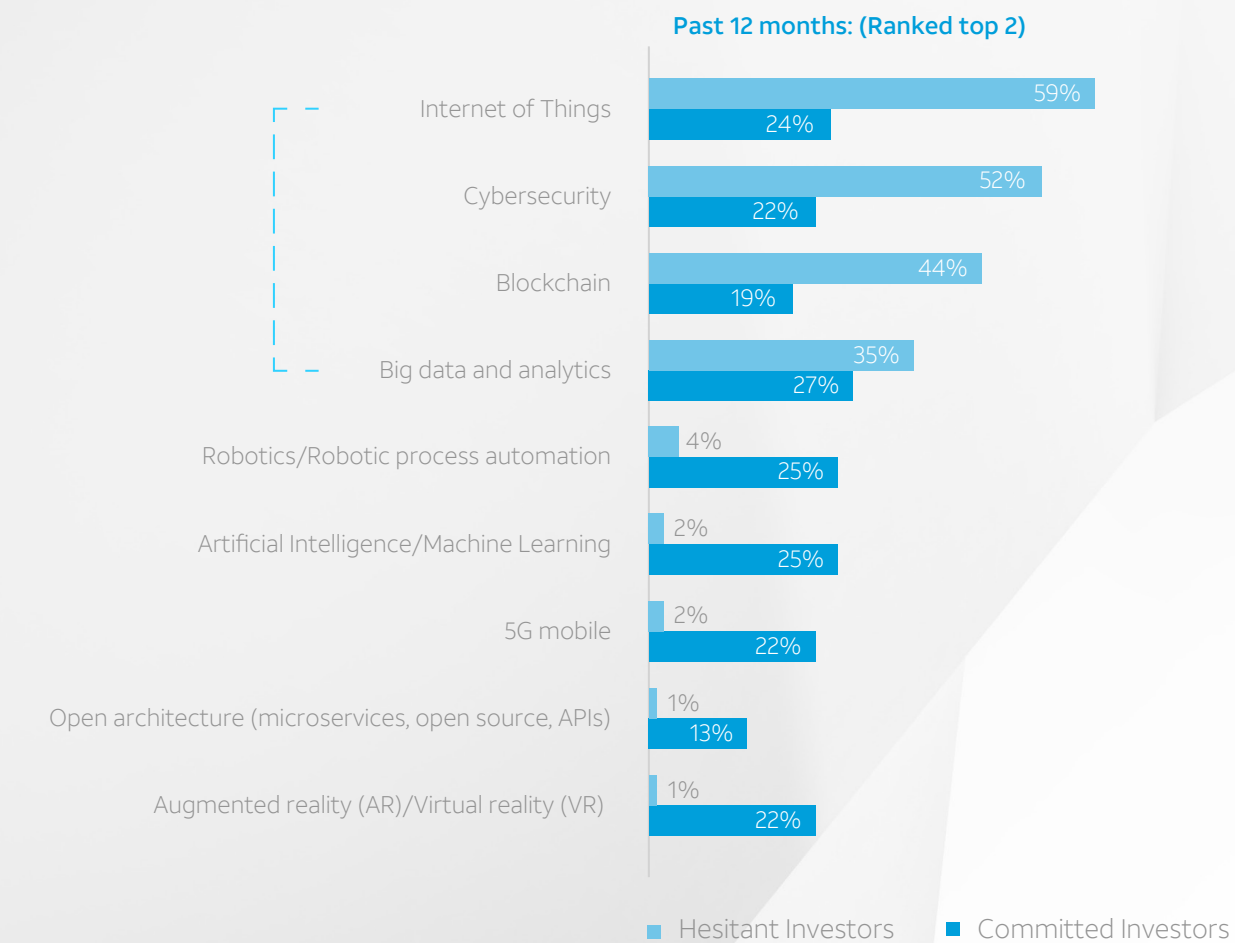
Having a herd-like mentality can result in far-reaching consequences. Hesitant Investors will be unable to connect data from edge to edge because their infrastructures will have been designed to only address specific company pain points—with any technology deployed on an ad-hoc basis. Success depends instead on a holistic, company-wide infrastructure strategy.

For example, over the past 12 months, 24% of Committed Investors have prioritized IoT, while 27% have focused on big data and analytics, which suggests that when data starts flooding in, Committed Investors will have the balanced infrastructure they need to effectively manage and analyze those new datasets.

Investment priorities

Are businesses prepared for an influx of data?

Which of the following technologies or technology capabilities have been an investment priority over the last 12 months?



Open architecture: Is the door closed?

The survey shows there is investment across all emerging technologies, but that levels could be too low to make a positive impact; this is especially true of open architecture (OA). Businesses should prioritize OA as the number-1 component of any future-facing infrastructure. Spending in this area, however, is barely higher than it is on artificial/virtual reality (AR/VR). ANZ's Michael McNamara explains why: "Instead of going with proprietary architectures, we're embracing open standards by adopting platforms that can be effectively plugged together in a modular fashion. This allows you to change your architecture to keep pace in the current environment and to enable new and emerging technologies as they emerge."

This OA-driven approach will allow ANZ to sequence its infrastructure's implementation based on the company's business priorities. As the survey reveals, that kind of flexibility will be crucial to business leaders. For instance, 8 in 10 organizations across the total sample are investing in technology infrastructure to keep pace with evolving customer expectations (particularly in EMEA and North America). OA is crucial for sharing data within ecosystems that will enable organizations to better understand their customers.

But the survey shows the significance of OA is remarkably under-appreciated within each vertical. Because of this blind spot, operations could suffer as infrastructure becomes inflexible and monolithic instead of agile and microservice-driven.

Past and future perfect? Investment priorities by industry

To understand how effectively business leaders are managing transformation, the survey examined industry-by-industry investment levels, revealing the strengths and weaknesses of vertical-specific strategies.

Manufacturing

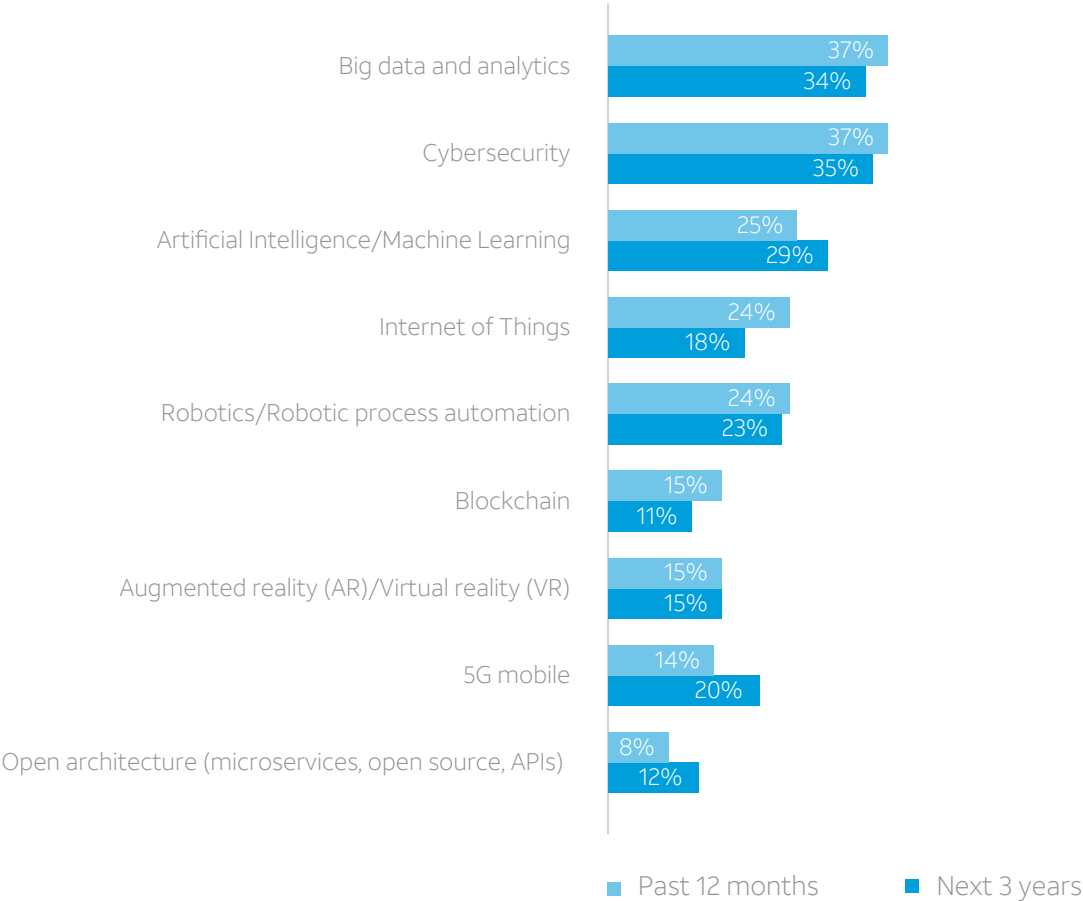
Strengths

- Big data and analytics capabilities are being put in place to meet growing IoT-driven data volumes.
- Largest investor in robotics by a wide margin, as the industry pushes towards automating production lines.

Weaknesses

- Greater investment in open architectures will be needed to help drive innovation throughout the industry.

Top 2 investment priorities—past 12 months vs. next 3 years (manufacturing respondents only)



“Enterprises initially explore software robotics to reduce headcounts and/or reduce costs. Instead, they’re holding on to their talent by getting those people into positions to leverage their functional expertise to create value and competitive advantage.”

MIKE QUINDAZZI
Managing Director, PwC

Healthcare

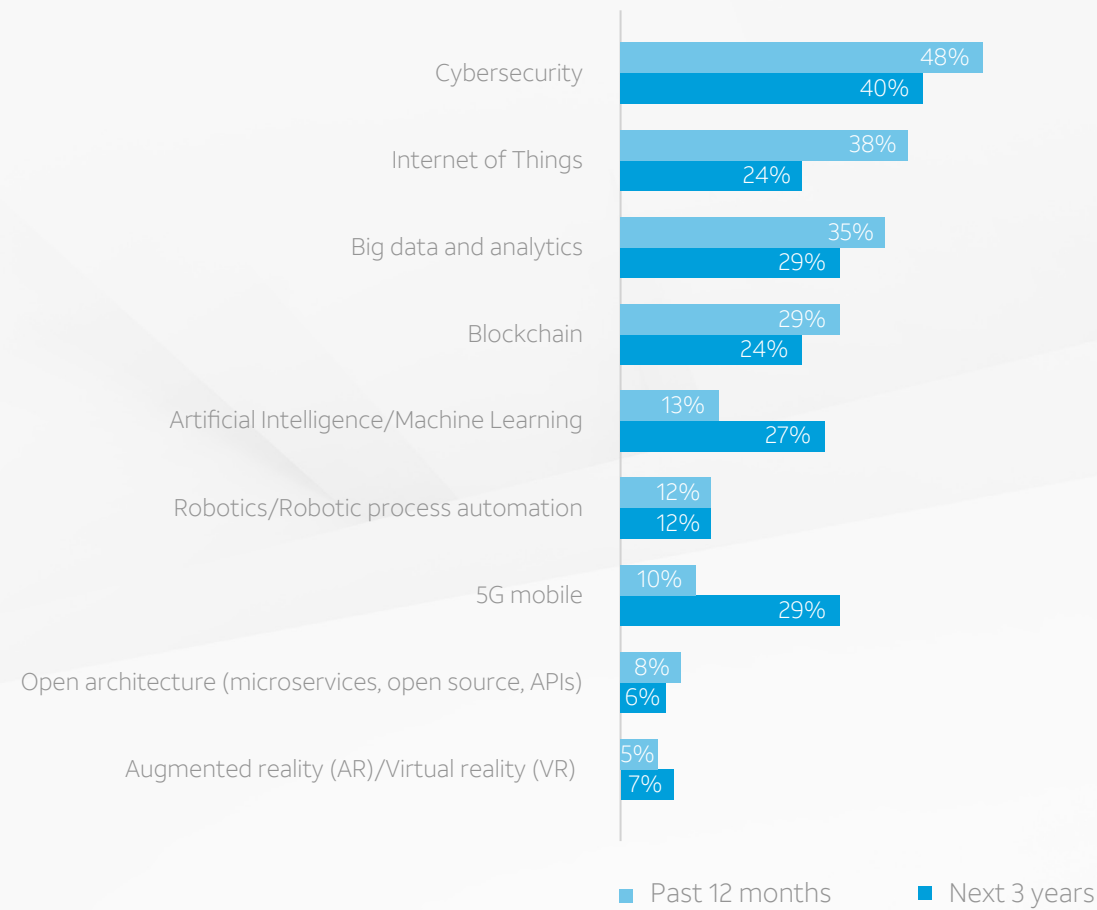
Strengths

- Strong and balanced approach to IoT and big data and analytics, which highlights industry commitment to creating merged e-health processes.

Weaknesses

- AI investment is surprisingly low considering how crucial it is to identifying patient trends, but is projected to increase significantly in the medium term.

Top 2 investment priorities—past 12 months vs. next 3 years (healthcare respondents only)



“Hospital systems look at everything from an operational perspective—an inside view. But a growth-and-innovation perspective is required—an outside view. To transform successfully, you’ve got to have that vision.”

PAUL SZABLOWSKI

Thought Leader and
Former SVP of Brand Experience,
Texas Health Resources

Retail

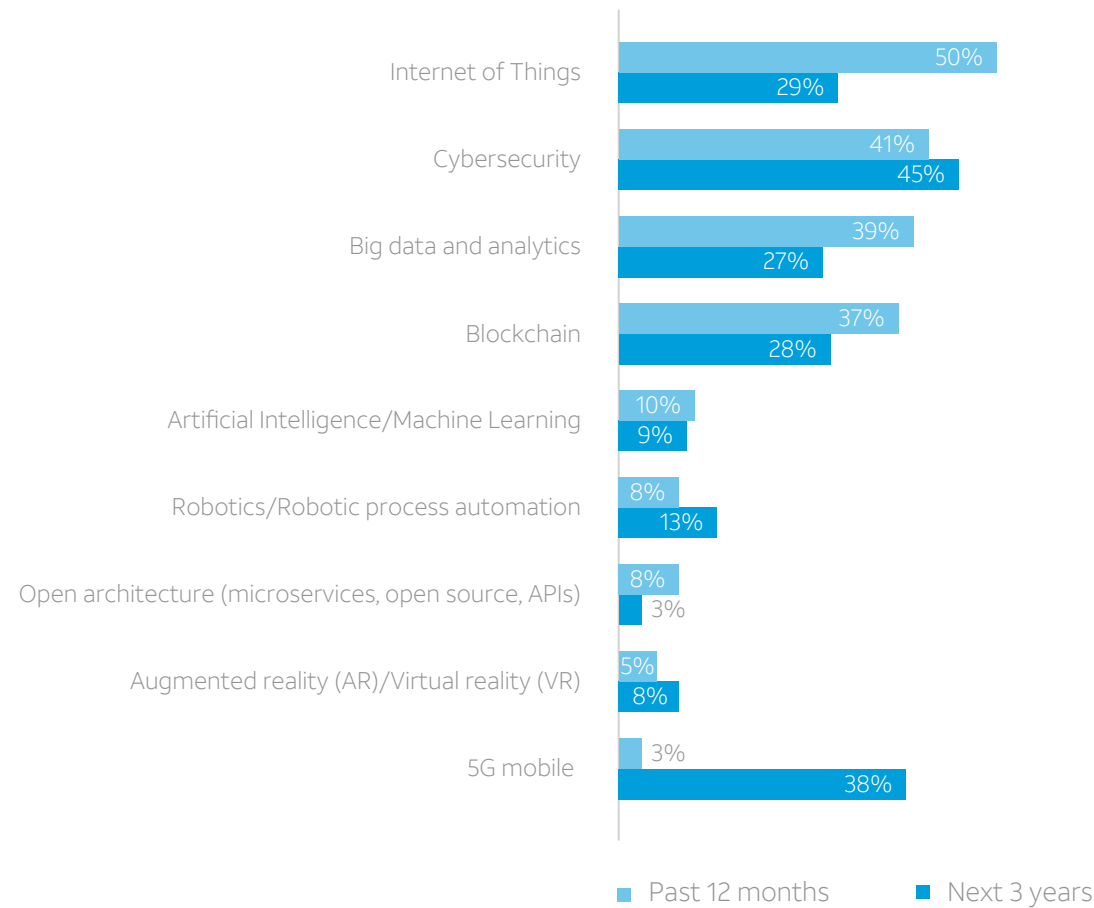
Strengths

- Past and future investment in blockchain is highest of all industries—outstripping even healthcare—plus retail has been the second largest investor in IoT over the last 12 months.

Weaknesses

- But investment in big data and analytics is projected to fall away, which suggests there could be data-analysis issues in the future.

Top 2 investment priorities—past 12 months vs. next 3 years (retail respondents only)



“Deep learning is evolving from tribes of connectionists and being fueled by the massive data set or ‘big data,’ which is increasingly becoming available. It’s about algorithms sorting through massive amounts of data—at speeds and levels of detail humans simply can’t handle—and generating accurate predictions across industries.”

MIKE QUINDAZZI, Managing Director, PwC

“Within financial services, analysts and investment advisors would be very good candidates for reduction. A lot of the premium value of what they’re paid for can be replicated with machine learning and more algorithmically driven responses.”

BARNEY LOEHNIS

Chief Digital Officer and Digital Transformation Consultant

Financial services

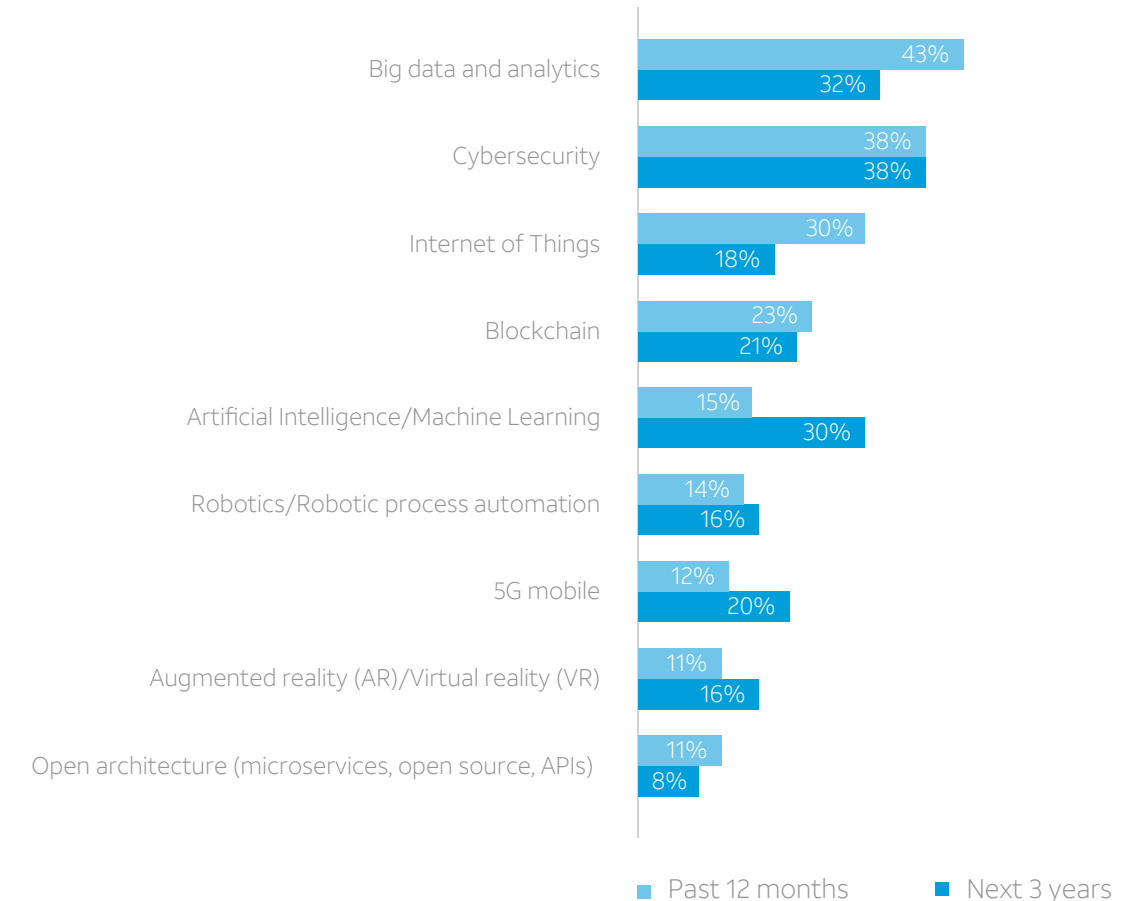
Strengths

- Healthy balance between IoT and big data and analytics helps ensure the industry will have sufficient data management capabilities in place in the future.

Weaknesses

- Investment in blockchain too low for a technology that can monitor and protect sensitive data.

Top 2 investment priorities—past 12 months vs. next 3 years (financial services respondents only)





“The greatest threat to legacy companies is the lack of technology understanding and how technology can be utilized to disrupt marketplaces in the formation of strategy. It’s the key weakness.”

BARNEY LOEHNIS

Chief Digital Officer and Digital Transformation Consultant

Transportation

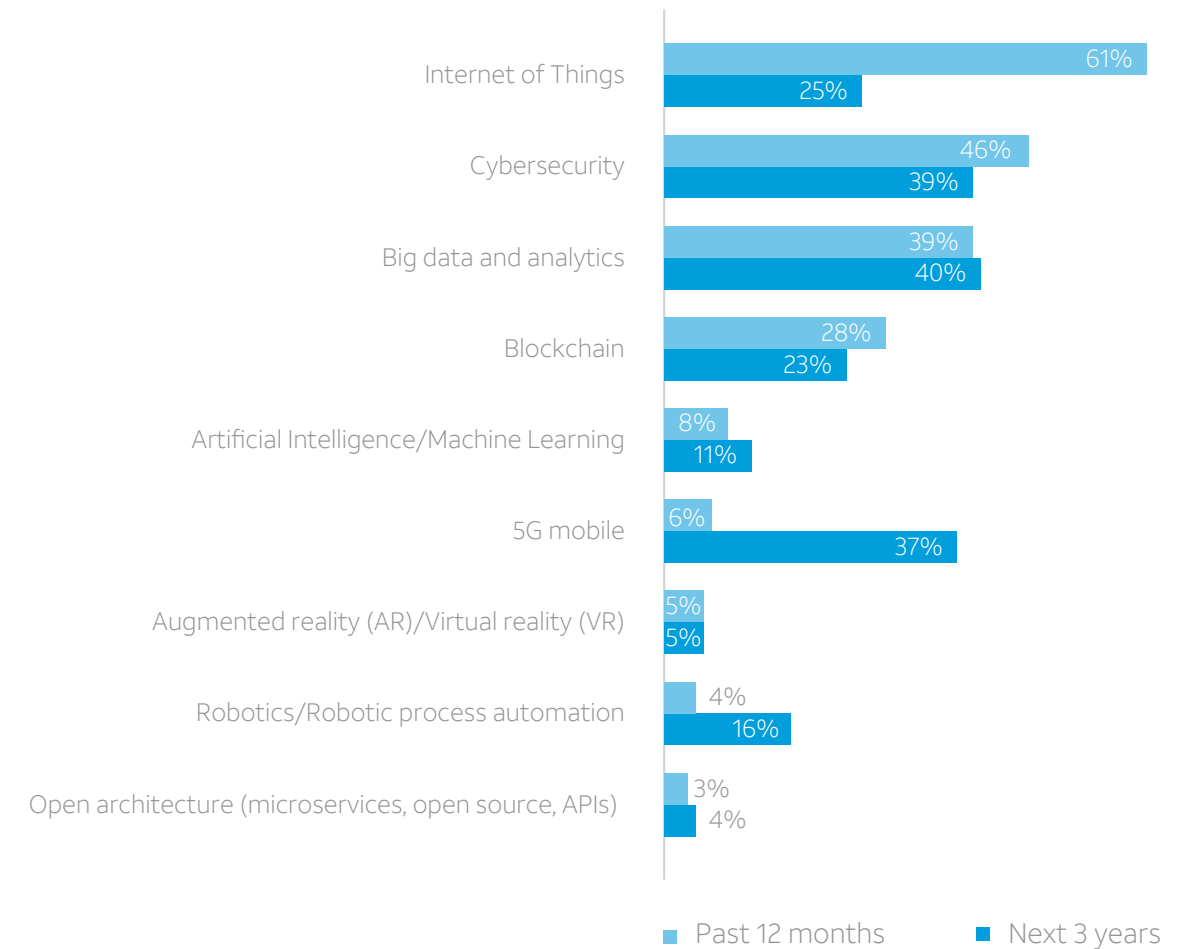
Strengths

- Heaviest investor in IoT, but big data and analytics investment was low by comparison over past 12 months.

Weaknesses

- Investment levels in big data and analytics set to remain consistent over the next 3 years while IoT investment falls, indicating that industry aims to rectify the imbalance—but will it be too late?

Top 2 investment priorities—past 12 months vs. next 3 years (transportation respondents only)



Cybersecurity: The good, the bad—and and the ugly

Businesses are listening to technology specialists and their concerns about cybersecurity, and are investing substantially in security measures. They must be careful, however, not to let their concerns influence their transformation strategies. By allowing excessive caution to lead the way, they may see nimbler competitors take the lead.

The good

Cybersecurity is top of businesses' agendas. It has been prioritized as the number-1 technology of the past 12 months. Respondents are also most likely to say they are most excited by the knowledge that their data will be more secure.

Combined, this represents a dramatic turnaround in attitudes toward security. The majority of businesses are now taking a proactive stance against cyber threats.

The bad

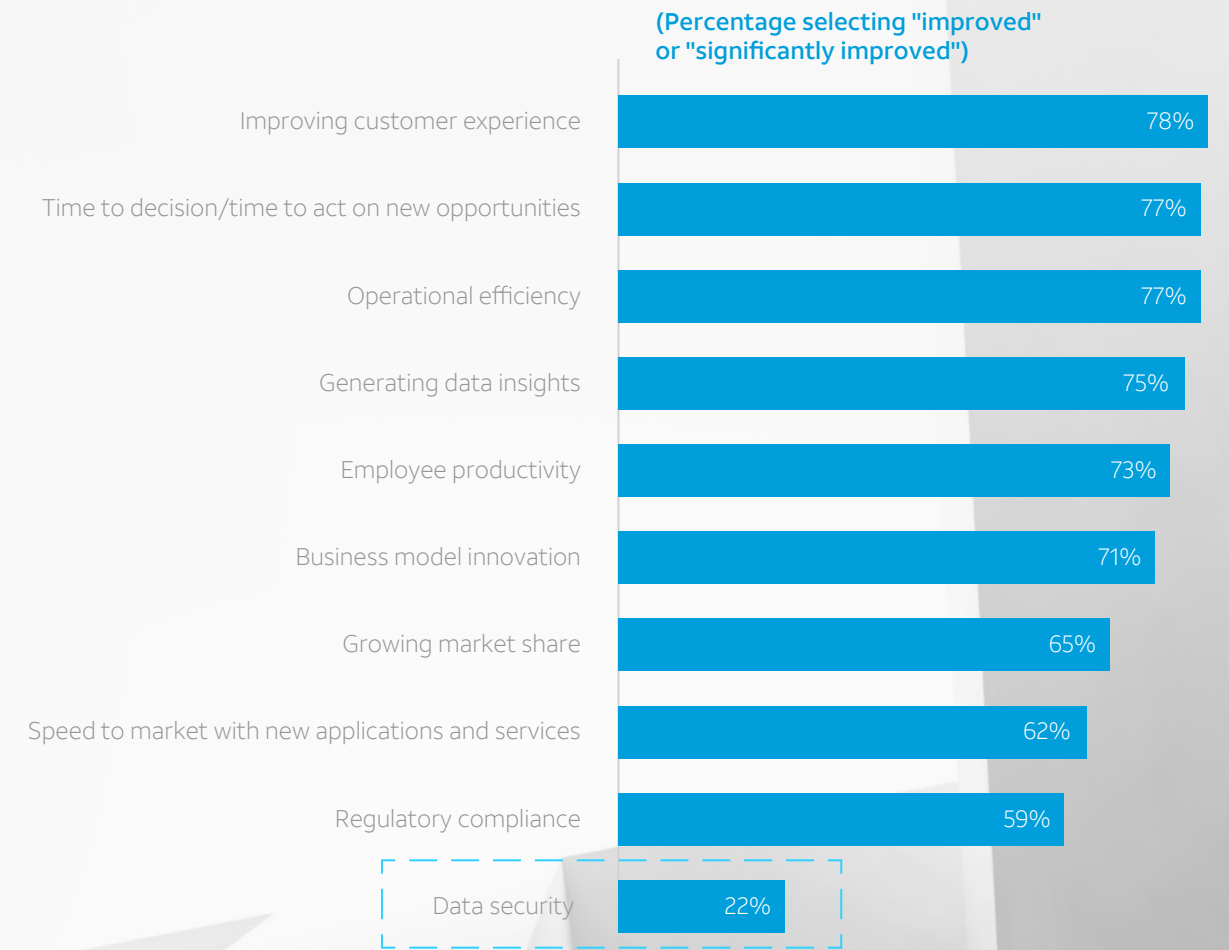
However, security is potentially exerting a stranglehold on business—harming, not helping, transformation. Nearly 2 in 5 respondents (38%) say that data security measures hindering innovation is a top-3 source of frustration.

Cybersecurity is also the biggest barrier to agreeing on an investment strategy for technology infrastructure. And despite increased levels of investment, cybersecurity is seen as the most underperforming area of the past 12 months. Businesses can invest as much in cybersecurity as they want, but if they don't understand where to direct that investment, it could be wasted.

Business enhancement

Improvements in data security are lagging behind other business areas.

How would you describe your organization's performance in the following areas over the past 12 months?



The ugly

The survey findings also suggest that many business leaders lack the capability to balance the pressures of cybersecurity with the need to focus on new technologies and innovation.

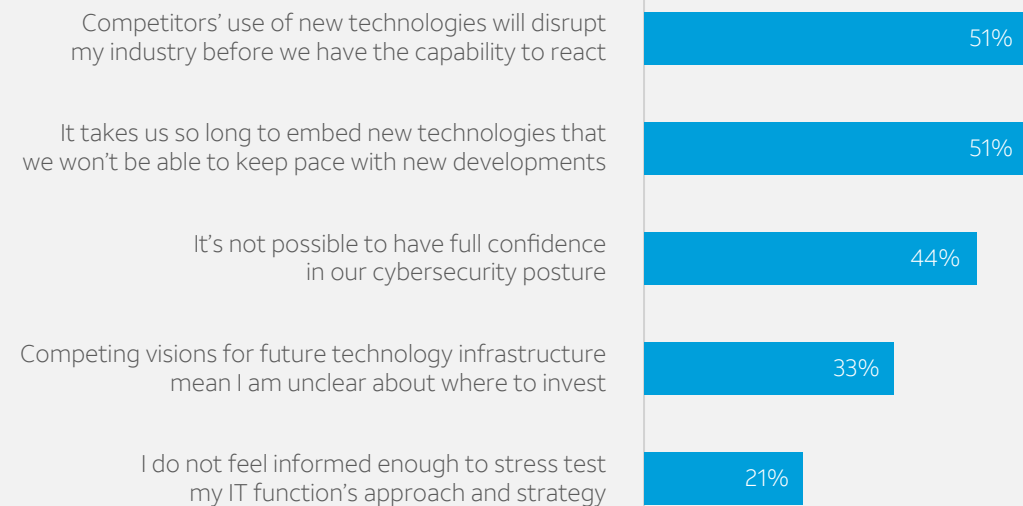
The focus on security is also exacerbating fears about being left behind by faster-moving competitors. More than half (51%) of respondents say they are concerned that competitors' use of new technologies will disrupt their industry before they have the ability to react. The same number worry that it will take too long to embed new technologies. Each of these feared scenarios could be aggravated by imbalanced prioritization of security.

Fear factor

Business leaders fear being left behind.

Which of the following are your greatest fears when it comes to ensuring your technology infrastructure is fit for purpose?

(Ranked top 2)



Cybersecurity revelations from the Committed Investors

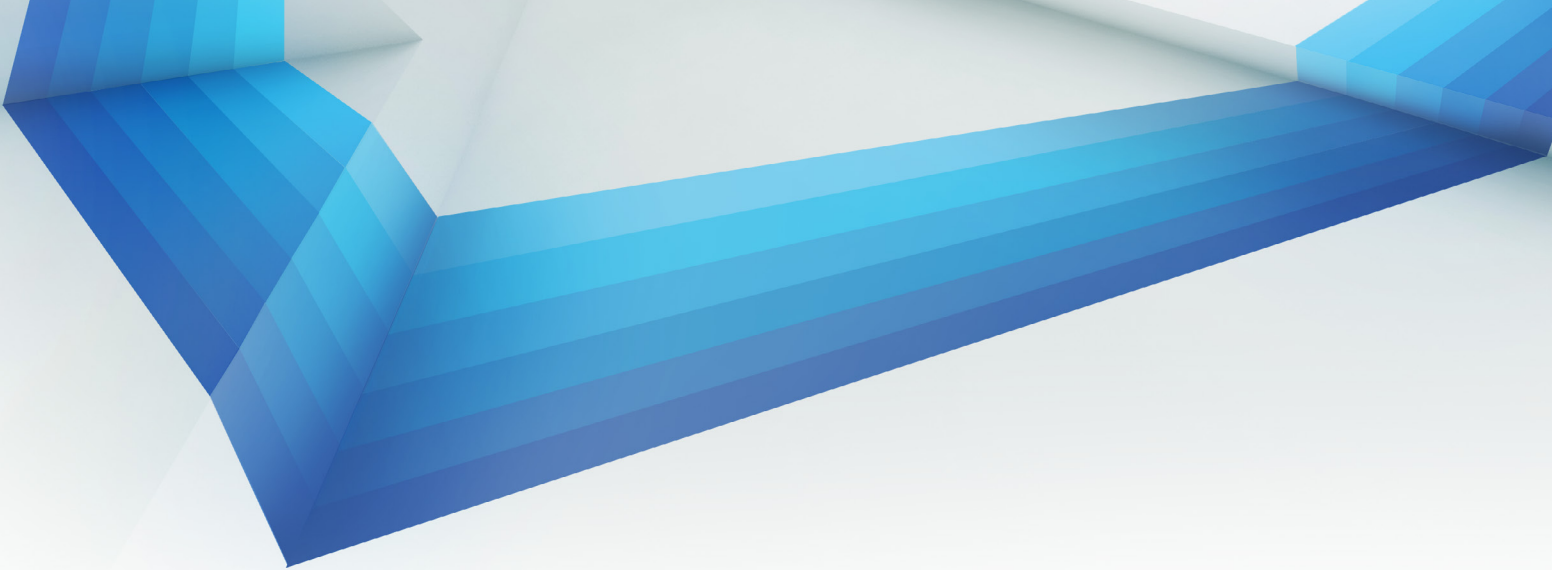
Deeper analysis of the Committed Investors and Hesitant Investors reveals valuable insights for businesses that are struggling to move beyond the demands of implementing robust cybersecurity.

Unlike Hesitant Investors, whose focus on data compliance and improving cybersecurity trumps all other strategic priorities, Committed Investors are plotting a successful course by spreading out their investments in technologies in a more balanced way.

Though Committed Investors are likely to have deeper pockets and a cybersecurity strategy that has been embedded for longer, smaller businesses could still benefit from adopting this systematic way of thinking. In doing so, it would help ensure their technology investments—whatever the size—work to build a business that is both secure and well positioned to maximize growth opportunities.

Organizations struggling to adopt this kind of evenhanded approach should engage a reputable third-party security provider. Together, they can create a cost-efficient and centralized security strategy to support business operations instead of hindering them.

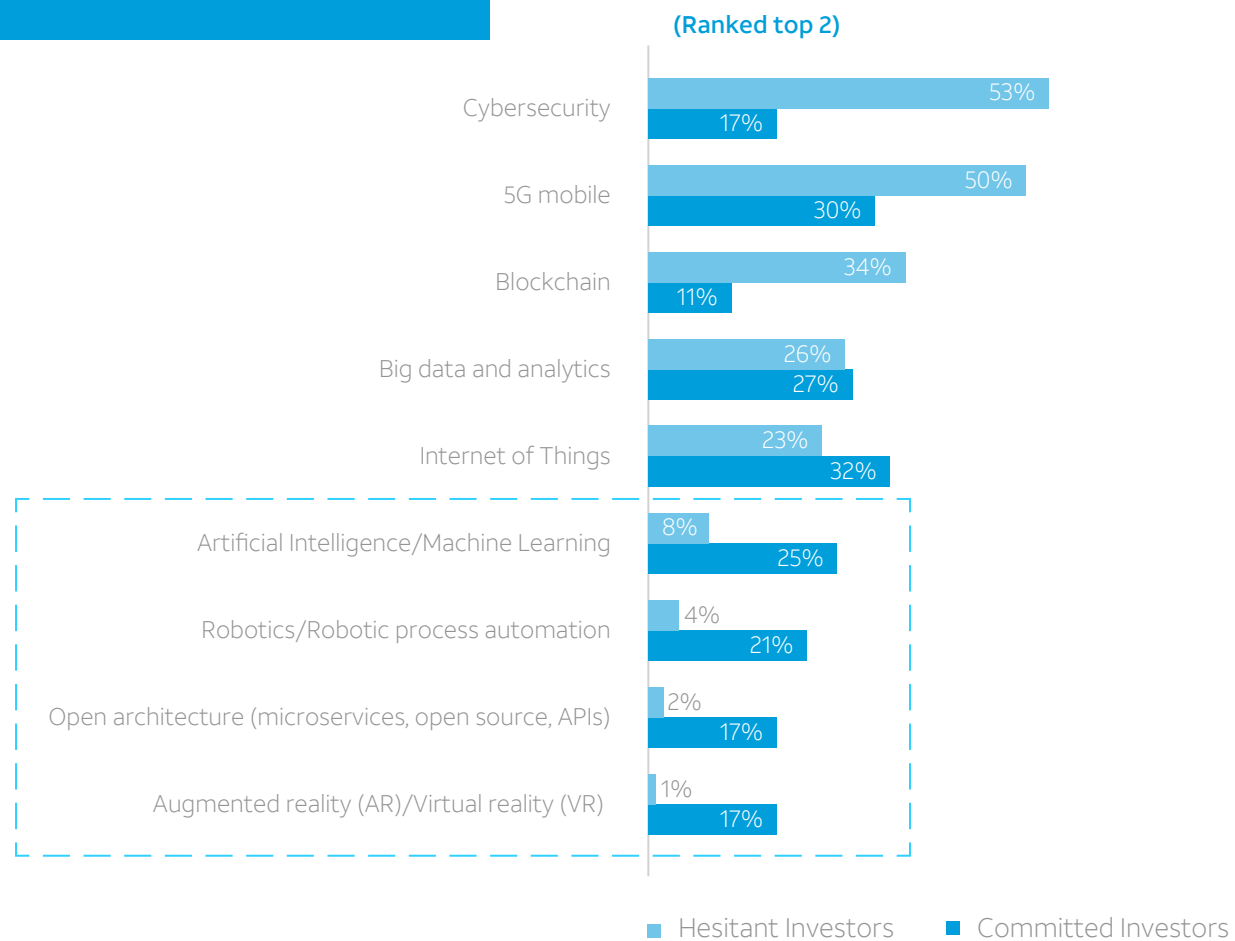
This approach also helps enable the business to focus on new technologies and innovation while the provider manages the ongoing cybersecurity strategy. If organizations choose not to reach out for support, their fears about being left behind by faster-moving competitors could become a reality.



Committed to winning

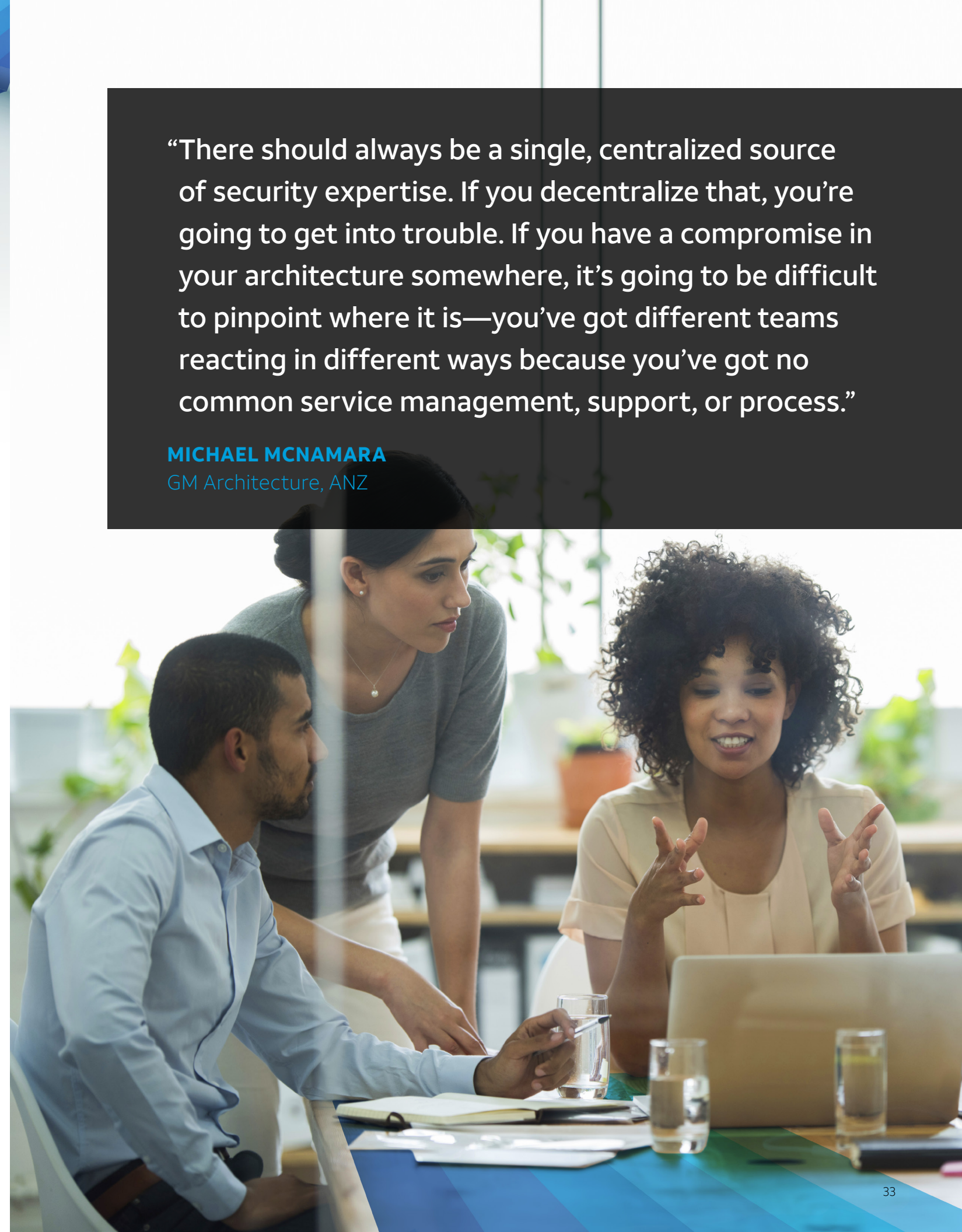
Committed Investors are able to focus on technologies that can help secure them competitive advantage.

Which are you expecting to be an investment priority over the next 3 years?



“There should always be a single, centralized source of security expertise. If you decentralize that, you’re going to get into trouble. If you have a compromise in your architecture somewhere, it’s going to be difficult to pinpoint where it is—you’ve got different teams reacting in different ways because you’ve got no common service management, support, or process.”

MICHAEL MCNAMARA
GM Architecture, ANZ



Infrastructure: Right path, wrong approach

Business is at a turning point. There is clear evidence that most business leaders are investing in future-facing technology infrastructures, but the survey reveals that many risk mishandling the transition—or they are already.

What is the right way to handle infrastructure transformation?

1. Double down on data

Draw up the processing plans required for effective data management before beginning transformation. A failure here could lead to the great data disconnect that some organizations are now experiencing.

2. Strike the right balance with security

This means investing in protecting the technology infrastructure, but not at the expense of all other areas. Businesses must ensure their focus on cybersecurity does not limit future growth opportunities.

3. Bring third-party expertise on board

Don't rely on in-house resources alone to create a successful transformation plan. Creation of a technology infrastructure is complex, so turn to trusted third-party providers that can help analyze, roll out, and maintain every part of the plan, and weave in cybersecurity as part of one holistic business strategy.

4. Commit to open architecture

Re-examine investment levels in OA. The technology is key to unlocking the full potential of an optimized technology infrastructure. OA enables businesses to build a customized set of services quickly and efficiently, sidestepping the pain points traditionally associated with monolithic architecture.

5. Bridge old and new

Adopt a hybrid approach for transitioning from legacy systems to the new technology infrastructure. A lack of clear planning at an early stage could create serious issues later as the new and the old technologies overlap, and even clash.

Clear strategy, heavy investment

The research has revealed an issue, however, that is greater than all the others highlighted in this report: the lack of a cohesive strategy underpinning the entire transformation process.

To enhance the chance that investments will pay dividends in the future, businesses should assess or reassess their strategies now—before green-lighting further investment.

Committed Investors are already showing the way forward and are enjoying improved business performance because of clear strategies and, crucially, heavier investment. This approach will help their vision of an optimized technology infrastructure become a reality instead of a bullet point on a never-completed action plan. Other companies should look to the Committed Investors and work to catch up.

For more insights, please visit: att.com/IntelligentBusiness



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