

White Paper

Unlock the Power of Data Capital: Accelerate DX

Sponsored by: Dell EMC

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Introduction

Digital transformation (DX) is reaching a macroeconomic scale. DX business objectives are balanced between tactical and strategic objectives and range from improvement in operational efficiencies and customer satisfaction to increasing existing product revenue to improving profit margins to launching new digital revenue streams.

Successful DX relies on utilizing data for services as well as converting data into actionable insights. This reliance on data is contributing to a new digital era. 3rd Platform (cloud, social, mobile, and Big Data) computing is the underpinning of DX worldwide. It enables collection of a vast breadth of data sets and delivers the agility and efficiency needed to accelerate DX (see Figure 1).

FIGURE 1

DX Industry Growth

Digital Transformation



By 2021, **at least 50% of global GDP** will be digitized, with growth in every industry driven by digitally enhanced offerings, operations, and relationships.

Note: For more details, see *IDC FutureScape: Worldwide IT Industry 2018 Predictions* (IDC #US43171317, October 2017).

Source: IDC, 2017

Intelligent applications based on artificial intelligence, machine learning (ML), and continual deep learning are the next wave of technology transforming how consumers and enterprises work, learn, and play. While data is at the core of the new digital economy, it's about how you sense the environment and manage the data from edge to core to cloud and how you analyze data in near real time and learn from it, and then act on it to affect outcomes.

No industry is exempt from the impact of digital transformation. What differentiates winning organizations from their peers is how they leverage data to deliver meaningful, value-added services or any enterprise decision making.

Data Capital – What Is It, and Why Is It Important?

In economics, capital is a produced good, as opposed to a natural resource. Data is a new form of capital. It is on the same level as financial capital in terms of value for a business and/or generating new digital products and services. It is the wealth in the form of value derived from organizational data, commonly used to power digital experiences and/or unlock business insights. It can have long-term value just as physical assets, such as buildings and equipment, do. With data capital, if you know something about your customer, channel activity, ecosystem, or production process, it could yield value over the years.

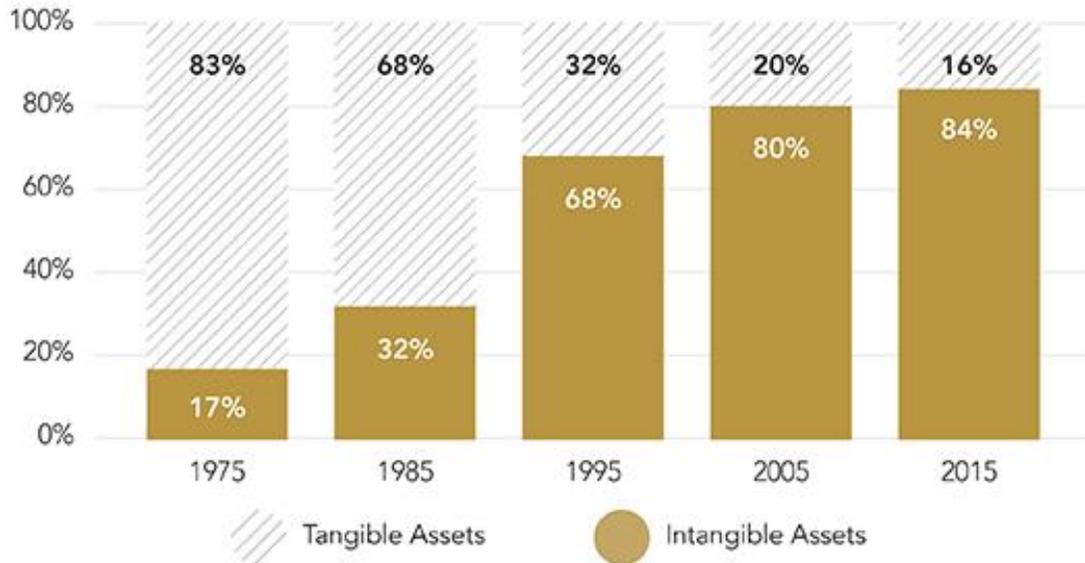
IDC forecasts that by 2025, the global datasphere will grow to 163ZB (i.e., a trillion gigabytes). That's 10 times the 16.1ZB of data generated in 2016. We are finding new ways for data to make our lives better, ways that we didn't imagine even a few years ago. The way society uses data is going through a fundamental shift: from entertainment to productivity, from business focused to hyperpersonal, from selective to ubiquitous, from retrospective to here and now, and from life enhancing to life critical. Structured or unstructured, generated by humans or by machines, and stored in the datacenter or the cloud, data is the new basis of competitive advantage.

According to Ocean Tomo LLC's 2015 *Intangible Assets Market Value Study*, updated in 2017, 84% of the market value of S&P 500 companies comes from intangible assets, including data and software (see Figure 2), and the possible value of intangible assets, including data, in the United States is \$8 trillion.

FIGURE 2

Growth in the Value of Intellectual Capital Equity

COMPONENTS of S&P 500 MARKET VALUE



Source: Intangible Asset Market Value Study, 2017

An interesting DX story of exploiting the power of data capital is that of the telecommunications carrier Sprint. The telco, under pressure from large rivals such as Verizon and AT&T and in merger talks with T-Mobile, is reinvesting in technology after years of significant cost reduction, according to CIO Scott Rice, who is leading the charge. The focus is largely around analyzing data to improve the customer experience. Sprint is churning through hundreds of terabytes of data generated by logs, databases, emails, and other sources to gauge the performance of sprint.com. That data helps IT staff determine where glitches are impeding Sprint's ability to facilitate transactions, ranging from basic browsing to phone purchases to upgrades consumers are trying to complete online. Analyzing bugs and other delays helps Sprint pinpoint when and why a customer is abandoning a transaction. To improve the way it recommends products to consumers, Sprint has also created a Hadoop-based data lake to analyze customer data. For example, a 10-year iPhone user will get only iPhone offers. The entire effort is focused on building a breadth of information about customers and their relationship with Sprint. Sprint's transformation is continuing across all aspects of the business and the "IT organization is right in the middle of every transformation project," Rice says.

Data Capital Challenges and What Is Needed

The accelerated pace of digitization and datafication across value-creating business activities is leading to more diverse, dynamic, and distributed data sets. Newer cloud-native software as a service (SaaS), Internet of Things (IoT), mobile, and hybrid/multicloud applications, plus traditional on-premises batch or enterprise applications, have resulted in organizational data being widely and unpredictably spread across multiple repositories. This proliferation of data types and repositories creates numerous and increasing challenges for IT staff, ranging from knowing what data is where to understanding what data characteristics should determine where the data resides. As data becomes an essential part of the business, IT must consider performance, cost, data protection, security, governance, and infrastructure management characteristics to decide what platform is best suited to leverage. Businesses are under increasing pressure to build and buy infrastructures that are responsive to the application workloads of the organization. A one-size-fits-all approach to data storage is no longer sustainable in a world where IT has gone from a cost center to a source of differentiation for the business.

To unlock the power of data capital and accelerate DX, businesses need scalable, flexible, and efficient infrastructure along with superior data integration and orchestration services. They need timely access and a unified view of their data sets. They need to run real-time analytics, ML algorithms, and batch processes – all to support timely business decisions. Additionally, data must be portable, and IT must be able to manage across the breadth of the data footprint to protect this critical asset.

Moreover, if data capital is used across the organization, then data protection needs to evolve from a reactive insurance policy to a proactive value-added service for the enterprise. IT needs to provide a self-service mechanism for developers to spin up copies of the production environment to use in designing new features. IT operations should be able to leverage the data protection infrastructure to deliver the data mobility necessary to test new patches and updates before they are rolled out across the company. The security and forensics team should be able to use copies of production data to test for security vulnerabilities or perform forensics after an event has been picked up through security incident and event management platforms. Finally, the compliance groups should be able to analyze copies of production data for regulatory or capacity planning purposes.

The challenge for every chief data officer is to maximize value creation from a company's data capital while ensuring its use complies with applicable policies, regulations, and laws. While managing different data types poses a challenge, structured and unstructured data should work together in all large corporations. It's important, therefore, to have the tools and technologies to make the most of both. Most enterprises have very little visibility into what's happening across their unstructured data, and that presents challenges for both using and securing the data. The lack of awareness makes it more likely for enterprises to run afoul of the increasing number of regulations addressing data privacy.

By far, the volume of data is the biggest challenge. Its tremendous growth is creating major technical issues. As data volumes grow, so do the complexity and cost of storing, managing, and protecting the data. Such a large volume of data also requires infrastructure that many businesses don't currently have or for which they haven't budgeted.

Finally, the realities of modern data management require a diverse set of data that lives in systems that are best suited to hold it long term, and these systems make the data available with all the security, quality, availability, and scalability that enterprises need. Equally important, these systems should cooperate so seamlessly that analysts, developers, and data scientists do not need to know where the data resides. However, protecting data across such a large heterogeneous environment often places a

massive management tax on IT. If data is an essential asset, then it must be protected wherever it resides, and that means creating a scalable support strategy to ensure maximum availability, complete protection, and simplification of management to enable the business to scale effectively.

As part of providing proactive value-added services for the enterprise, the business needs to understand the value of its entire data footprint and the granularity of protection required and the appropriate service-level agreements. For example, meeting a recovery point objective (RPO) of no more than 24 hours could mean a significant amount of data loss. Likewise, if the recovery time objective (RTO) for an application is a day, the business needs to understand the associated value of application downtime.

How Can Dell EMC Help?

By leveraging vast quantities and diverse data to power applications and uncover patterns that lead to breakthrough ideas, an enterprise can win the war in an increasingly competitive business landscape. Storage is integral to an organization's data strategy because it is an active contributor to the process of amassing and analyzing information. The challenge is to build storage systems that can support the entire data footprint and provide intelligent and efficient data management at any scale to help derive timely insights and business value. In addition, it is critical to provide cloud-enabled data protection capabilities for growing volumes of distributed data sets while keeping costs low and without compromising on performance or associated compliance/security requirements.

Dell EMC provides a portfolio of storage and data protection offerings for both modern and legacy applications. The storage solutions are architected for varied data sets – structured, semistructured or unstructured – with differing I/O characteristics and service-level agreements, providing flexibility and choice and enabling data-driven decision making for the deployment.

The Dell EMC data storage portfolio consists of the following:

- Dell EMC PowerMax is a SAN array built with end-to-end NVMe to ensure the highest levels of performance for the most demanding mission-critical workloads. It is architected to support future storage media innovations such as SCM.
- Dell EMC also offers midrange SAN solutions that provide efficient and cost-effective data platforms for departmental or smaller-scale deployments with XtremIO, Unity, and SC.
- Dell EMC UnityVSA Cloud Edition offers full-featured file services and software-defined storage (SDS) capabilities deployed in the cloud with VMware Cloud on AWS.
- Dell EMC Isilon is a scale-out NAS platform targeted for demanding workloads and can scale performance and capacity as needed.
- Dell EMC ECS is an exabyte-scale, flexible, and resilient object storage platform for traditional and next-generation workloads.
- CloudIQ is a no-cost cloud-native application that leverages machine learning to proactively monitor and measure the overall health of storage systems through intelligent, comprehensive, and predictive analytics.

The Dell EMC data protection portfolio consists of the following:

- Data Domain is capacity-optimized protection storage that integrates with leading backup, archiving, enterprise, and big data applications or directly with primary storage. It is cloud enabled and supports end-to-end data verification, fault detection, and self-healing.
- Data Protection Suite consists of data protection software that enables organizations of all sizes to protect, archive, and recover mission-critical workloads regardless of where the data lives, including physical, virtual, hybrid, and public cloud environments, and is tightly integrated with Data Domain.
- Integrated Data Protection Appliance simplifies deployment and management of data protection while delivering powerful enterprise data protection capabilities for midsize and enterprise organizations at a lower cost to protect than competing solutions. It is a converged solution that offers complete backup, replication, recovery, deduplication, instant access and restore, search and analytics, and tight VMware integration – plus cloud readiness with disaster recovery and long-term retention to the cloud – all in a single appliance.
- Data Protection for Multi-Cloud provides automated and fully orchestrated data movement for long-term retention and disaster recovery.
- Cloud Snapshot Manager provides SaaS-based backup and disaster recovery for public workloads.

These solutions help customers achieve the following objectives:

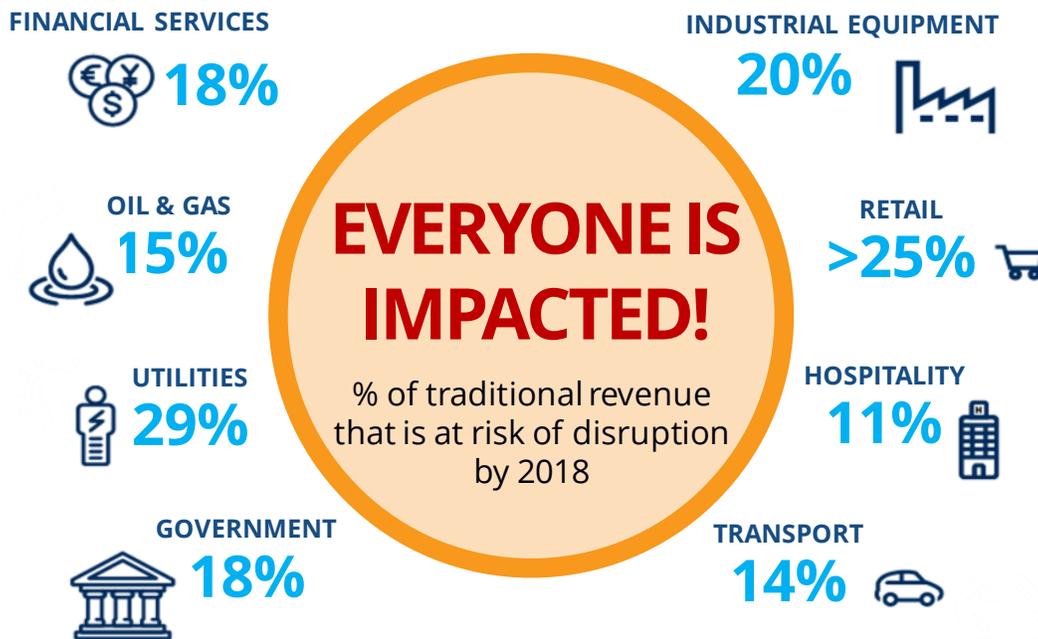
- **Simplify the data landscape**
 - Extensive coverage for enterprise workloads
 - Coverage from edge to core to multicloud
 - Management and protection for data wherever it resides
- **Automate data services**
 - Allow business needs to define where data is kept from edge to core to cloud
 - Simplified storage management and protection with policy-based automation
 - Enable data mobility to quickly move data between environments or clouds
- **Extract value from data**
 - A complete portfolio of compute, network, storage, and data protection to accelerate unlocking the value of data capital
 - Tight integration with leading applications and analytics and a large partner ecosystem that make it easier to leverage data
- **Protect and secure data assets**
 - Maintain service levels and avoid data loss with highly reliable data platforms
 - Data protection support across the data footprint with the ability to back up and recover across multiple clouds
 - Enterprise-grade security with cyber-resiliency and privacy protection

Conclusion

Digital disruption is real. The average life span of a company on the S&P 500 index (in years) in the 3rd Platform era is 18 years versus 25 years during the 2nd Platform era. To survive, companies need to embrace and accelerate DX. IDC research shows that organizations across every industry are under threat; the average percentage of traditional revenue that is at the risk of disruption vary from 11% for hospitality to 29% for utilities (see Figure 3).

FIGURE 3

Traditional Revenue at the Risk of Disruption



Source: IDC, 2017

Organizations that embrace and accelerate DX are attracting new customers and developing new revenue streams faster than their competitors. Through utilizing data, industries are being formed and reshaped overnight. For example, the world of fast food is getting faster. The new breed of on-demand restaurants (Deliveroo, Uber Eats, or DoorDash) is fighting for market share while creating better customer experiences. McDonald's, which is one of the most recognized brands in the world due to high levels of customer happiness, has made big steps such as its new purchasing screens to improve speed and to apply digital transformation to its customer experiences.

IDC advises every business to unlock the full power of its data capital to accelerate DX. It is a best practices recommendation to swiftly weave in a data-oriented culture – across new and existing methodologies, processes, measurements, and tools. Flexible and simple storage solutions along with location- and infrastructure-independent software that understands and performs various protection, security, integration, and optimization functions on data for the purposes of agile and economic data management and faster time to insights will be crucial to the realization of superior DX business outcomes. Successful DX initiatives showcase alignment of a digital mindset to strategic planning at

the executive level. Leadership is resilient in driving change and focusing on the future state. Cross-functional digital collaboration with sales and marketing is at the core. Continuous learning culture is enabled and measured with closed-loop processes in place to take timely and corrective actions. New capabilities enabled by data capital yield not only radical improvements in operational efficiencies but also new sources of competitive advantage.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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