Maximize your data insights with AI

Chart your path to success by unlocking the power of your data

DELLTechnologies

Data, the differentiator

We are operating in an unpredictable, rapidly changing and frequently disrupted environment, while witnessing one of the biggest technological advances since the birth of the internet, generative artificial intelligence (GenAI). We are also surrounded by ever-growing mountains of data in an often-distributed landscape. The ability to harness data is critical, but what use is it if it cannot easily be accessed, processed, and leveraged? For these organizations, tapping into the capabilities of GenAI could be the difference between make or break.

The appetite – and demand – to maximize the value of this data and drive innovation is insatiable. When used correctly, AI and GenAI can fundamentally change the role and value of data, but with many organizations facing turbulent times, not all are set to fully capitalize on its capabilities.

At Dell Technologies, we believe tangible, positive change is achievable through innovation and action. And in today's rapidly evolving, distributed landscape impactful innovations are needed more than ever before. But how is it that some organizations can successfully turn their data into insights and action that drive meaningful, game-changing innovation while others cannot?

Dell Technologies' 2023 **Innovation Index** revealed a clear link between innovation success and organizations that have a mature data strategy, yet only 26% of ITDMs say all innovation efforts are based on data insights. Organizations that have established the right practices to leverage their data to power their strategies are more likely to achieve innovation.
New insights from our latest research, Innovation Catalysts, based on responses

from 6,600 IT and business decision-makers (ITDMs and BDMs) from 40 locations worldwide, uncovers that many organizations struggle to store, collect and protect their data. Let alone turn it into valuable insights to empower strategic decision-making and drive innovation.

Almost half of decision-makers say their organization could improve in adopting a data-driven approach to capture and realize innovation projects to drive successful innovation.

> *Thinking about business transformation and innovation, it all goes back to data. That's the fuel for possibilities. We're constantly looking at data and how to use it in a better way, getting to the right answers faster, but doing so is often easier said than done. What you have to do is start with the 'what's the one thing I can solve now, that frees people from routine work?' You start with that, adapt and iterate, and you've unleashed creativity at scale.*

Jaynene Hapanowicz, CTO & SVP Technology Transformation and Cloud Services, Dell Technologies

To keep up with ever-evolving data sets, technologies and security threats, organizations must modernize their infrastructure so it becomes smart, flexible and resilient. But the study reveals key challenges across people, processes and technologies which need to be addressed first.

Data is undoubtably a key differentiator required to spot and act on the right opportunities, as well as track their success. The question is, in today's turbulence, how can you maximize your data and innovate more smoothly?

In a three-part series , we will explore how organizations are innovating to drive business outcomes, what's blocking them, and how they can take advantage of new technologies like generative AI as an innovation accelerator. Following on from **Building your innovation muscle**, this report is the second in this three-part series, focusing on maximizing data insights.

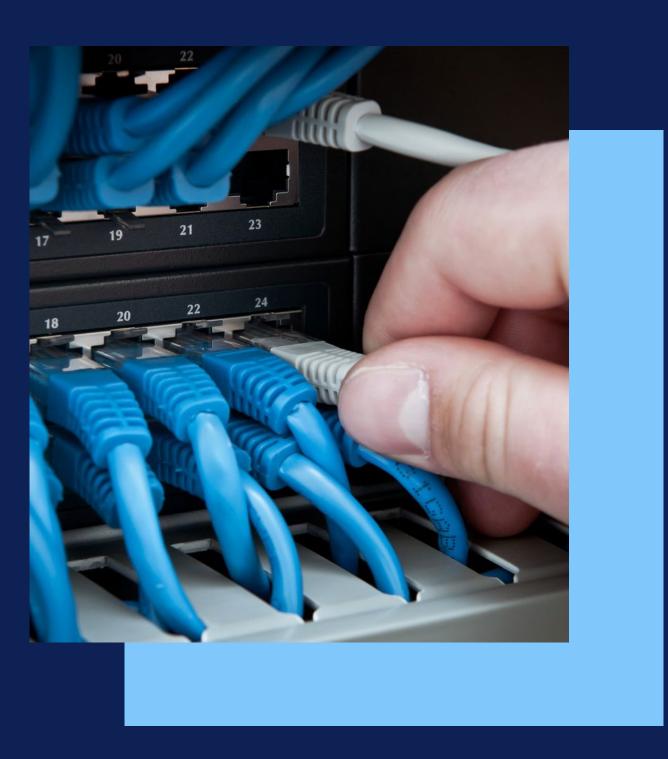### 1. Build your innovation muscle.

Building a reliable innovation muscle is not accomplished in a silo or in one-off initiatives. By building a close, regular and strategic partnership between IT and the business, organizations can better align their people, processes, and technologies to nurture human-machine partnerships and act on high-impact opportunities. Over time, this evolves into the organization's identity. And with GenAI as the biggest technology advance in decades, the potential to accelerate innovation across all aspects of life is huge.

2. Maximize your data insights.

Data is a key differentiator to spot and act on the right opportunities, as well as track their success. In today's distributed landscape, and to realize the potential of GenAI, you need an agile, secure and sustainable infrastructure from edge to core to cloud to properly collect, store, protect and act on data, wherever it resides and whenever you need it.

3. Embrace human-machine partnerships.

Empower your workforce with the skills needed to deal with this fast-paced and increasingly digital world – moreover instil confidence in them to deal with ambiguity, change and failure. With the emergence of GenAI, it's essential to have clear guidelines on how to use it responsibly and keep communication and ongoing training consistent. This is paramount for successful adoption. To support your employees in reaching new levels of productivity, provide them with AI-optimized, intuitive, collaborative, and secure technology.

A paradoxical reality

Organizations are facing accelerated speeds of change in their industries and know they need to leverage their data to innovate in new ways to keep pace. They appear surprisingly confident in their posture, with 82% claiming they are well-positioned competitively and have a solid strategy for success. However, this asserted confidence sits against a felt backdrop of insecurity and challenge. And this is just the beginning of an array of paradoxes. **Almost 1 in 2 are uncertain about the near-term future of their industry and 57% admit they are struggling to keep up with the pace of disruption.**

Looking at innovation leaders, they found ways to successfully drive innovation in an uncertain, rapidly changing environment, by maximizing their data's value to identify and act on high-impact opportunities immediately and with agility.

The data paradox

Data is extremely powerful, yet organizations struggle to achieve data's full potential.

Organizations understand that data is the digital currency for modern commerce and a key differentiator supporting innovation. However, the difficulty in collecting, storing, protecting, and acting on data across various sources creates challenges.

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The more data you have the more informed your decision-making should be, but that's the data paradox: organizations today are gathering data faster than they can use it. The path to innovation relies equally on both people and technology coming together to solve the data imperative: one without the other is like a canoe without a paddle.

Senator Sally Eaves, Global Strategic Technology Advisor and CEO Tomorrow's Tech Today

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Dealing with data can be increasingly complex and time consuming. In fact, only 1 in 3 organizations report they can currently turn data into real-time insights. Despite this, more than 4 in 10 claim they are ready for the bulk of their data to come from the edge in the next five years. Data – and its demand – is in abundance and growing daily; relentlessly created in massive volume every second, accompanied by employee and customer need for quality, only adding to the load.

Organizations do recognize its value, with more than 80% agreeing they need to make improvements to ensure employees can access or share data faster. However, reliability and accuracy are paramount; actionable insights utilized to drive innovation are dependent on valuable data, and the value of data is largely determined by its accuracy and reliability. Yet more than a third of respondents report that one of their biggest data management challenges is ensuring data accuracy, consistency, and reliability across different sources.

In addition, nearly 3 in 10 say they have limited or no access to the right data and this prevents them and/or their colleagues from driving innovation. The "right" data being the key word here. Its evident organizations need to prioritize data access, only then can their workforce be truly empowered. Until then, productivity, collaboration and organizational growth are stifled.

Of course, not all data is good data and difficulties in the ability to process, access and act on accurate data are impacting organizations' innovation potential. With almost all respondents admitting their organizations are facing data management challenges, it appears that issues, and their impacts, are mounting.

Top 5 data management challenges:

Protecting sensitive data (Personal Identifiable Information (PII) and Intellectual Property (IP)) from leakage and threats

Ensuring data accuracy, consistency, and reliability across different sources

Integrating data from various systems, applications, and formats to create a unified view

Managing growing volumes of data and scaling storage infrastructure accordingly

Providing timely and reliable access to data for users and applications

The security paradox

Organizations know how vital the right security is, but many face challenges with implementing a holistic strategy.

As the volume and sophistication of cyberattacks continues to grow, the inevitability of a successful breach is a reality of the digital age. And, unsurprisingly, data privacy and cybersecurity concerns are the second biggest challenge organizations currently face in driving innovation successfully. In our increasingly interconnected world, cyber threats have become the norm. **Eighty-three percent of organizations have been impacted by a security attack in the past 12 months**. And, while a similar proportion (82%) claim they are investing in solutions to reduce the attack surface of their IT ecosystem, three quarters of organizations report their security operations mostly consist of patch management.

Top 5 most common security attacks in the past 12 months

1. Malware
2. Phishing/ social engineering
3. Data breach
4. Cloud misconfiguration
5. Ransomware attacks

Deployment strategy for Zero Trust

We are adopting Zero Trust solutions in phases with the goal of full Zero Trust maturity	**26%**
We are implementing only the select Zero Trust capabilities that we think will have the greatest impact	**20%**
We are deploying Zero Trust principles only to select workloads	**18%**
We are implementing a comprehensive point-in-time Zero Trust rollout across our organization	**11%**
We are transitioning select workloads to Zero Trust clouds	**11%**
We are not pursuing a Zero Trust deployment strategy	**4%**
We are working toward compliance with the US federal mandate on Zero Trust adoption	**4%**

Clearly, just managing patches isn't enough.

A mature security posture is crucial for staying ahead of advanced attacks. Worryingly, 67% of organizations believe employees go around IT security guidelines and practices because they delay efficiency and productivity. And a similar percentage agree that insider threats are a big concern. Therefore, this includes providing employees with the tools and knowledge to help reduce internal threats.

Security must be built in. Yet just 4 in 10 strongly agree that their organizations emphasize buying technologies or applications with security built into them.

This underscores the importance of organizations planning for their worst-case cyber scenario with capabilities that don't just protect from threats, but also by building response and recovery protections for when a breach occurs. It's imperative to discard the old perimeter-based security model in favor of the "never trust, always verify" Zero Trust architecture which advances security maturity through continuous validation

Stakeholders, including the IT department and board level employees consider Zero Trust architecture to be important and **89% of organizations are pursuing a Zero Trust deployment strategy**, but most are in the adoption and implementation phase. It is imperative that organizations advance their cybersecurity and Zero Trust maturity to combat the evolving cyber threat landscape while not stifling innovation.

The IT infrastructure paradox

Having a modern IT infrastructure is critical for innovation, yet many organizations have outdated infrastructures.

Every contemporary organization knows that investing in modern scalable technology is imperative in today's age; it is the #1 improvement area for innovation. And yet, outdated and overly complex technology environments is among the top 5 challenges for innovation. Organizations are struggling to leverage their IT infrastructures in their quest for innovation and it is clear to see why.

According to ITDMs, organizations are using various combinations of public and private clouds to uphold their IT infrastructure. While there are important advantages to the different approaches, integrating private and public clouds introduces a myriad of obstacles. There are technical, operational, and security challenges that demand meticulous planning, ongoing optimization, and a skilled IT workforce to navigate the complexities of diverse cloud ecosystems effectively.

And organizations are feeling the pain, highlighting the following top 5 challenges when building a multicloud strategy to support innovation:

1. Lack of necessary skills across workforce
2. Concerns about inadequate security or governance capabilities
3. Lack of budget to scale as needed
4. Adopting new/emerging capabilities without an overall strategic view
5. Lack of interoperability between cloud platforms

Despite this, organizations are ready to optimize their multicloud environments to overcome these challenges. The top 5 areas of improvement for multicloud environments:

1. Simplifying IT environments
2. Increasing security posture and minimize risks
3. Increasing operational agility
4. Improving environmental sustainability
5. Driving cost efficiencies

In the face of constant change and rapid technological disruption, organizations recognize the pivotal role their data plays in their ability to innovate. Drive and ambitions are big; however, organizations are admittedly struggling with the challenges of collecting, storing, accessing, protecting, and acting on data effectively. As data volumes – and demand – relentlessly multiply, cybersecurity threats advance and IT infrastructures become increasingly complex, challenges will likely not subside. And with technology advancements like generative AI thrown into the mix, how will such challenges fare?

Dell and Microsoft have a longstanding partnership designed to help organizations unlock innovation across their IT footprints. As we navigate the dynamic landscape of technology, the need for a robust hybrid cloud strategy becomes pivotal for organizations looking to take advantage of the transformative capabilities of AI. It is not merely a choice; it's a strategic imperative to stay ahead in the ever-evolving digital ecosystem.

APEX Cloud Platform for Microsoft Azure is collaboratively engineered with Microsoft to optimize and extend Azure hybrid cloud operations on-premises. The platform includes 4th generation Intel Xeon™ Scalable Processors and NVIDIA GPUs supported hardware infrastructure which empower organizations to unlock innovation from emerging technologies like AI. The deep, cross-layer integrations between the layers of the Dell and Microsoft technology stacks deliver a secure hybrid cloud foundation for organizations to take advantage of emerging technologies.

> *We are thrilled to partner with Dell in helping shape the future of technology. The collaborative effort towards establishing a secure adaptive cloud environment underscores a joint commitment in driving innovation and unleashing the potential of AI for a competitive edge in the digital era.*

Bernardo Caldas, Microsoft Corporate VP Azure Core OS & Edge Infrastructure Product Management

Microsoft

The impact of GenAI

Generative AI (GenAI) is seen as the greatest technology advancement since the birth of the internet. It presents seemingly endless opportunities while simultaneously magnifying the data, security and IT infrastructure challenges seen above. Despite this, organizations appear optimistic, and rightly so, with **81% agreeing that AI and GenAI will significantly transform their industry**.

GenAI's transformative power has the potential to extend well beyond industry level, filtering down to revolutionize individual organizations – and decision makers know it. In fact, they see the use of AI/GenAI to transform their organization as one of their most important innovation goals for 2024, a belief more likely to be held by ITDMs as opposed to BDMs. Cost savings, future-proofing the organization and increasing revenue also feature among the most important goals, all of which could, in part, be achieved by the untapped potential of GenAI.
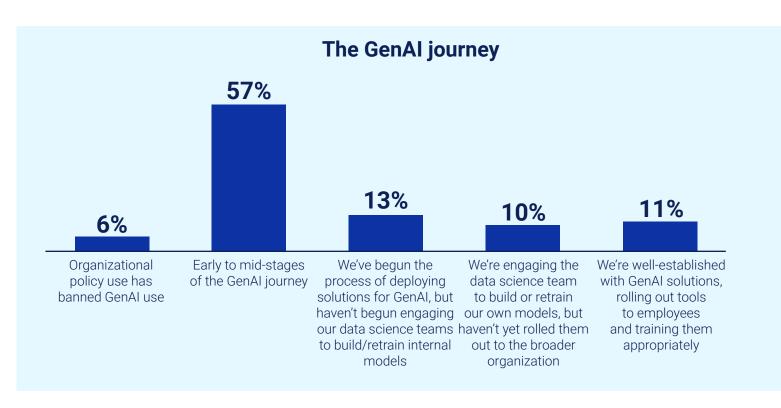
Around half of respondents believe that the technology could grant their organization significant or transformative gains in productivity, IT security and the streamlining of processes. But crucially, these benefits aren't localized to a single business area. If adopted correctly, they would be leverageable throughout the whole organization.

It's perhaps no surprise given the challenges organizations are facing surrounding their IT infrastructure and security posture that respondents feel GenAI can help alleviate the pressure. In fact, 39% believe the technology should first be used to streamline IT operations, while 36% say the same for strengthening security posture.

As the landscape shifts, now is not the time to become complacent, but to implement strategies that embrace these innovative technologies that can allow businesses to excel. Many organizations have already begun their GenAI journey, but more than half are still in the early to mid-stages, ranging from having no strategy in place, to piloting or not yet deploying solutions. To fund these new endeavors, organizations are most likely leaning towards using their existing IT budget to prioritize AI projects, while almost 1 in 3 will create a dedicated budget for AI projects.

The GenAI journey

6%	57%	13%	10%	11%
Organizational policy use has banned GenAI use	Early to mid-stages of the GenAI journey	We've begun the process of deploying solutions for GenAI, but haven't begun engaging our data science teams to build/retrain internal models	We're engaging the data science team to build or retrain our own models, but haven't yet rolled them out to the broader organization	We're well-established with GenAI solutions, rolling out tools to employees and training them appropriately

So, what is holding organizations back or slowing them down?

The challenge of GenAI

True of any emerging technology – although this one seems a game changer – adopting GenAI is not a simple, challenge-free endeavor. Inviting and integrating a new capability into an existing environment comes with risks and uncertainties, both operational and data related.

Decision-makers tell us their top operational risk is security, followed by concerns over bias and ethics, lack of development and integration experience, emerging regulations and, of course, cost.

Data-related concerns for GenAI may be even more acute as they are tied to leveraging a mature data management strategy, itself a fast-changing discipline. Ninety-four percent of respondents anticipate setbacks in data identification, preparation, tagging, storing, accessing and transforming data for insights, which are all paramount to successful AI/GenAI use cases.

The top 5 data challenges cited:

1. Ensuring data privacy/security (protecting from data leakage/loss of IP)
2. Limited data availability/transparency (i.e., unable to use multiple/all data sources across sources and people, up and down the supply chain)
3. A lack of internal expertise in data science and AI
4. Handling sensitive or private data in compliance with regulations
5. Dealing with messy or incomplete data that requires cleaning and preprocessing

It is no surprise the top operational and data challenges identified are both security related. **Sixty-eight percent of organizations admit they fear GenAI will introduce new security and privacy challenges, on top of what they face today**.

As GenAI encompasses systems that can understand, learn, adapt, and implement knowledge across a broad array of tasks, these powerful capabilities unfortunately enable GenAI also to discover emerging vulnerabilities at an unprecedented pace, allowing malware to adapt and evolve in real-time, escalating the prowess of threat actors. GenAI systems could become targets for adversarial attacks and their functionality can be used maliciously if not appropriately secured. Properly securing these environments begins by implementing trusted devices and trusted infrastructure that have strong access control measures to prevent unauthorized access and the potential misuse of the system.

Additionally, because GenAI systems rely on vast amounts of data for learning and decision-making, ensuring the privacy and integrity of this data is crucial. Organizations are aware of this, with **82% agreeing that data is the differentiator and that their GenAI strategy must involve using and protecting that data**. In order to ensure the security of the data, capabilities such as data classification, encryption, secure data storage, data protection and transmission techniques need to be in place. Putting in place regular audits, bias mitigation techniques, and ethical guidelines are needed to alleviate these biases.

It might then be expected that 68% are concerned about the closed box nature of AI and its potential for bias, IP infringement, and other risks they don't understand. One of the main recommendations for responsible use of GenAI is to make sure that AI tools respect users' expectations of privacy and security. This conscious awareness is valuable and will be key in the transformation journey through GenAI.

All of this points to the fact that GenAI has the potential to be a large threat to our digital worlds. However, it is not all doom and gloom.

The call for regulations

When it comes to AI policy and user interaction, considered thinking is needed as 82% say that customers/citizens will demand transparency on the use of GenAI. Additionally, 77% of respondents agree that the organization, rather than the machine, the user or the public, is responsible for any AI malfunction or undesired behavior. The call for regulations is great; 83% agree that receiving AI regulations right now is important to maximize the potential for AI for generations to come. And there is no time to waste with 74% willing to put their own GenAI governance into place rather than wait for government regulations.

The opportunity for GenAI and data

There may be an understandable concerns around GenAI, especially when it comes to feeling in control of your data. **Almost 3 in 4 organizations agree their data and intellectual property are too valuable to be placed in a GenAI tool where a third party may have access**. For this reason, it is to be expected that when determining how to use GenAI for their business, 78% of ITDMs prefer an on-prem or hybrid model. In fact, for those organizations who have started their journey, 75% are using private/on-prem solutions over public cloud providers to ensure that GenAI applications are properly secured and that the data they process is protected.

The value of your GenAI models is profoundly impacted by the data they're provided. With good data, you can unlock everything that comes next. Data quality, privacy and availability are the key criteria organizations consider when optimizing their data for GenAI. **Seventy-nine percent agree that retaining control of their data, by bringing AI to their data on-prem, creates more value for their organizations because they control it, the data is fresh and they have secure access**. These advantages can help optimize GenAI outcomes, enabling massive data sets to be analyzed at scale, improving decision-making and identifying areas for innovation.

Organizations feel the promise of GenAI; more than three quarters are confident they can design a GenAI solution to meet specific real-time needs and avoid the pull of data gravity into monolithic language models. The promises are immense, organizations are seeking these opportunities and want partners to help them get there.

Top 5 GenAI requirements for a technology partner:

1. Services that will help advise, implement, train and scale AI into my data for better efficiency and operations
2. The right infrastructure that can enable GenAI technologies no matter where we are in our AI journey
3. GenAI-ready devices with the compute, memory and storage to handle heavy AI development and deployment
4. Effective data governance and secure access controls
5. The latest hardware and software that enables the automation needed within everyday processes

The opportunity for GenAI and security

In general, artificial intelligence is already broadly used in the cybersecurity space to great effect through for instance predictive analytics, real-time detection, threat modeling and vulnerability assessment that improve security efficacy. Now GenAI opens novel avenues to protect businesses in an ever-evolving threat landscape, making it the next crucial ally in cybersecurity.

Eighty-two percent of organizations agree that data is the differentiator and their GenAI strategy must involve using and protecting that data. Organizations are optimistic of how GenAI's capabilities could help to support their security strategy; almost all ITDMs believe that GenAI could be used in IT security to optimize and/or improve their security posture. In fact, decision makers predict the following GenAI use cases to rise to the top to optimize and or improve their organization's security posture:

01	**02**	**03**
Improve efficacy of threat detection and response (detect anomalies in network traffic or data patterns, unusual user behavior or suspicious email content, enabling quicker identification of threats like malware, phishing attempts, or insider attacks etc.)	Assist with security policy development (micro segmentation optimization, role-based access determinations, automating risk analysis, etc.)	Design personalized security awareness training for employees based on their role, past behavior, and common threats they might face

There is no question that GenAI has the ability help companies drive their innovation and security objectives. That said, it represents a dual-edged sword. On the one hand, it brings new challenges that require organizations to rethink and evolve their cybersecurity strategies. On the other hand, it promises improved threat detection and response, predictive capabilities, and operational efficiency.

Additionally, GenAI technology may create new and easier ways for security personnel to interface with networks and identify threats, thereby helping companies to mitigate the security skills gap by freeing up human security personnel to focus on more strategic and complex tasks. It may also allow less technical security resources identify and address threats. The key lies in utilizing its benefits while proactively addressing the risks, through robust security measures, continuous monitoring, regular updates and patching, and an ever-evolving approach to data privacy and ethics. As we step into the GenAI era, the relationship between AI and cybersecurity will continue to be one of symbiotic evolution.

A Chief AI Officer's perspective

While it's easy to get excited about the possibilities generative AI can afford your business, many leaders tend to put the cart before the horse and introduce new tech without considering the effects these tools will have on day-to-day operations. Creating a holistic strategy that defines the benefits and long-term goals for your business with GenAI will provide a guide for the teams on the ground.

As the Chief AI Officer, I work with our AI Center of Innovation and Excellence to focus on the most important and time-sensitive AI uses cases at Dell. I work with the team to help set strategy, inform, advise, advance and govern our most critical AI priorities. But, it's everyone's responsibility to push advancements in and with AI.

Consider how GenAI will integrate with existing tools and processes, make sure that adequate training and governance programs are in place to avoid the creep of shadow AI. Most importantly, make data your differentiator.

GenAI is only as strong as data allows it to be. Your organization will find the most value if you connect AI tools to a wide swath of internal data, allowing for more robust solutions that consider every conceivable information point and a stronger data chain down the line.

Last but not least, practice proper data hygiene. To make GenAI successful for your organization, it's important that your data management practices are up to standard. The collection and preparation of information for ingestion into these tools can strengthen or weaken the outputs and therefore the value of your results.

While these steps can be time-consuming, especially if performed for the first time or on years' worth of information, you'll have a more seamless transition to working with AI and getting accurate, actionable results.

Jeffrey Boudreau, Chief AI Officer at Dell Technologies

Achieve your goals sustainably

There is no question sustainability in organizations is important. Although, it often turns into a nice-to-have when other needs take priority.

However, as the landscape evolves, organizations are increasingly prioritizing environmental sustainability within their innovation agendas, even amid competing financial and organizational goals. This growing recognition indicates a maturing understanding of sustainability's importance to an organization's future. While 63% anticipate challenges in aligning with broad ESG standards, this underscores proactive awareness and a growing commitment to advancing sustainability efforts within their industries.
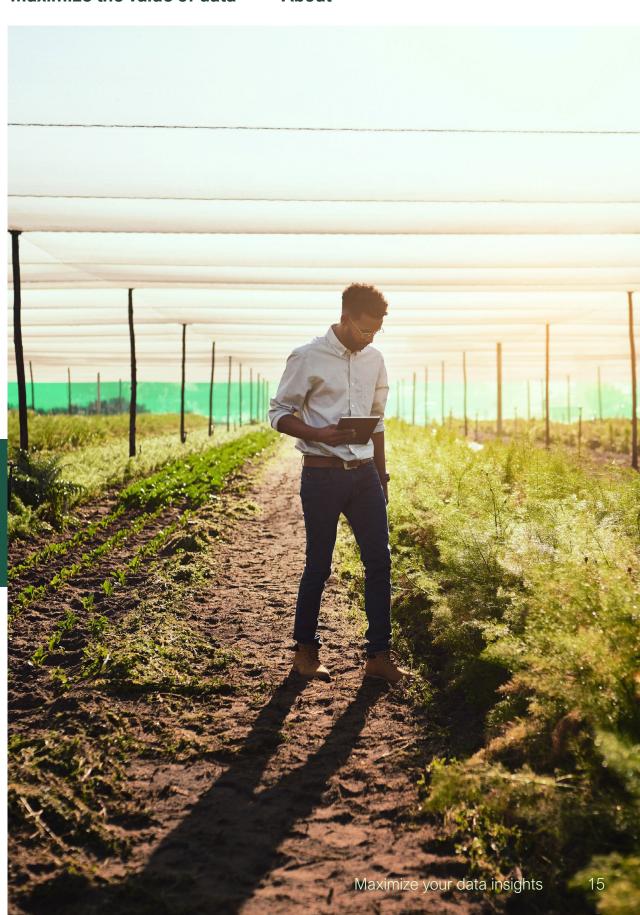
Organizations are clear on their most important environmental sustainability priorities, including:

- Procuring/utilizing goods that are more sustainable
- Improving energy efficiency
- Using technology/AI/ML/Data Science to inform and optimize sustainability efforts

These priorities are not just standalone initiatives; they embody a collective vision. It's inspiring to note that 79% affirm having a clear sustainability roadmap for their company, complete with defined goals aimed at reducing their carbon footprint.

Additionally, around 8 in 10 organizations say sustainability is approached in the following ways:

- Prioritizing the use of sustainable products and solutions
- Defining time-bound plans to properly retire or recycle end-of-life IT equipment
- Investing in products with extended lifecycles (repairability, upgradability, durability)

In fact, sustainably focused activity appears to be in motion for many. Seventy-nine percent of ITDMs say they are experimenting with as-a-Service solutions to manage their IT environment more efficiently to reduce their energy costs and carbon footprint. Around three quarters of ITDMs say they use alternative cooling solutions to help them reduce energy use in the data center (e.g., air cooling, liquid cooling). And a similar proportion of decision makers report they are actively moving their AI inferencing to the edge to become more energy efficient (for example, by using smart buildings).

While these are all promising signs, there is room for improvement. **Fourty-two percent of organizations admit that driving environmentally sustainable innovations is an area in need of improvement**. And the majority are not leveraging their data to its fullest potential; just 38% use data to understand and reduce their environmental impact and inform their innovation goals.

The interplay with GenAI also appears to be adding complexity to both situations. GenAI's potential to address climate change is an exciting and promising avenue, but one that warrants thoughtful consideration and mitigation of its perceived challenges. Almost 3 in 10 say that environmental concerns about the increased energy use (and associated greenhouse gas emissions) needed to train AI models is holding them back from embracing GenAI. In addition, nearly 6 in 10 believe using AI will compromise their environmental sustainability efforts.

Despite these concerns, organizations want to hold themselves accountable and are seeking external support in their journey. **Seventy-three percent say they need the help of a third-party partner to achieve their sustainability goals**. While also looking to these partners to uphold sustainability standards; 81% expect their tech vendor to have transparent and clear sustainability goals and demonstrate accountability for the emissions generated across their value chain.

Driving a sustainable future together

At Dell Technologies, we believe sustainability and digital transformation is not an "either/or" decision. In fact, technological progress is a prerequisite for companies seeking to meet ambitious climate goals. We are tech optimists – and we're also pragmatic. We understand the best innovations not only advance our technological capacity and allow us to optimize data but do so while supporting more energy efficient and sustainable futures.

In fact, technology can create more sustainable businesses and communities for the planet. That's why we're committed to accelerating climate action and circular design to achieve our sustainability goals and help our customers do the same. With a proven track record in sustainability, we offer a range of solutions that enable you to use technology to take climate action, implement circular IT practices, and lower your emissions, energy consumption and carbon footprint across your operations.

Together, we can create a more sustainable future for our planet.

Improving global supply chain efficiency and industrywide sustainability

To make Singapore a global leader in maritime shipping, logistics and environmental sustainability, PSA Corporation is building Tuas Port — the world's largest fully automated, intelligent and sustainable port. Successful completion of the port also required faster development of highly reliable and scalable AI-powered applications as well as other types of services that enable, for instance, hands-free container loading and unloading, faster docking times and reduced fuel consumption as well as supply chain and carbon footprint efficiencies for PSA as well as its suppliers and customers.

To meet its software development goals, PSA required a multicloud infrastructure with greater flexibility and agility than its existing solutions. Not only did developers want faster, easier access to compute, storage and software services, but IT staff also needed to spend less time on manual administrative tasks. PSA met its requirements by partnering with Dell Technologies and building a software-defined data center (SDDC) that supports its own multicloud solutions. The solution allows PSA employees to develop and deploy applications onto Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) with unprecedented ease—regardless of location—and gain increased insights, controls, and access to virtualized platforms. The result? Greater data usage, hardware utilization, and higher operational efficiency.
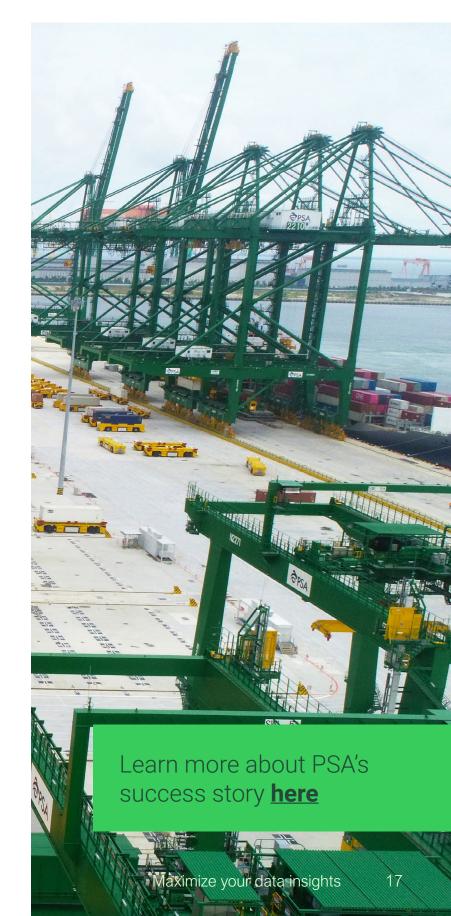
As PSA further develops the Tuas Port, they are also using its scalable development framework and multicloud solutions to advance an industrywide supply chain automation initiative it calls the Internet of Logistics (IoL). With an overarching goal of promoting greater collaboration between supply chain providers, IoL enables the sharing of Data-as-a-Service and SaaS offerings that drive global supply chain efficiencies as well as carbon reduction strategies.

> *Everyone cares about the health of the world, but no single business or government can solve our environmental issues. PSA is uniquely positioned to drive a fundamental change in creating intelligent logistic ecosystems with our multicloud that's built with leading technology platforms from Dell Technologies.*

Vee Leung Ho, Head of Regional I.T. (SEA), PSA Corporation

Learn more about PSA's success story **here**

Maximizing the value of data

AI is transforming how we work and innovate. With hundreds of use cases, organizations must provide the right infrastructure and right environment for all of them. This requires the right data, strategy and a smart, flexible and resilient IT infrastructure to take proof of concept to proof of productivity. Maximizing the value of your data and adopting a data-driven approach will power your organization's innovation potential, aiding success in the future.

And you don't need to do it alone.

With Dell Technologies as your trusted partner on your journey to a modern data infrastructure, you'll overcome barriers to innovation, uncover new possibilities, reduce risks and shorten time to value.

Supporting you at the edge, in the office, the data center, and even the public cloud, we have the broadest GenAI solutions portfolio that meets you where work gets done, so you can ensure every environment and every user can make the most out of the GenAI opportunity.

Together, we will maximize the value of your data and accelerate from ideas to innovation, faster.

Learn more at **Dell.com/InnovationCatalyst**

Research methodology

Dell Technologies commissioned independent market research specialist Vanson Bourne to conduct this research, called Innovation Catalysts. It is a continuation of last year's **Innovation Index**. Instead of benchmarking the status of innovation across organizations, it dives deeper into organizations developing their own innovator DNA, leveraging the right data and insights, and putting people first.

The study surveyed 6,600 respondents from organizations with 100+ employees from across the following regions: North America, LATAM, EMEA, APJ and Greater China. These organizations are from a range of public and private sectors.

All respondents either drive or influence innovation in their organization. Of the total number of respondents, 3,330 are IT decision-makers (ITDMs) and 3,330 are business decision-makers (BDMs).

The interviews were conducted online and via telephone in September, October and November 2023 and were undertaken using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate.

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Dell Technologies helps organizations and individuals build their digital future and transform how they work, live and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the data era. **Dell.com**

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