IDC PERSPECTIVE

NetApp's IT Transformation Journey — Guiding Principles for Technology Providers to Become Digitally Determined

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: IT Transformation and the New CIO Mission

This IDC Perspective examines how NetApp's IT organization has aligned itself with the long-term vision of the company to be a hybrid cloud data services provider and, in the process, transformed its organization to be a use case in a data-led IT transformation. It is an example of how a corporate IT organization can develop and deliver services that improve customer satisfaction and outreach. It is an example of how IT can be an external-facing organization.

Key Takeaways

- Technology providers — and especially technology companies that offer IT products and services to enterprises — have a dual role to play.
- The first role is to focus on increasing their differentiation by delivering best-in-class products and services, which in turn increases their revenue and, ultimately, their market share.
- The second is to serve as an example of how they run their business and, specifically, showcase the transformation of their own enterprise IT organization to support their core business effectively.
- IT transformation is an opportunity for organizations to serve as a catalyst for the growth of their business.

Recommended Actions

- CIOs of firms undergoing digital transformation are seeing their constituencies change. The constituencies that they need to enable the most are software engineers.
- The new vision of CIOs is to implement a scalable development environment, not just for their own organization (i.e., corporate IT) but for all software development organizations enterprisewide. Developers need to spend their time developing rather than building development environments.
- Deploying a rapidly configurable DevOps-as-a-service platform enables product line developers to drive the transformation that ultimately accelerates business outcomes in a scalable manner.

Source: IDC, 2019

SITUATION OVERVIEW

Introduction

Technology providers – and especially technology companies that offer IT products and services to enterprises – have a dual role to play. The first role is to focus on increasing their differentiation by delivering best-in-class products and services, which in turn increases their revenue and, ultimately, their market share. The second role is to serve as an example of how they run their business and, specifically, showcase the transformation of their own enterprise IT organization to support their core business effectively.

IDC defines digital transformation (DX) as a technology-driven strategy. It is the profound transformation of business and organizational activities, processes, competencies, and models to fully leverage the changes and opportunities that are presented by digital technologies and their profound impact on society. Examples of improved societal outcomes include improving people's quality of life, fostering equitable growth and sustainability, and protecting the environment. DX compels enterprises to become data driven, treating data as lifeblood on which the firm operates. Much of DX is underpinned by IT transformation (ITX), which enables IT to be agile, scalable, capex friendly, and elastic from a people, process, and technology perspective.

Undertaking ITX provides IT organizations with an opportunity to serve as a catalyst for the growth of their business. It requires a fundamental shift from being an asset management organization to a data management organization. IT infrastructure, therefore, becomes the means to the mission versus the mission itself.

It is an understatement to say that technology providers are at the forefront of digital transformation themselves (versus simply preaching it as a doctrine that must be embraced by their customers). For such companies, DX is both an internal and external doctrine. Externally, it is the way their products and services enable their customers to embrace and accelerate their DX journey. A lesser known fact is that many such firms are aggressively transformational internally as well.

IDC recently interviewed Bill Miller, the CIO of NetApp Inc., to get his perspective on how his organization is transforming itself to better support the vendor as it undergoes a transformation from being a leading vendor of "storage infrastructure" to a full-service hybrid cloud data and infrastructure services provider. This document seeks to capture his sentiment.

Organizational Overview

NetApp provides a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. A Fortune 500 company, NetApp is headquartered in Sunnyvale, California, with a global presence comprising 110 offices worldwide and 10,000+ employees.

Top Investment Priorities for NetApp IT

Miller's vision for his organization is simple. As a world-class technology provider, his organization needs to deliver world-class IT services to support his business effectively. To that effect, he has nurtured a culture wherein the focus is on data – the effective use of data to deliver superior insight and outcomes – and no longer on infrastructure. Further, he has partnered with NetApp's own customers – the very folks that purchase products and services from his business – to exchange insights on how to transform the company's businesses. His vision for transformation comes from none

other than George Kurian, the CEO of NetApp, who believes that "organizations cannot digitally transform their business until they first transform their IT."

For NetApp, it meant that, if it is to be a cog in the digital transformation process at any enterprise, it needed to showcase the transformation itself. This transformation started with its own corporate IT organization, which invested in tools, methodologies, skills, and architecture. NetApp's leadership took it upon itself to understand and deploy organizational changes that would enable IT to be nimble, agile, and forward looking. NetApp IT embarked on this transformation several years ago — today, NetApp can claim to be one of the few technology providers that also has an industry-leading corporate IT organization.

This can be illustrated by two examples that have served the business and its customers in slightly different but complementary ways. Both examples were born out of NetApp's desire to stake out a leading position in data management and to help the company's customers navigate a very complicated space around data.

Gaining Insight Through Telemetry Data

The first example is about how NetApp was able to convert telemetry data into deep insights. NetApp started to accumulate this data years ago as a "by-product" of customer installations. Three years ago, a light bulb went off — if this data that was so rich, then rather than just sit on it, NetApp could turn it into insights for its customers. For example, the data could be used to discover the health of the array post-install. It could be used to gain insights on utilization and capacity. It could be used to assist customers to better allocate their storage resources to serve their business better. When NetApp prototyped it, it was an instant success.

The next challenge for NetApp was to figure out a delivery mechanism. So, NetApp developed an operational insights platform (known as Active IQ). It started utilizing artificial intelligence/machine learning (AI/ML) in the back end for trend analysis and started ingesting this data at a frantic pace to deliver the results. It has a mobile app that enables "anytime, anywhere" access to IT operations teams. Today, NetApp collects about 300,000 touch points a day from all customer installations worldwide. By taking an algorithmic approach, NetApp has been able to help customers with anomalies, nonsupported configurations, and even situations that can create potential instabilities down the line. NetApp can also detect security vulnerabilities and flaws and convey that information to its customers in an automated manner. NetApp's AI engine can learn from advisories and updates, so it can mark that issue as resolved.

Today, NetApp considers Active IQ to be an early warning system, an optimization engine, and a capital investment optimization system that provides unprecedented value for its customers. It is used by sales and partners alike to increase the level of engagement and quality of service.

Converting data into insight is for NetApp a true case of digital transformation. It not only allows NetApp to get deep insights on its installations but also crucially allows NetApp to use this insight as "real life" data points for designing future products and capabilities. As NetApp's AI engine becomes "smarter," it can seek out new data points, which in turn provides NetApp and its customers new insight. It is a case of customer service backed by technology, which then enables NetApp to gain stickiness with its customer base. NetApp believes that data will continue to be an invaluable asset for its customers. Active IQ enables its customers to gain insight from this data to help them to predict, prevent, and protect unplanned situations that compromise their service-level objectives.

NetApp Corporate IT Transformation

A few years ago, NetApp IT underwent an internal transformation. The goal was to reduce costs and streamline operations. As a first step, the organization consolidated operations and moved many of the back-office services offshore (today 45% of NetApp IT is based offshore). The second step was to undergo a technology transformation. NetApp IT embarked on an aggressive automation campaign and shifted many of its internal services to infrastructure-as-a-service delivery model with the intent to eventually move them to a platform-as-a-service model.

The next step for NetApp IT was a transformation to infrastructure as code to enable developers to provision and manage infrastructure resources via automated workflows. In the past two years, NetApp shifted aggressively to a full DevOps-as-a-service platform. It layered software engineering tools like Jira, GitHub, and Jenkins in an automated build fashion on top of what was deployed as a "traditional platform as a service" model. Today, NetApp IT is a textbook example of a fully automated IT organization: developers build workflows automatically. They can provision typical IT resources' storage, memory, and compute; configure them automatically into the NetApp platform; and layer in the engineering tools on to create an instant on CI/CD environment. NetApp does all internal application development on this rapid deployment platform.

Today, NetApp's DevOps-as-a-service platform allows the company's developers to procure resources for their development environment in a matter of minutes from NetApp's internal private cloud or to burst out to public cloud infrastructure services as needed. It is based on what users define in their control panel or the location from where they request the workload.

NetApp has true hybrid cloud environment — that is, multiple public clouds tied together with their own private cloud with a single management and control plan. Each workload or workflow is tied to the best service in the public cloud, and the bursting workflow is smart to select it based on the logic. Developers don't need to know or don't care that the service is delivered from the private cloud or public cloud. What they get is the utility.

NetApp Transformation Becomes Part of Its Corporate Mission

As the CIO of NetApp, Miller made it his personal mission to build and deliver platforms that enabled all eight of NetApp's software engineering organizations to rapidly innovate. The endeavor was a complex undertaking and has, in turn, offered tremendous value back to the organization — the likes of which NetApp has not seen internally before.

Initially, what drove NetApp to it was to save costs by IT transformation — the assumption being if IT could automate its internal workloads, IT could save money through that automation, and we could reinvest the savings in mission-critical IT expenditures (knowing that IT budgets were flat). It was born out of necessity, and since then, it has become a beacon of pride at NetApp.

Today, NetApp shares its own experience with our customers, and they love to hear about how their own vendor transformed itself into a digital software development company. It is all about leveraging data in driving software utility to change business models.

Looking Ahead — Where NetApp IT Goes Next

NetApp has aligned IT transformation with its cloud business strategy. Externally, NetApp envisions that its cloud strategy enables its customers to procure public cloud resources transparently and move workloads across clouds seamlessly. Part of NetApp's business model going forward is not only to

promote the sale of traditional storage to IT organizations for deployment in on-premises-based fully automated private clouds but crucially to also enable them to balance in their portfolio by moving workloads to public clouds seamlessly. To thrive in this new cloud-first world, NetApp must dramatically change its digital business and go-to-market models. It must interact with digital customers that its sales organization may never meet face to face. It's a very different approach from today where much of NetApp's sales is done via deep relationships built over years. Tomorrow, NetApp sees much of its customer base select its storage via the public cloud providers control panel.

Accordingly, NetApp IT is retooling its delivery platforms internally. Working in partnership with corporate marketing, NetApp IT is developing digitally enabled playbooks for its cloud customers. These playbooks are based on NetApp's own IT transformation and the company's own DevOps-as-a-service platform and are meant to guide customers that could test drive NetApp cloud service options as a part of their public cloud infrastructure-as-a-service investment. NetApp is attempting to educate them on best practices using its own experience as an example.

ADVICE FOR THE TECHNOLOGY BUYER

CIOs whose firms are undergoing digital transformation are seeing their constituencies change. The constituencies that they need to enable the most are software engineers. The new vision of CIOs then is to implement a scalable development environment, not just for their own organization (i.e., corporate IT) but for all software development organizations enterprisewide – this includes all the lines of businesses in their company. Such organizations need to spend their time developing rather than building development environments. Deploying a rapidly configurable DevOps-as-a-service platform enables product line developers to drive the transformation that ultimately accelerates business outcomes in a scalable manner. Such environments are highly elastic – they can be spun up or down. It is a full self-service, self-select environment. Speed is the new scale. CIOs must be agile, and they must be fast. They must empower their software developers to innovate, evolve, and bring new value to their external customers.

Of course, the deployment of a DevOps-as-a-service platform cannot be complete without "predict, prevent, and protect" enabled by platforms like NetApp Active IQ. Platforms such as Active IQ take IT service quality to an entirely new level. With such a platform, IT organizations can:

- Gain continual insights from machine learning algorithms that get smarter over time.
- Utilize prescriptive actions derived from predictive analytics to simplify data management.
- Spend less time managing infrastructure and more time on strategic activities.
- Accelerate issue resolution using a virtual support agent.
- Access their AI-derived analytics and predictions anytime and anywhere (using a mobile app).

NetApp's own IT transformation and reliance on Active IQ for the company's own DevOps-as-a-service platform have resonated amazingly with its customers. IDC is confident that this story (or similar stories) will resonate with non-NetApp organizations as well. Every door that NetApp opens, any industry it may be, every CIO has the same question. CIOs want to know how to pull those components together and build a similar agile CI/CD platform for their developers.

IDC'S POINT OF VIEW

Data is essential for any business to thrive in the digital economy. The software applications that provide insight as a utility are the vehicle with data as the fuel that powers it. One can develop any number of interesting algorithms and advisory mechanisms for gathering insight; however, they are no good if there is no data. It does not stop there. Implementing any kind of sophisticated AI/ML overlays requires lots of good quality data. As an example, for a driverless car to be effective on the road, the company need an awful lot of data points before it can make the car's navigation systems intelligent enough to be able to guide the car through the myriad of real-life conditions present on the road. In short, data is an asset – but lots of data is a bigger asset.

Companies of any size are realizing that their businesses have become data centric, and data management is front and center. For some, it is about tying analytics platforms into their decision-making process. Data then informs the businesses' decision-making workflow and influences customer engagement outcomes. For others, it is about using data to guide customers' behavior, help them understand the options available to them, and help them make an informed selection. The deployment of a platform like Active IQ that uses artificial intelligence and community wisdom to proactively protect and optimize their infrastructure provides scale and helps to derive consistent service quality. Such a platform can further enhance a developer- and operations-centric as-a-service platform that redefines the manner in which IT operators and developers collaborate with each other to accelerate business outcomes at scale.

As NetApp has shown, it begins and ends with customer experience. It is about customers believing that the firm they do business with has provided them additional value. According to said Bill Miller, NetApp CIO, "A data-driven transformation is a great journey to be a part of. It is a really great time to be a CIO." It could be stressful in the short term for CIOs as they find themselves at the crossroads of IT and digital transformation. In the long term, it is the ability for them to look back at how they helped transform their organization, the role they played in the evolution of their business and in increasing the value of their business.

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- *Digitally Transforming Enterprises Are Managing to Higher Levels of Storage and Data Availability* (IDC #US44938919, March 2019)

- *The Architecture Value Proposition for Digital Transformation* (IDC #US44660118, January 2019)

- *The Future of Technology Sourcing and Procurement - Part 1: Eliminate Siloed Sourcing to Support Digital Transformation* (IDC #US44518818, December 2018)

- *A DX Blueprint from the Digitally Determined* (IDC #US44321118, October 2018)

- *Digital Trust: The Key Driver for Digital Transformation* (IDC #US43986218, June 2018)

- *Digital Transformation Capabilities: Introducing the IDC DX Technology Capability Framework* (IDC #US42825417, June 2017)

Synopsis

This IDC Perspective discusses how NetApp – a technology provider – has transformed its own IT organization and, in the process, gained the respect of its customers undergoing this transformation themselves.

Technology providers are at the forefront of digital transformation themselves. For such companies, DX is both an internal and an external doctrine.

"In the short term, CIOs may find IT transformation stressful given the level of complexities they have to manage," said Ashish Nadkarni, group VP, Infrastructure Systems, Platforms, and Technologies at IDC. "In the long term, they can look back at how they helped transform their organization, the role they played in the evolution of their business and in increasing the value of their business."

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