Blaze a trail with
Intelligent Innovation

How innovative storage technologies are fueling success

Introduction

"You can innovate, but without any intelligence behind it, it probably isn't as effective... in today's world that intelligence can be data-driven."

CIO, Healthcare (private and public), North America

Data is by far one of the most powerful tools that organizations have at their disposal. And today, organizations are collecting more data than ever before.

Organizations have the opportunity to use this data to intelligently ground their innovation decisions, especially considering that our surveyed **IT decision makers (ITDMs) predict that innovation will boost their global revenue by an average of 11% over the next two years.** These insights can impact every aspect of the business, providing a distinct competitive advantage.

Data can be used in a number of different ways and can provide more intelligent decision making, internally and externally. For example, organizations can enhance the customer experience by delivering innovative technology solutions that make their customers' lives easier. Equally, the same ethos can be applied internally when looking at the employee experience.

Ensuring data is properly stored and protected is vital to maximizing its value across the organization. **Therefore, intelligent storage capabilities to proactively predict, detect and resolve storage issues are essential for every organization to be data-driven.**

With timely and seamless access to data insights anywhere they need them, employees are empowered to take their innovation further and make better, informed decisions. An IT director from the retail and consumer products sector agreed that *"we're able to impact the organization based off our innovation approach to data analytics and data intelligence"* (IT Director, retail and consumer products sector, North America).

Any gains made in innovation can in-turn feed back into the data cycle, enabling organizations to generate even richer data, which can continue to further feed into their innovation strategies.

This paper, based on independent global research of 4,300 IT decision makers (ITDMs) across organizations with 100-10,000+ employees, looks to explore:

» **The role of innovation in organizations in relation to intelligent storage solutions**

» **The effects of innovation efforts on business and IT outcomes, related to intelligent storage solutions**

Throughout this paper, we will be showing how the results differ by both ITDM personality and where organizations are on their innovation journey. Read on to find out more...

Which IT Decision Maker are you?

While they all share similar objectives, the ways ITDMs approach tasks, react to situations, and of course, innovate can be very different. We asked our respondents a series of statements, and categorized them into the following personalities based on their responses.
Look out for these icons that highlight how the different personalities approach innovation.

THE CHAMELEON	THE NAVIGATOR	THE ADVENTURER	THE JUGGLER	THE THINKER

14% of ITDMs

Keen to share experiences and utilize the strengths of their team, the chameleon knows when, and how much, to lean on their support network.

Strengths: Good at seeing the whole picture, will discuss and generate new ideas and innovations with the people around them.

Weaknesses: Can find it challenging to manage different teams' priorities as they want to take on-board all views and make them happen.

16% of ITDMs

Always thinking into the future, the navigator likes to problem-solve and think strategically – looking to get closer to their goal with each step.

Strengths: Good problem-solving skills, thinks logically and carefully about their next move.

Weaknesses: Can find day-to-day issues (inefficiencies, skills gaps, inflexible budgets etc.) frustrating as they stand in the way of their long term goal.

14% of ITDMs

They are enthused and impassioned in everything they do and will stop at nothing to see their organization's vision realized.

Strengths: Goes out of their way to understand new technologies, trends and techniques and isn't afraid to push boundaries in making them a reality.

Weaknesses: Can be frustrated by small details – works better by focusing on the final big picture, rather than how we get there.

7% of ITDMs

So many fantastic ideas in their heads, it's tricky to know where to begin. Once that decision is made, jugglers stick it through to the end, ensuring it's as successful as it can be.

Strengths: They are 'ideas' people, always thinking of something else to explore, or taking on other areas of responsibility that they know will strengthen their business.

Weaknesses: Sometimes, their plate is so full, that balancing those priorities becomes overwhelming.

12% of ITDMs

There is a lot to take on board in a modern organization, and the thinkers would rather have all the information before they rush into any decisions.

Strengths: Will take their time to make sure everything is right before proceeding with a decision.

Weaknesses: Can be easily influenced by other stakeholders and change their mind quickly on what the best course of action is.

Innovation journey

Each organization is at a different stage in their innovation journey. We analyzed responses from participants and placed their organizations at different points on that journey. The percentages to the right show the breakdown, from those just starting out (inhibitor organizations) to those who are using innovation to their utmost advantage (pioneer organizations). We will be using these categories throughout the paper as a point of analysis and to show how focusing on innovation can be a key differentiator.

Pioneer organizations welcome innovation at every level. The majority of their IT departments adopt innovation into everything they do. Consequently, they experienced a marked improvement in business areas.

Pioneers 9%

Igniter organizations are close to unlocking their innovation's full potential. Innovation is favored by more than half of their IT department which has positively impacted several business areas.

Igniters 53%

Inquisitor organizations are slightly further ahead than inhibitors and as the name suggests, have started to investigate innovation and how it can best benefit their organization.

Inquisitors 36%

Inhibitor organizations are at the very beginning of their innovation journey. Innovation is likely only embraced by the minority of their organization's IT department and as a result, innovation has had a limited impact.

Inhibitors 2%
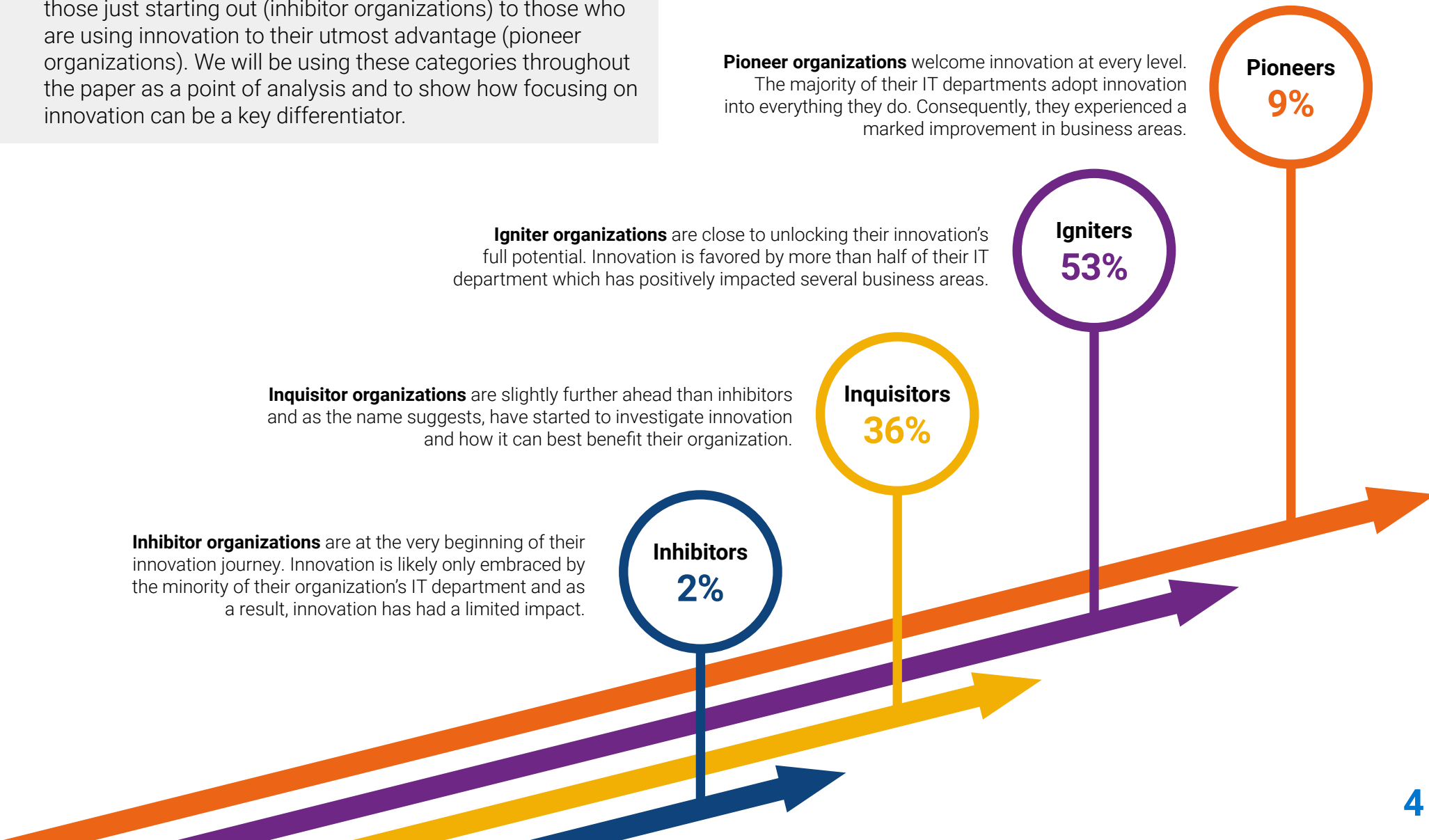
92%

of surveyed respondents believe that they **require better tools** in order to predict storage and security capabilities and to address issues proactively

94%

of ITDMs report that they **experience challenges** when it comes to managing their storage

82%

of pioneer organizations' innovation efforts are **influenced by data and insights** on average

46%

report that **using predictive insights to detect/resolve issues before they arise would help** their organization be more innovative

22%

Average **positive impact** experienced by pioneer organizations when using current technology to improve their ability to generate value from data

18%

Average **increase in the generation of real-time insights** for pioneer organizations who have invested in a storage solution

19%

Average **improvement in reporting accuracy** for pioneer organizations who have invested in a storage solution

21%

Average **downtime reduction** for pioneer organizations who have leveraged insights and analytics to monitor and predict storage capacity issues

22%

Average **data loss reduction** for pioneer organizations who have leveraged insights and analytics to monitor and predict storage capacity issues

The challenges
of storage

In our current climate, where data is currency and protecting it is paramount, being reactive to storage issues isn't an option. Allowing storage issues to occur wastes time, resources and money for any organization, as well as potentially risking data loss or downtime.

Most organizations (92%) believe that they require better tools in order to predict storage and security capabilities and to address issues proactively. Igniter organizations are the most likely (93%) to report this to be the case, signaling they've reached a stage in their innovation journey where tackling storage issues is crucial for them.

Respondents from APJC are the most likely (95%) to agree that they require better tools to predict storage and security capabilities, with those in North America a close second (93%). From a sector perspective, it is those from media and entertainment (97%) and healthcare (96%) who are the most likely to require better tools, while those in the IT and technology sector are the least likely to agree (88%), highlighting that they have perhaps already put focus onto this area.
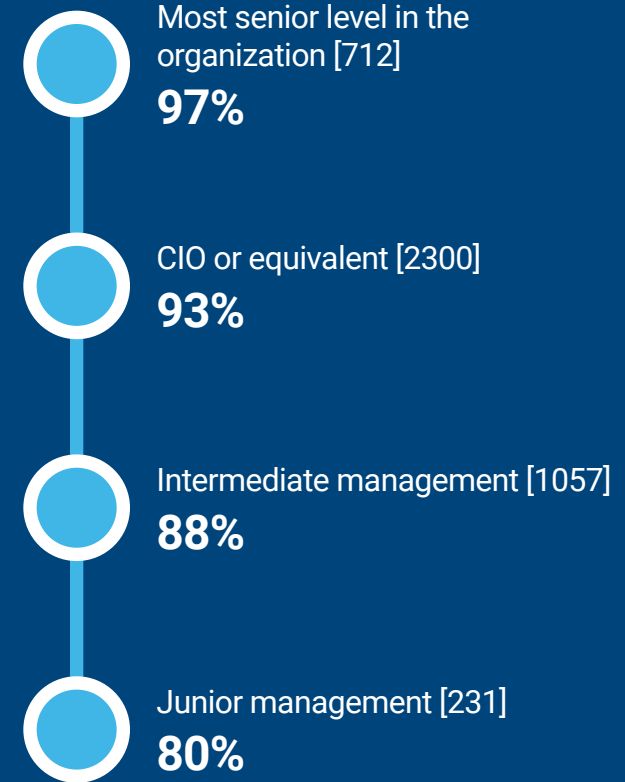
From a seniority point of view, it is those more senior in the organization who are more likely to agree with this statement versus those in more junior management roles. This sheds light on a potential disconnect between the more senior and junior members of the management team.

Navigators need better tools
When it comes to looking at personality type, it is the navigator who is the most likely to agree with this statement (94%) highlighting that their problem-solving nature appreciates the proactivity that would come with such a tool.

Percentage who agree that...
"My organization requires better tools in order to predict storage and security capabilities and to address issues proactively"

Most senior level in the organization [712]
97%

CIO or equivalent [2300]
93%

Intermediate management [1057]
88%

Junior management [231]
80%
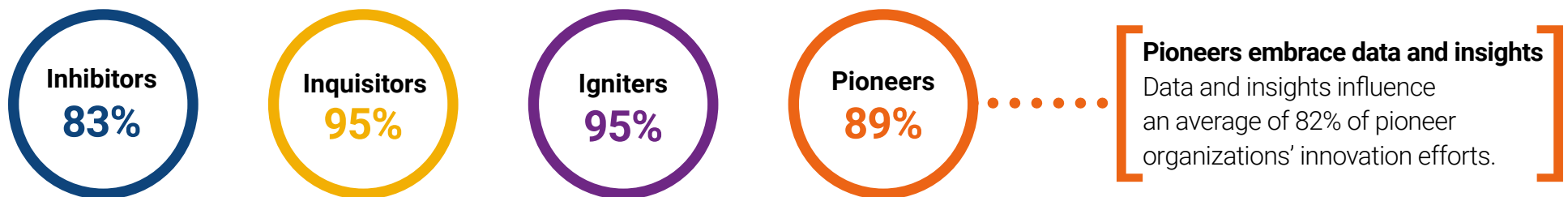
Challenges are driving a push to improve

It is clear that many organizations want to see improvements in their predictive capabilities around storage, likely due to the challenges they face in this area. **In fact, the vast majority (94%) of ITDMs report that they experience challenges when it comes to managing their storage.** At a global level, these challenges include the complexity of processes and/or legacy technology (38%), keeping pace with the realities of data (35%) and a lack of flexibility and availability to support all workloads (34%).

Inhibitor organizations are less likely to cite challenges with their storage than other more mature organizations. This is unusual as this group is generally more likely to experience challenges versus those who are further along the innovation journey. This indicates a lack of awareness around blockers and is likely to mean there is also a lack of cohesion or innovation around how to approach the challenges that they *will* be facing.

The value and influence of data

Inhibitor organizations are less aware of storage challenges as they perhaps don't appreciate the value their data can provide. These organizations report that data and insights only influence an average of 21% of innovation efforts, versus 63% globally and 82% for pioneer organizations. **As they improve in this area and incorporate the right IT tools, their challenges will evolve to mirror those further along their innovation journey.** On the other side of the coin, the pioneer organizations are more likely to recognize the challenges they face around storage. They are also more likely to be doing something innovative to solve them, and, in turn, see results.

Percentage who experience challenges when managing their organization's storage - split by innovation maturity

Inhibitors 83%   **Inquisitors 95%**   **Igniters 95%**   **Pioneers 89%**

Pioneers embrace data and insights Data and insights influence an average of 82% of pioneer organizations' innovation efforts.
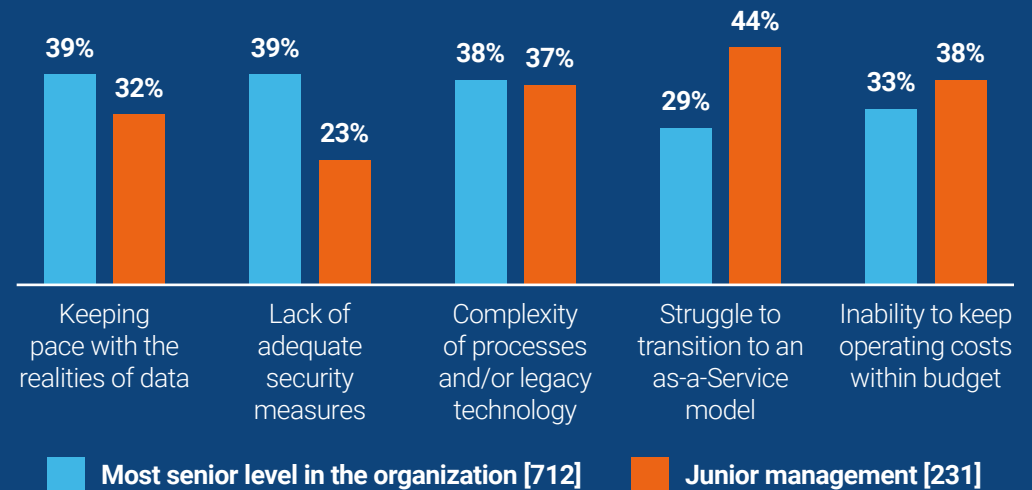
At a regional level, while the overall challenges remain similar, it is those in North America who are the most likely (97%) to be experiencing them. It's a similar picture when looking across industries, with those in the government sector the most likely (99%) to experience the challenges identified at a global level. A specific mention should be given to the telecoms sector, where organizations are more likely to be struggling to transition to an as-a-Service model (38%) and experience a lack of adequate security measures (36%).

At a global level, each level of seniority believes their organization experiences these challenges in equal measure. **However, the challenges themselves vary between the seniority levels.**

The most senior level believe their most likely challenges are keeping pace with the realities of data, including managing the sheer volume of data available, as well the diversity and speed at which new data is being generated. In addition, **they are challenged by the lack of adequate security measures and the complexity of processes and/or legacy technology.** The more junior management roles agree that legacy technology is a challenge but concede they are struggling to transition to an as-a-Service model and find it difficult to keep operating costs within budget.

Challenges when managing organizations' storage

	Keeping pace with the realities of data	Lack of adequate security measures	Complexity of processes and/or legacy technology	Struggle to transition to an as-a-Service model	Inability to keep operating costs within budget
Most senior level in the organization [712]	39%	39%	38%	29%	33%
Junior management [231]	32%	23%	37%	44%	38%

Management disconnect

This continues to reinforce the idea that there is a disconnect between the two levels of management. Those who are more senior, by their own admission, spend considerably more time on average (70%) focused on innovation than junior management (43%). They are also reporting that 69% of innovation efforts are influenced by data and insights on average, versus only 50% for the junior team members.

It is clear that innovation is more present on the agendas of senior management teams, so they face these challenges more directly. In contrast, the more junior members have a split focus between innovation and other day to day duties, explaining why the challenges faced vary.

Personality type perspectives on the challenges faced

When comparing personality types, the thinker and the juggler are slightly more likely (97% respectively) to believe their organization is facing challenges when managing its storage versus the chameleon or the navigator (93% respectively). **This speaks to the nature of these personality types, with those who are more collaborative or curious perhaps more likely to know who to ask or how to tackle these kinds of challenges.** The chameleon is less likely to find the complexity of processes and/or legacy technology (34%) as a challenge, again speaking to their collaborative nature. The thinker is most likely to say that keeping pace with realities of data (39%) is their biggest challenge.

Overall, organizations face a raft of challenges when it comes to their storage solutions, but they recognize the importance of overcoming them and approaching storage proactively and innovatively.

Percentage who agree that their organization is facing challenges when managing its storage

97%	97%	93%	93%
THE THINKER	THE JUGGLER	THE CHAMELEON	THE NAVIGATOR

Organizations appreciate that **storage solutions can help them be more innovative**

To continue their innovation journey and help break through innovation barriers, organizations are looking to modernize their technology and processes, and intelligent storage solutions are top of mind.

At a global level, nearly half (46%) report that being able to predict insights to detect/resolve issues before they arise would help their organization be more innovative and for over a third (39%), the same can be said for real-time insights and automated responses. **It's clear that having a proactive response and leveraging real-time insights can alleviate storage concerns and free up time for innovation.**

Pioneer organizations, those most mature in their innovation journeys, are more likely to believe these areas could help their organization be more innovative than inhibitors.

Considering pioneer organizations not only focus more heavily on innovation but also **are more likely to leverage data driven insights for their innovation efforts,** it's clear that they appreciate how these areas help to develop and build on that.

From an industry point of view, those who work within the manufacturing sector are the most likely to believe that predictive (52%) and real-time insights (45%) would help their organizations be more innovative. Given that manufacturing firms will be likely managing multiple factories, perhaps over various locations, it's encouraging that they feel this area can really help them be more innovative.

Technology features that would help organizations be more innovative

Predictive insight to detect/resolve issues before they arise

Inhibitors 35%

Pioneers 49%

Real-time insights and automated responses

Inhibitors 31%

Pioneers 51%
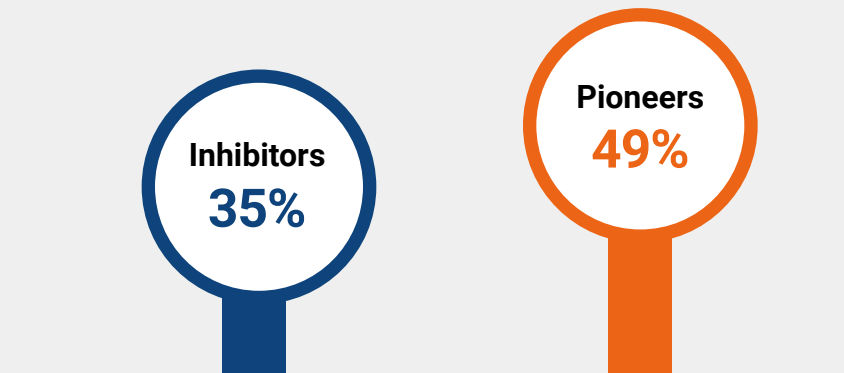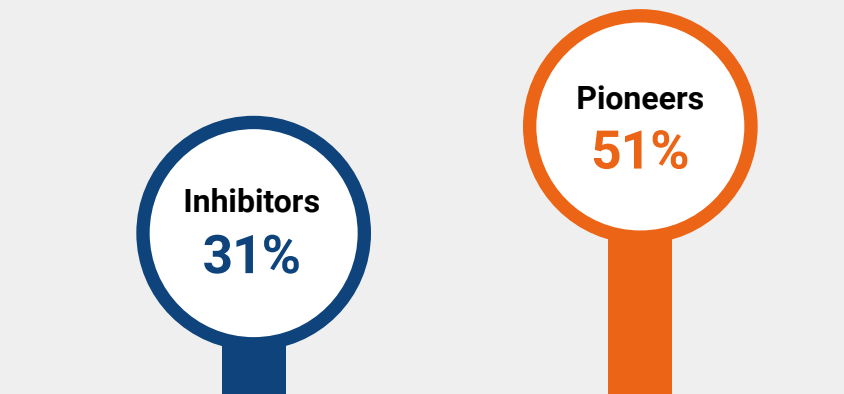
Generating value from data

Organizations understand the impact that intelligent storage solutions can have on innovation and their current technology solutions have been able to provide support for them in this area.

Globally, organizations have improved their ability to generate value from data by an average of 12%. This positive impact increases to 22% for pioneer organizations compared to only 5% for inhibitor organizations. These findings further highlight why they are more likely to agree that intelligent storage solutions can help when it comes to being more innovative: **the more value they generate from data, the more innovative they can be.**

Those who are more senior in the organization report the highest positive impact versus those who are more junior (most senior level in the organization: 13%; CIO or equivalent: 11%; Intermediate management: 11%; Junior management: 10%) further cementing the trend identified here that innovation is more engrained in the senior management roles, so they truly appreciate the value-add from such a solution.

Adventurers look to data and insights to guide them
The adventurer reports a slightly higher average percentage (64%) of data and insights influencing innovation, which speaks to their relentless nature. They will always be looking for information to improve their efforts.

"Innovation is technology-driven… we are assessing a lot of different technologies that have got a positive impact on health"

CIO, Healthcare (private and public), APJC

Data influences innovation efforts

Organizations generate powerful data and have been able to use its value to influence their innovation efforts. **Globally, data and insights influence an average of 63% of organizations' innovation efforts.**

As noted in Section 1, this increases to an average of 82% for pioneer organizations versus only 21% for inhibitor organizations. Data and insights should form a critical part of any organizations' innovation efforts.

Across industries, the healthcare sector has the highest average of data and insights influencing innovation (66%). A CIO from the healthcare sector agreed that *"it's looking at how we capture the data and how we use the basic monitoring information. What layer of analysis we'd put on it to analyze the current data set. Then the next step is what we do to use the data set to predict elements. It's really important to add the element of predictive capacity, because we've all been able to analyse data. **The health arena is moving into prediction**."*

It's clear organizations' IT decision makers appreciate the impact that innovation can have on their ability to generate useful data and actionable insights, and in turn, help overcome storage challenges, as well as encourage organization-wide innovation.

13

Section 3

The vast benefits of **innovative storage solutions**

Investment into innovative storage solutions has had a notable impact on organizations, allowing them to better detect and resolve storage issues. For those organizations who are further along their innovation journey, these benefits are all enhanced.

13% ↑

Average increase in the generation of real-time insights by organizations. Pioneer organizations have increased this by 18% compared to only 9% for inhibitor organizations

14% ↑

Average improvement in reporting accuracy among those investing in a storage solution. For pioneer organizations, this stands at 19% compared to only 9% for inhibitor organizations

By leveraging insights and analytics to monitor and predict storage capacity issues, organizations have reduced downtime by 10% and data loss by 11% on average. Pioneer organizations have heightened this, reporting an average downtime reduction of 21% and an average data loss reduction of 22%. Inhibitor organizations have been less successful in these areas (average downtime and data loss reduction are both 2% on average).

15

From an industry perspective, it is the telecoms sector that has really excelled in using innovative storage solutions to improve data management. This sector is more likely to have operations spread across a vast network. Accessible real-time insights from their extensive network would be a critical advantage for organizations who operate in this market.
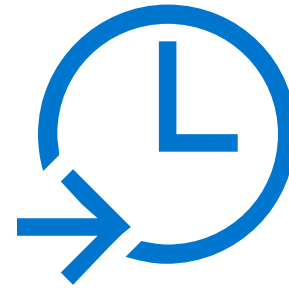
16% ↑

Average increase in the generation of real-time insights in telecoms organizations

17% ↑

Average improvement in reporting accuracy in the telcoms sector, among those investing in a storage solution

On average, as a result of leveraging insights and analytics to monitor and predict storage capacity issues, those in the telecoms sector report a:

14% ↓ **Average reduction in data loss**

12% ↓ **Average reduction in downtime**

16

When looking at this across the different seniority levels, there is a strong story emerging about how these benefits impact organizations.

It's clear that the insights being generated, along with the increase in reporting accuracy, are more visible to those who are more senior in the organization. However, their effects (reduction in downtime and data loss) are being felt equally around the company. **The senior leaders are appreciative that data deluge has been lessened and the data they do have access to is more accurate. For junior management, investing in intelligent storage solutions removes the organization's reliance on legacy technology, freeing up their time for innovation.**

The benefits of innovation in storage

	Average increase in real-time insights	Average increase in reporting accuracy	Average reduction in downtime	Average reduction in data loss
Most senior level in the organization [712]	**15%**	**15%**	10%	11%
CIO or equivalent [2300]	13%	14%	9%	10%
Intermediate management [1057]	12%	13%	10%	11%
Junior management [231]	11%	11%	11%	11%

The benefits of innovation in storage can help transform an organization by drastically improving monitoring capabilities with more and better data and insights. **This results in not only stronger reporting, but also an organization's ability to proactively mitigate issues, monitor technology performance and reduce downtime and data loss.** Doing this means issues can be stopped in their tracks, saving both time and resources. For those who innovate the most, the benefits are even greater.

Conclusion

Data is a key component of innovation and investing in an intelligent storage solution is crucial for organizations to maximize and capitalize on the value of their data across their innovation efforts.

With storage capabilities designed for the data era, organizations not only generate more real-time insights but also improve the accuracy of reporting and reduce downtime and data loss. **By leveraging these benefits, organizations increase the value of their data and ensure it can be used at the right time and right place to inform decisions and fuel innovation, which is a key objective for organizations.** This focus on innovation allows them to push forward in a world where challenges and pressures are changing on a daily basis. By embracing innovation, organizations can break through their innovation barriers.

It is therefore vital for organizations to invest in more optimal storage management systems that adapt to the business with intelligent built-in features. **When implemented and supported in the right way, such a solution can produce better, more accurate data, which feeds into the innovation cycle.**

How Dell Technologies Can Help
Dell Technologies brings together the trusted partnerships, innovative technologies and end-to-end simplicity you need to serve all your users and customers where they are. Our holistic and intelligent offerings enable you to simply, quickly and securely build your breakthrough beyond the reach of competitors.

PowerStore storage with CloudIQ delivers intelligent insights that enable you to proactively detect and resolve storage issues.

LEARN MORE

DELLTechnologies

Dell Technologies is among the world's leading technology companies, instrumental in developing solutions to help transform people's lives with extraordinary capabilities. We deliver the infrastructure, tools, and processes that help organizations create modern data pipelines across and between on-premises, edge and public clouds, rapidly reducing the time between data creation and innovation to help you overcome unplanned obstacles and seize unexpected opportunities - all tailored to the way you need to acquire and consume IT. Dell Technologies will stop at nothing to help you harness the transformative power of technology so you can be ready for whatever comes next.

intel.

On-premises, in the public cloud, or at the edge, Dell Technologies and Intel work together to ensure optimal performance across a broad range of workloads. Intel's data-centric portfolio is built on decades of application optimizations, designed to help your business move faster, store more, and process everything from edge to cloud.

vmware

Together, VMware and Dell Technologies provide unique value to our shared customers. Our integrated platforms and solutions, combined with global scale and deep customer engagements, accelerate the journey to digital transformation. VMware's innovative app modernization, multi-cloud, and Anywhere Workspace software work with Dell Technologies' broad IT portfolio spanning from endpoints to the cloud to help customers achieve secure, consistent operations and faster time to value.

VansonBourne

Vanson Bourne is an independent specialist in market research for the technology sector. Their reputation for robust and credible research-based analysis is founded upon rigorous research principles and their ability to seek the opinions of senior decision makers across technical and business functions, in all business sectors and all major markets. For more information, visit www.vansonbourne.com