TechData | Cloud Solutions

Data-Driven Digital Transformation with NetApp and AWS

Introduction: Digital Transformation

Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to your customers. It's also a cultural change that requires organisations to continually challenge the status quo. The term "digital transformation" has become ubiquitous, and is a hot topic that is impossible to ignore. The business needs driving this trend – the need to move faster, be more agile and innovative, and to scale operating models – are real, challenging, and going nowhere soon.

As organisations go through their digital transformation journey, they are having to make important decisions about which technologies and platforms to adopt. Most customers are now moving towards the adoption of hybrid environments that will make use of both public and private cloud solutions and services. There is no single architectural pattern or technology platform that works flawlessly in every single environment, however, the organisations with a successful digital transformation strategy are the ones that have a clear understanding of their own goals, vision and culture.

Why is data so important?

The primary value from data comes not from the data in its raw form, but from the processing and analysis of it and the insights that emerge. By effectively collecting, analysing and utilising data, organisations can enhance productivity and increase efficiency, while also reducing costs. It can also enable them to make better decisions, increase processing efficiency and better understand their target market.

Businesses are amassing huge volumes of data every day and the figures are mind-blowing. 2.5 quintillion bytes of data are created each day at our current pace, with 90% of the data in the world generated over the last two years alone!

Data is a key strategic asset, as these statistics prove

- By 2020, it's expected that 50% of the G2000 will see the majority of their business depend on their ability to create digitally-enhanced products, services and experiences
- Digital transformation spending is expected to reach $1.7 trillion worldwide by 2019, a 42% increase from 2017
- By 2020, over 90% of enterprises will use multiple cloud services and platforms
- By 2020, 60% of CIOs will implement an IT business model and culture that shifts focus from IT projects to digitally-oriented products
- Data centre virtualisation and cloud computing growth - by 2021, 94% of workloads and compute instances will be processed by cloud data centres, and only 6% will be processed by traditional data centres.

Why bother transforming?

In a world where technology is changing our everyday lives, data-driven digital transformation is accelerating business outcomes. Before the adoption of cloud technologies, business processes were prone to getting bogged down in silos. Sharing, transferring and processing data was often slow, hindering team collaboration and productivity. Digital transformation has reduced many of these limitations, making it easier for organisations to share data, ideas and information.

When successful in their data-driven digital transformation, organisations can:

- **Enable new customer touchpoints**
  Customers now expect relevant content in relation to what they're doing any time, anywhere and in the format and on the device of their choice. So it's actually the customer who is driving the need for digital transformation. Data-driven organisations will earn the confidence and loyalty of their customers by protecting their personal and financial data, while optimising its value.
- **Create innovative business opportunities and optimise operations**
  You can transform operations using digital technologies to create new products, services and operating models. This will allow for greater customer interaction and collaboration.
- **Simplify infrastructure**
  Data collation, analysis and storage can create a strain on infrastructure as the data comes in large volumes with varying types and speeds. The cloud provides flexible infrastructure which can scale according to business needs, negating the requirement for data warehouses.
- **Reduce costs and improve profits**
  By integrating data with cloud technology, you can deliver business solutions that reduce the total cost of ownership (CTO). The pay-per-user model of cloud enables customers to process data, expand revenue and reduce costs, without large-scale data resources. In a recent Gartner survey, 56% of respondents said that their digital improvements have already increased profit margins.
- **Improve analysis**
  Cloud technology can integrate data quickly and effortlessly from numerous locations, be it sales, marketing, web analytics, call centre or inventory sources. Without needing to use costly and time-consuming servers, organisations can compile and store data via the cloud, analyse it, refine it and act on it intelligently.
- **Enhance security**
  Many organisations are using digital transformation for fraud detection and cyber attack prevention. Using sophisticated pattern analysis from multiple data sources, potential advanced threats and malicious intruders can be detected and prevented in the early stages.

Enterprise-level database challenges in the cloud

Digital transformation does not come without its challenges, and there are many barriers to its integration in a business. Respondents of an HBR survey were asked to identify the most significant barriers towards adapting to digital transformation within the coming years: 54% of them named their organisation's structure as the biggest challenge and 52% named resistance to change as a key barrier to digital transformation. Other responses included a lack of digital skills, resources and budget. Leaders are under enormous pressure to harness today's volume of data and apply it to create new value across the entire organisation, especially with the challenge of tight budgets, limited resources and skills.

In addition, consumer expectations are increasing. Recent research by Salesforce found that 75% of consumers expect companies to provide a consistent experience wherever they engage with them (be it via mobile, social media, online or in person). As customers look to the future, they increasingly expect companies to leverage their data to provide anticipatory services. By 2020, 75% of business buyers expect to work with companies that can anticipate their needs and make relevant suggestions before they even initiate contact.

However, it's not all doom and gloom. It's getting easier and easier to run workloads in the cloud and there is an abundance of options regarding where to store and apply it. Data-driven organisations are able to attract and retain connected consumers with more convenient, engaging and personalised experiences, pushing their competitors down the value chain.

The advantages of Database as a Service (DBaaS)

Database as a Service, or DBaaS, is a cloud-based service that offers users a flexible, scalable and on-demand platform, focusing on self-service, easy management, high performance and usage tracking. The benefits of DBaaS set it apart from other cloud services as it delivers database functionality on the same scale as a relational database management system. Here are just a few of the benefits of DBaaS:

- You don't have to buy your own equipment or software licenses
- No need to hire database developers, build a database system or maintain it
- You don't pay the power bill for running all the servers
- A DBaaS often comes with uptime guarantees
- DBaaS teams are experienced at handling a wide variety of bugs and problems
- The database is off site, so loss of power at your business will not affect day-to-day operations

However, there are still many aspects you will need to consider before deciding if a DBaaS will fulfil your needs, or if you should stick with a traditional database IaaS deployment model.

1. Will you scale beyond DBaaS?

DBaaS allows for on-demand scalability, which means that when an organisation using DBaaS outgrows its database capacity, it can simply expand. With an onsite database, the IT teams have to add more hardware to the database, purchase and install new equipment, and integrate the updated hardware.

2. How do you currently manage your data?

Virtualisation can increase IT agility, flexibility and scalability while creating significant cost savings. Workloads are deployed faster, performance and availability increases, and operations become automated, resulting in IT that's simpler to manage and less costly to own and operate.

By implementing DBaaS, administrators can standardise how databases are built for each version and ensure that best practices are followed, making administration easier and less time-consuming. Outsourcing through DBaaS also frees up a lot of server space.

Being able to implement automation within DBaaS removes the manual processes, which are time-consuming and prone to user errors. Automation increases the stability of database environments and improves compliance and governance. It also reinforces the implementation of standards, enhancing agility and speeding up time to market.

3. Are your cloud services secure?

Remotely maintaining the database from different servers creates a default security mechanism that prevents security breaches. An off-site database ensures that there are no on-site breaches. However, it is still important to build a solid governance strategy into your cloud solution, ensuring that it's robust and scalable.

4. How expensive can it be?

The use of DBaaS is significantly less expensive than other cloud-based services. One of the most appealing aspects of DBaaS is that consolidation results in a smaller hardware footprint, which lowers costs. Purchasing capacity and functionality as needed through DBaaS allows companies to invest in the resources they truly need, while not having to worry about on-site database maintenance.

5. Does your existing database fit in a DBaaS model?

In order to determine whether DBaaS is right for you, consider the ecosystem your organisation currently employs, and ask yourself how your data stack will grow and change in the future, as well as considering what you want and need out of your database.

6. Can you easily move your existing database workloads to or from and through the cloud?

You can move existing on-premises data to a new cloud storage location in batches, increments and streams. Moving database workloads to the cloud is a worthwhile effort as part of modernising your architecture and being better prepared for the future.

7. Are you spending too much time and resource on test environments?

Database usage can easily be tracked when using DBaaS. Granular metering of database usage allows organisations to track usage time, space, availability guarantees and resource consumption, thus enabling better management of databases and control over license costs. It can also provide a dashboard-style view of the data, letting you view data activity on a per user basis.

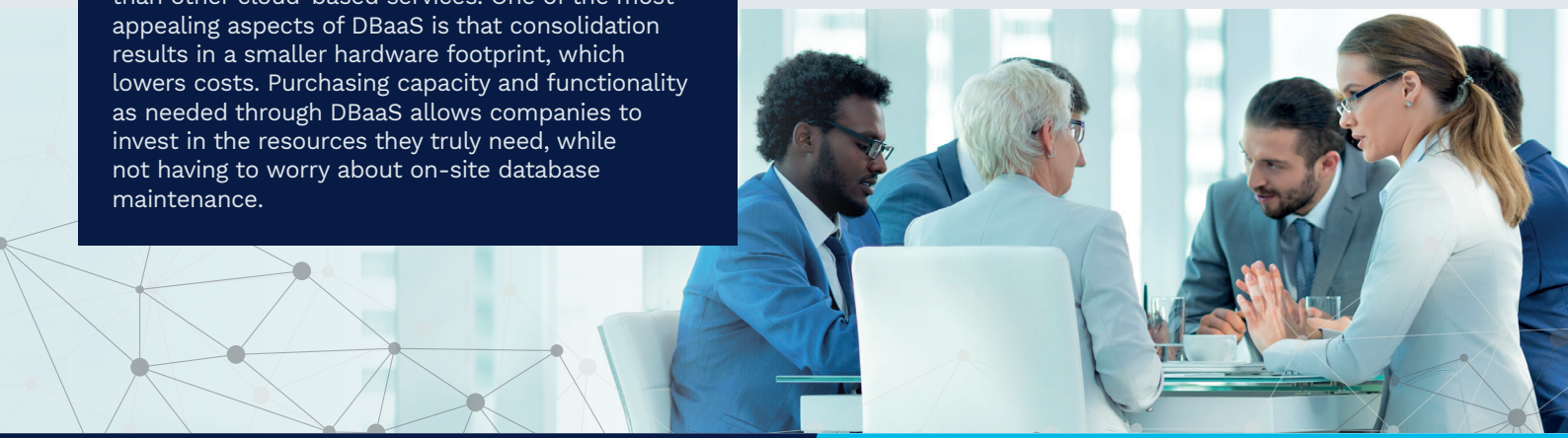
8. How well will your DBaaS perform?

When you're making the decision to outsource your database, the main factor you need to consider is whether the DBaaS will do a better job providing database services than you can.

9. Would you consider turning to the cloud for Disaster Recovery instead of maintaining a secondary or tertiary data centre?

You have to consider your recovery point objectives (RPOs): how much data can you afford to lose? The other major element to consider is the recovery time objective (RTO): how quickly does a given workload have to be back online?

DBaaS can help organisations save significant time and money on disaster recovery resources, while at the same time improving their overall disaster preparedness. There are also benefits to your actual ability to recover from a disaster, including data that's backed up to the cloud and is stored in virtual machines.



How can you protect your strategic assets?

A data strategy is designed to improve all of the ways you acquire, store, manage, share and use data. It will position you to deliver the best possible solution as your organisation grows and evolves. When new requirements arise and gaps become visible, the framework provides a method for identifying the changes needed across your company's various data management capability and technology areas, then adapting to those changes.

Enterprise-class data management solutions in the cloud provide protection, visibility and control for your cloud-based workloads. With today's cloud technology, you can implement a new enterprise class data management system with pre-validated design, accelerating the time to market and creating specific business outcomes.

Areas to consider when developing a data protection strategy are:

- ✓ **Understand your business** – consider your scalability and agility requirements, and how workload requirements may change over time.
- ✓ **Performance** – understand what level of storage performance you may need in the future.
- ✓ **Security** - apply best practices and data governance to augment server and network security measures.
- ✓ **Backup, archiving, replication and disaster recovery** – consider how to integrate these important functions into your organisation.

Data management - next steps

An enterprise data management strategy provides the guidelines and governance to ensure that the organisation makes the most successful moves and protects its valuable data. Data management is deployed by successful data-driven digital organisations to help them achieve superior business results.

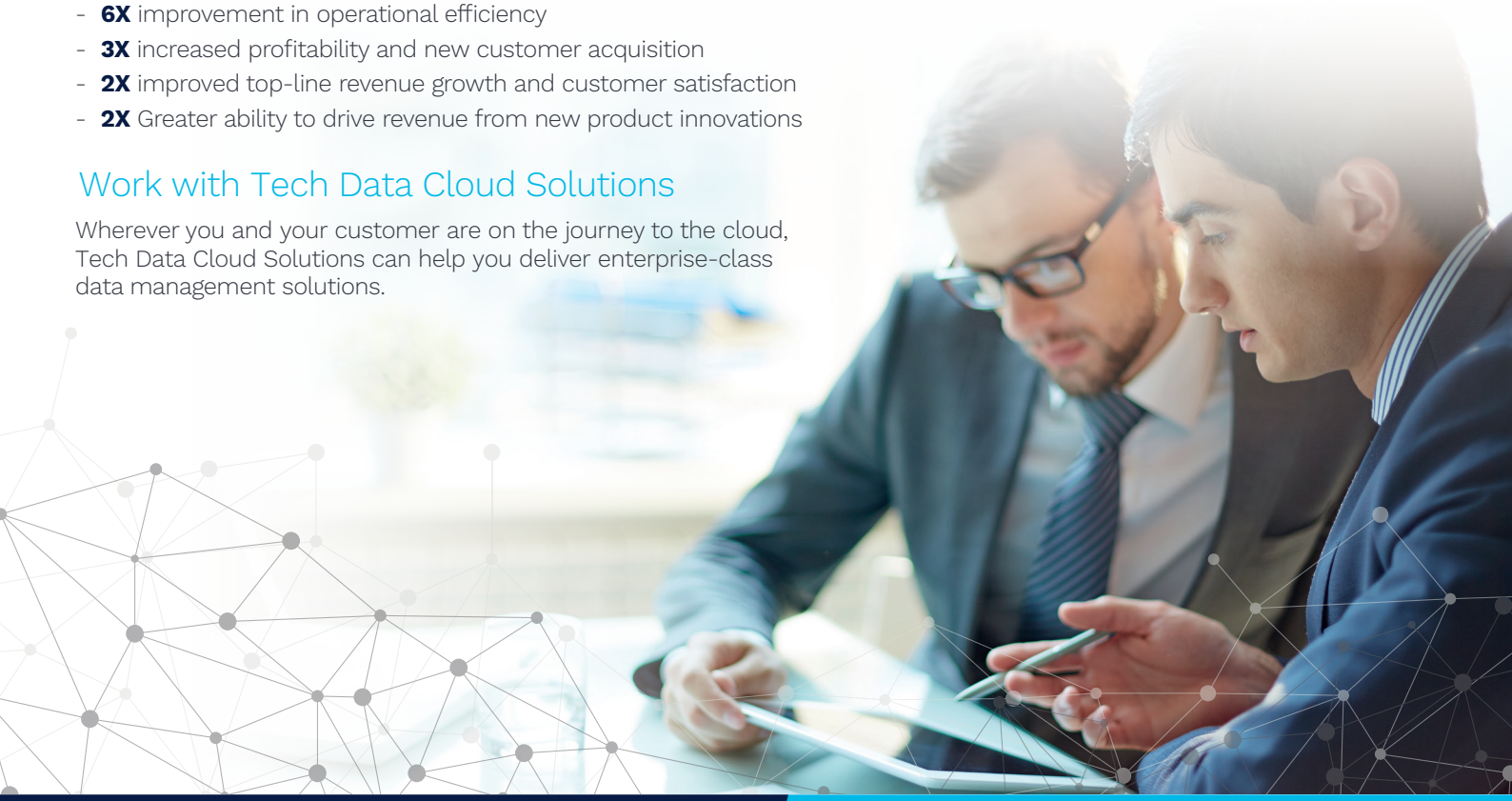
Cloud-based data management, instead of on-premise management, helps to automate the provisioning of the infrastructure based on the needs of the project. It helps to cost-effectively manage and maintain your databases, freeing up IT to focus on driving business value.

In addition, managing your data protection and compliance in a single, comprehensive data management platform gives you control, flexibility and automation to streamline IT efforts. It also shows:

- **6X** improvement in operational efficiency
- **3X** increased profitability and new customer acquisition
- **2X** improved top-line revenue growth and customer satisfaction
- **2X** Greater ability to drive revenue from new product innovations

Work with Tech Data Cloud Solutions

Wherever you and your customer are on the journey to the cloud, Tech Data Cloud Solutions can help you deliver enterprise-class data management solutions.



About Amazon Web Services (AWS)

Amazon Web Services (AWS) is a secure cloud services platform, offering database storage, content delivery and other functionality to help businesses scale and grow. Millions of customers are currently leveraging AWS cloud products and solutions to build sophisticated applications with increased flexibility, scalability and reliability.

One of the most challenging steps required to deploy an application infrastructure in the cloud involves the logistics of moving data into and out of the cloud. Amazon Web Services provides a number of services for moving data, and each solution offers various levels of speed, security, cost and performance. AWS services can help seamlessly transfer on-premises data to and from the cloud.

About NetApp

NetApp, in partnership with Amazon Web Services (AWS), offers a flexible line of hybrid cloud storage solutions that help meet your business objectives in a changing IT world. Whether you're considering AWS to expand your data protection, extend your application workloads to the cloud, or to simply meet a cloud mandate, NetApp can help you:

- Accelerate innovation and time to market
- Optimise operations and resources for efficiency and business impact
- Establish clear visibility to easily manage your cloud environment
- Foster greater innovation

NetApps's Cloud Volumes ONTAP solution

Cloud Volumes ONTAP is a powerful, cost-effective and easy-to-use data management solution for your cloud workloads. The fast, secure and reliable Cloud Volumes ONTAP data management software comes with multiple data protection and storage efficiency features.

Features:

- Highly available storage
- SnapMirror®
- SnapVault® replications
- Data tiering
- Thin provisioning and deduplication
- Compression NFS/CIFS/iSCSI file services
- NetApp FlexClone®
- Data Encryption NetApp Snapshot™, SnapCenter® and SnapRestore®
- NetApp SnapLock®

Benefits:

- Delivers control, protection, and efficiency to your data with the flexibility of the cloud
- Highly available, non-disruptive operations
- Seamless workloads migration
- Low cost disaster recovery
- Minimise storage footprint with storage efficiency features such as data deduplication and data compression
- Grow as you go file shares
- Automated DevOps environments
- Cloud Volumes ONTAP managed encryption at rest
- Cost-effective data protection and data encryption management services
- Cloud WORM (Write Once, Read Many) data protection

Ready to take the plunge?

Organisations of all sizes can quickly and easily deploy enterprise class data management products in the cloud. End users bring their own licenses, so only pay for usage.

Using cloud-based software, technologies and servers, you can reduce costs whilst increasing flexibility and scalability. Cloud technologies embrace and encourage a fast-moving, innovative environment where businesses can utilise the cloud to manage, process, analyse and store data, ultimately acting on the findings for competitive advantage.

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