DELLTechnologies

Creating New Value:

Driving New Paths to Innovation in the Data Era

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Competitive pressure to **manage and analyze data** continues to intensify.

Welcome to the data era. For the first time in history, the explosion of data is being met with the infrastructure and software to turn it into meaningful business intelligence. The data volumes organizations manage rose 40% over the last year[1], so in today's hyper-competitive market, the stakes for gaining those insights have never been higher.

Fueled by unstoppable data growth, emerging technologies are ushering in a new wave of insights and intelligence at scale. Embracing these technologies to create new value is a business imperative. Except you don't want your organization to simply survive: You want it to thrive.

What can give you that competitive edge? Becoming an intelligent business. Only digital leaders will realize the full potential of emerging technologies by mastering data management. By expertly managing, protecting and operationalizing data across its lifecycle and applying that data to new technologies, you can gain meaningful insights and innovate intelligently.

In this paper, we'll explore the path business leaders can take to adjust to this new technology paradigm and become an intelligent business. The steps include:

- **Building a foundational data management strategy.** How is your organization operationalizing and managing data to achieve outcomes with emerging technologies, like edge?

- **Powering emerging technologies with data.** Are you using IoT and edge solutions to gather more data? Are you leveraging emerging technologies to do, and know more, with your data?

- **Innovating with new insights.** Are you able to use timely data to differentiate and create new value ahead of your competition?

How your organization plans to create value at the edge, establish advanced data management capabilities and harness the power of emerging technologies will determine your ability to differentiate. With technology as the catalyst, you have the opportunity to either disrupt or fall behind.

According to the Dell Technologies Digital Transformation Index, data management ranks as the **#2 planned investment priority over** the next 1–3 years.[2]

Building a foundational data management strategy

Fueled by an abundance of smart devices and Internet of Things (IoT) sensors, worldwide data creation has been growing exponentially for over a decade, but without clear business value. The varied applications of emerging technologies have caused data to change. Data users, consumers, and expectations have changed in unison.

As locations where data is generated is becoming increasingly distributed and data grows exponentially, some organizations are unable to harness their data's potential to create new value. What's holding them back? For many, it's their traditional data management strategies. Only those with a strong data management approach will fully realize the value of emerging technologies.

A holistic and connected data strategy distinguishes digital leaders. More than ever, organizations need to rethink their data management strategy to embrace decentralized data.

50% By 2022, more than 50% of enterprise data will be **created and processed outside the data center or cloud**, up from less than 10% in 2019.[3]

Emerging technologies are disrupting and reinventing every industry.

Self-driving cars

Sight-giving glasses

Autonomous drones

Connected stadiums

Digital healthcare

Voice assistants

Rescue robots

Food security

Prioritize five critical components for a strong data management strategy:

1. **Democratize data.** Ensure that teams across your organization can easily find and access the high-quality, production-ready data sets they need to perform their roles.

2. **Apply technology consistently.** Deploy and manage data, applications and infrastructure in a consistent way across your entire landscape.

3. **Create a holistic IT strategy.** Control data with a holistic IT strategy that spans all your data operations and enables consistent and repeatable outcomes.

4. **Process data in real time.** Gain competitive insights and the ability to innovate with data by processing data securely and in real time.

5. **Powered by data and insights,** these intelligent businesses are using data to ensure their innovations are designed to delight customers and deliver on business expectations.

Once you've built a foundational data management strategy, you'll need to leverage edge and IoT solutions and the invaluable data they provide to gain real-time insights into the specifics of your business. This is a move away from industry trends to tailored, live information.
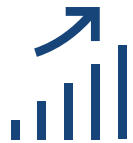
The data volume organizations manage **rose 40%** over the last year.[1]

Data management is **the greatest untapped opportunity** for unlocking new value and driving new paths to innovation.

7 questions to help determine if it's time to rethink your data management strategy

1. Do you know how much data you have today?

2. Do you know where all this data comes from?

3. Do you trust it?

4. Is it secure?

5. What do you do with it?

6. Where and how do you store it?

**7.** What about governance and compliance?

If you don't know the answer to any of these questions, you may find your current data management strategy is holding you back from realizing the full potential of your data.

How having a modern data management strategy pays off

ESG research shows a clear correlation between data management maturity and business outcomes. Among the most-mature organizations:[4]

83% 83 percent said their data management practices help improve customer experience.
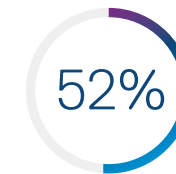
52% Data Leaders drove 52 percent more revenue than orgs with novice data management practices

98% 98 percent feel they're effective at driving value with data.

Data management and **analytics is one of the top business and IT priorities** for 89% of organizations, but 80% don't fully trust their data veracity.[4]

The edge and IoT solutions are **critical for unlocking** all other emerging technologies

Powering emerging technologies with high-quality, trusted and readily-available data

No one can dispute the crucial role that emerging technologies play in success or failure. However, many organizations struggle to successfully apply these new technologies. What's the deciding factor between success and mediocrity, or even failure? Powering emerging technologies with data. And the key to unlocking that opportunity is edge computing.

IoT and edge computing: The keys to unlocking emerging technologies

As data becomes the foundation for everything, you must start at the edge. All digital businesses create data that is more efficiently processed when the computing power is close to the thing or person generating it. By acting on data closer to its source, the edge has the potential to enable entirely new experiences, enhance efficiency and control throughout your business. This will transform how people and machines interact virtually everywhere.

In today's deluge of data, the future belongs to organizations that can **transform IoT data** into actionable insights, fueling faster, more accurate and more cost-effective decision making than the competition.

As the world becomes more mobile and IoT plays an increasingly critical role, the edge is where you'll find the greatest opportunity to create new value for your enterprise. IoT will give you customer data points that were previously impossible to gather. Edge computing augments IoT by enhancing the ability to analyze IoT data in the moment, allowing you to make informed business decisions before you could even form a focus group.

For example, data's center of gravity is rapidly shifting toward the edge. Organizations are increasingly asking IT to deliver real-time, quality-of-service, fraction-of-a-second functions in decentralized locations. To keep up, data engineers and data scientists need efficient infrastructure and tools to build the data pipelines and algorithms that will deliver invaluable insights for your organization. Without the edge, intelligent innovation and differentiation from competitors are nearly impossible.

A new era of human-machine alliances

The gap between humans and machines is shrinking. Everything is becoming more intelligent, communicative and connected and that's only possible because of the enormous amount of data the edge and IoT generate and store. Thanks to these new technologies, the future won't be a matter of people or machines but a partnership between the two.

Given the pace of industry disruption, now is the time to engage actively in human-machine partnerships. Recent research by Dell Technologies and Vanson Bourne reveal 70% of respondents would welcome people partnering with machine/robots to surpass human limitations.1 The time for harnessing innovation in new ways is becoming an increasing priority, and has emerged as a key transformation vehicle to both stay competitive and deliver to customers in new ways.

Exploring the edge-data relationship

When you store, process and analyze your data at the edge, you're able to:

- **Manage exponentially more data volume:** there's too much to send it all to a cloud all the time.

- **Get real-time insights** in a digital economy where seconds can be costly: many edge use cases require a real-time response, so cloud latency issues become deal breakers.

- **Experience faster uptime:** as reliable as the network is, there are still times it fails, which would be intolerable in a real-time scenario.

Why emerging technologies require a strong data management strategy

AI/ML

Turning insights into action
After decades of slow progress, artificial intelligence is now rapidly expanding in capabilities and application areas, which only became possible because of the data deluge.

However, AI/ML solutions are only as good as their data management foundation is strong. Their algorithms rely on organized data to recognize patterns in large data sets and leverage those insights to determine what to do next while improving with each repetition of a task.

Data management + AI/ML:
- Define strategic outcomes first and embark with confidence.
- Put data to work everywhere to realize your vision.
- Build on your success and accelerate your advantage.

5G

Real-time connectivity everywhere
5G introduces a new wave of significantly faster wireless connectivity, drastically reducing mobile network latency. Cities and towns will become more connected than ever, paving the way for smart cities and digital infrastructure, along with a more intelligent industrial infrastructure that thrives on automation.

5G is generating such an incredible amount of data that it will require strong infrastructure and data management to receive, store and process that information.

Data management + 5G:
- Leverage organization to add value faster.
- Deploy efficiently and improve agility.
- Architect for unification and deliver higher user satisfaction.

IoT

Providing the data that enables real-time insights
Interconnecting digital sensors and devices in the physical world, IoT transforms material things into streams of data, allowing people to sense and interact with objects in entirely new ways and accelerate the pace of innovation.

IoT is providing large volumes of information. But your organization requires a strong data management strategy to get the quality insights it needs from that constant flow of data.

Data management + IoT:
- Protect and secure your operations to maintain productivity.
- Capture greater value from IoT information.

As the world becomes increasingly digital, IoT's value for businesses is becoming clear. IDC forecasts worldwide technology spending on the Internet of Things to reach $1.1 trillion in 2023.[5]

Multi-Cloud

Business agility in action
Multi-cloud strategies can consist of private, public, or multiple hybrids. The key difference between digital laggards and leaders is often a comprehensive multi-cloud strategy that architects for flexibility, creates a consistent operational experience, gives you the ability to automate and aims to continually improve capabilities.

While multi-cloud provides you with the agility that's critical for business, your organization needs data management to ensure that data is processed, managed and stored cohesively even though it's spread across multiple systems and locations.

Data management + Multi-Cloud:
- Enhance business dexterity to increase agility and accelerate innovation.
- Increase efficiency and control.
- Reduce risk and gain greater stability.

82% of companies **use more than one cloud**, and 86% expect to do so three years from now.[6]

Innovating with new insights

We're entering an era of data innovation and witnessing the rise of the intelligent business. Industry-altering breakthroughs seem to come from everywhere, but they tend to have one thing in common: they stem from data. With data as the foundation, your organization can make the right business decisions and innovate intelligently with emerging technologies. Powered by data and insights, these intelligent businesses are using data to ensure their innovations are designed to delight customers and deliver on business expectations.

In today's always-on digital economy, **innovation is born at the intersection of emerging technologies and data management**.

"Faster data insights, faster speed to market and faster data-enabled cycles of innovation for **better data-driven design** and decision-making in a world where technology powers human progress."

McLaren[7]

Upgrades key applications in 2 days instead of 2 weeks.[7]

Challenge: The McLaren Group needed to ensure high performance for its data center technologies to power critical business applications and data analysis solutions.

Solution: McLaren implemented high-performance technology, including IoT sensors

Results: The company is getting more value from its data because it enables a data-based approach to automotive engineering, and it improves car performance through fast trackside data analysis.[7]

Read full McLaren story >

Challenge: Voxeleron, which provides detailed imaging of age-related macular degeneration, needed to be able to detect neurological diseases sooner in 3D eye images.

Solution: Voxeleron applied advanced AI algorithms and deep learning to 3D image data sets.

Results: The company can now distinguish anomalies in eight layers of retinal tissue versus the previous maximum of two.[8]

Read full Voxeleron story >

"We gained the speed and flexibility to **explore thousands of different AI model architectures** to find the best one."

Voxeleron[8]

"You would think that an old golf company doesn't have much technology. **The amount of technology we use to put into [our] products to make the golfer perform their best is incredible**."

Callaway Golf[9]

Reduced the time it takes to design, build and ship custom products **from 5 days to 1 day**.[9]

Challenge: Experiencing bottlenecks in the development of custom-built products for its global customer base, Callaway Golf needed a better way to handle diverse application workloads.

Solution: Callaway Golf integrated disparate applications and centralized information.

Results: The manufacturer is now generating smarter, faster intelligence to help it design more innovative products, faster. Callaway Golf is also driving profitability by streamlining costs.[9]

Read full Callaway story >

Challenge: AeroFarms, a pioneer in vertical farming and sustainable agriculture, needed to figure out how to feed an ever-growing global population while conserving limited natural resources.

Solution: AeroFarms deployed IoT sensors for each plant to gain data-driven insights.

Results: AeroFarms is bringing new levels of precision and productivity to farming. The company now increases yields, conserves resources and improves the flavors.[10]

Read full AeroFarms story >

"By applying technology like the IoT, **we're able to measure everything**—water use, temperature, soil composition, humidity, growth rates and more—**to absolutely control and maximize every aspect of the process**. Emerging technologies make this possible."

Aerofarms[10]

Get to innovating, faster

Innovating intelligently isn't simple—but it is urgent. Today's competitive market supports the survival of the fastest. In recent ESG research, 65% of organizations have used insights and analytics from their data management practice to make a major strategy adjustment.[4] You need to rapidly evolve and adapt to major changes in your markets, your customer behavior and new technologies. It's time to take a smarter, tailored approach.

According to the Dell Technologies Digital Transformation Index, 91% of businesses agree that **extracting valuable insights from data** will be more important for their business than ever before.[2]

The first step is rethinking data management for the data era. At Dell Technologies, we've spent decades helping organizations become digital leaders. Let us help you do more with data. You can significantly improve the volume, type and quality of data you ingest, prepare and analyze, in a consistent way across core, cloud and edge. Set a strong foundational data management strategy and differentiate yourself in the data era.

What to read next

No matter how basic or advanced your current data management practice, Dell Technologies Consulting, Professional Services and Education Services are available to help you unlock your data capital. And when it comes to technology, we offer robust solutions for your organization to:

1. Get more data business-ready, faster.

2. Enable data-intensive workloads to run consistently from the edge to the core to the cloud.

3. Accelerate insights and actions to rapidly realize outcomes.

We can help you no matter where you are in your data journey

Learn more on why data management maturity matters with ESG's research "The Data Management Imperative".

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