

**THE VALUE OF DELL EMC STORAGE, DATA PROTECTION  
AND CONVERGED INFRASTRUCTURE  
FOR BUSINESS-CRITICAL DATA AND WORKLOADS**

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In today's enterprise, data is the lifeblood of business, lying at the heart of new initiatives driving growth and productivity. Whether it's a financial services firm employing AI and machine learning to better target specific consumer segments, a manufacturing company collecting and crunching millions of IoT data inputs to improve process efficiency, or a retail business analyzing real-time sales trends, every organization relies on continuously harvesting value from multiple data sources to power growth and more effectively compete. In a world in which better, smarter or quicker assessments of data can make the difference between becoming a market leader or falling behind, the strategic value of a company's data, or "data capital", has never been greater.

But while rapidly advancing technology innovations are enabling new opportunities to capture and drive value from data, legacy storage infrastructure is by and large failing to keep up, preventing companies from realizing the full potential of their data capital. As the volume, velocity and complexity of data continue to grow, firms are finding it challenging to effectively store and protect that data, let alone analyze and extract value from it while it's still fresh.

To get the most value out of their growing volume of data – structured (Oracle, Microsoft SQL Server, SAP HANA and other databases) and unstructured (text files, e-mail, videos, multimedia, web pages, etc.) – firms must choose their storage and data protection solutions carefully. Strong data security and availability capabilities are table stakes, as are robust data protection features. Buyers are demanding storage platforms with proven stability and reliability, with automated data services that are easy to manage across public and private clouds. With many organizations now looking first to the cloud to deploy their new and even some existing workloads, IT managers must have a "data first" mindset to ensure they can fully benefit from the value of their data assets.

To better understand what has motivated companies to choose Dell EMC storage and data protection solutions, we spoke with IT professionals in four different organizations, representing a range of employee counts, IT budgets and industries. To learn about each organization's story, we examined their business needs, data center environment, and top business and IT challenges. We then explored in detail the experience each customer has had in adopting, deploying and using Dell EMC storage and data protection solutions integrated with servers and networks in Dell EMC converged infrastructure systems, and how that experience has impacted the value they've realized from their data. Read on to learn about each customer's experience.



**THE STRATEGIC VALUE OF STORAGE AND WHY IT MATTERS**

When it comes time for a company to select a new storage solution, the choice has traditionally revolved first around the reputation and track record of the vendor and second around the quality and capabilities of the storage system itself. Will the storage system deliver the availability and performance the vendor has promised, and will it provide the best value over a 3- to 5-year life span?

While the storage platform is still a vital part of customers' decision making, an important new question is now entering into the purchase decision: which vendor and solution will enable us to get the most value out of our data, from the time it resides in primary storage to the time it is backed up to one or more secondary environments? This question has become even more relevant in the hybrid and multi-cloud era, in which the data landscape extends across the edge, core and cloud and functions such as data placement, data management and data protection become that much more challenging.

It is in this context that we recently spoke to several IT decision makers and practitioners, to get their perspectives on the strategic value of storage and how it drives their decision making. What are the key storage and data protection attributes and capabilities that help to unlock data value? The IT professionals we interviewed talked about building and optimizing data value by prioritizing investments in three major areas:

- **Enabling a simple multi-cloud data landscape.** In our conversations, we learned how important it is for data to be easily accessible to users at all times in a hybrid or multi-cloud environment, and to be stored close to the application(s) to enable local performance and a consistent user experience. The focus was primarily on the data and apps, rather than on the infrastructure. The data landscape must enable workloads of all types to scale without limitation, whether they are running at the edge, in the data center or in the cloud, and should enable those workloads to meet SLA requirements for availability and performance, while accommodating a range of consumption models.

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**“In the end, it’s not strictly about the infrastructure – it’s about the data and the apps that unlock their value.”**  
**(VP and CTO, Major U.S. Hospital System and Health Care Provider)**

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- **Streamlining and automating critical data services.** In addition to simplifying the user experience, the IT professionals we spoke with are looking to simplify storage management by automating many of the data services that their teams used to perform manually. For example, they would like the storage system to automatically take care of moving data between data center and clouds as needed, based on pre-defined policies, and intelligently placing it where and when it provides the most value. They would also like to have the storage solution help them to better manage the data while proactively monitoring and managing the health of the storage system, all with little-to-no IT intervention.

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**“It speaks to the design and robustness of Dell EMC storage and data protection that just three IT engineers are able to manage all our infrastructure.”** (Senior Manager of Private Cloud Services, ProMedica)

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- **Safeguarding data and making it available throughout its lifecycle.** To preserve data value, IT managers are very focused on securing and protecting their data assets and ensuring the data is always available. With the growing number of high-profile data breaches in companies of all sizes, data security is top of mind with everyone we spoke to. Companies find it challenging in heterogeneous, multi-cloud environments to meet recovery point and recovery time objectives (RPO/RT0) for data protection, and so this is a key focus for most

organizations. On top of all this, firms are having to comply with a growing number of regulations, from PCI to Sarbanes-Oxley to industry-specific regulations such as HIPAA, FedRAMP and FERPA.

“Given our limited IT resources and the need for an always-available IT infrastructure, we rely on Dell EMC Storage and Data Protection products to keep our business up and running.”  
 (Network Manager, Old Dutch Foods)

Companies’ storage and data protection solutions must satisfy all of these needs if they are to optimize data value.

**SOLUTION OVERVIEW**

Dell EMC storage solutions are at the core of the strategic value of data for the customers we interviewed. The Dell EMC strategy for storage and data protection solutions is best summed up with three simple words – “Best in Class ” – and that term can be used across the broadest portfolio in the industry. The customers we interviewed understood the value they received with Dell EMC solutions overall. Because of the breadth and depth of the available storage solutions each of these customers used we will highlight a few of the key products they were using. Figure 1 below shows a pictorial view of key members of the Dell EMC storage and data protection portfolio.

Figure 1: Dell EMC’s Storage and Data Protection Portfolio



SOURCE: DELL EMC

**Primary Storage**

Dell EMC offers some of the most flexible primary storage platforms available, providing a wide range of solutions to meet requirements for size, performance and scalability. Customers relied on Dell EMC Unity storage for cost-effective, general-purpose, mixed-application workload support. For companies that needed higher performance and even richer data services, customers chose XtremIO and

PowerMax storage options. PowerMax is based on an all-NVMe design, and along with predecessor VMAX, provides the highest availability features built-in.

### Unstructured Data

Customers that required large-scale data services such as those in Health Care relied on Dell EMC Isilon to provide petabyte (PB) scale. Isilon provides all-flash, hybrid and archival options for scale-out unstructured data and big data analytics.

### Data Protection

Dell EMC's Integrated Data Protection was the foundational element of customers' backup and recovery solutions. The backup systems include Dell EMC Avamar, NetWorker and Data Domain products integrated into one comprehensive solution. For those that want a turnkey solution Dell EMC provides an Integrated Data Protection Appliance (IDPA). In addition to array-based replication for DR, Dell EMC offers RecoverPoint/RP4VM software-based replication for business continuity.

**“My team isn't troubleshooting performance complaints, hardware issues or fighting fires. There's not much they have to do beyond upgrades. We've seen zero hardware failures. And greatly improved performance and reliability have increased employee satisfaction and productivity.”** (Mark Wiseley, Palmer College)

## REPORTS FROM THE FIELD

In the following customer reports, four Dell EMC customers share their strategic data viewpoints, the reasons they selected Dell EMC, and the major benefits they realized when they moved to Dell EMC storage solutions. These benefits include lower storage costs, simplified management, better data protection performance, integrated cloud storage and scalability.

**“Data is King, we can't afford any downtime and the data value will grow as we apply advanced analytics on patient outcomes.”**  
(VP and CTO, Major U.S. Hospital System and Health Care Provider)

The table below summarizes the companies and the titles of people we interviewed. We have also summarized each organization's major benefits and savings.

Organization	Major U.S. Hospital System and Health Care Provider	ProMedica	Old Dutch Foods	Palmer College
Title	<i>Vice President and Chief Technology Officer</i>	<i>Senior Manager of Private Cloud Services</i>	<i>Network Manager</i>	<i>CIO &amp; Director of IT</i>
Industry	<i>Health Care</i>	<i>Health Care</i>	<i>Food Manufacturing</i>	<i>Education</i>
1 <sup>st</sup> Benefit	Stability and uptime quality of the platform	Stability and uptime quality of the platform	Stability and reliability of the platform	Time and cost savings
2 <sup>nd</sup> Benefit	Increased productivity of staff	Reduced management resources	In-depth product knowledge	Simplified management
3 <sup>rd</sup> Benefit	Cost and time to market	Innovation and support	Cost and service	Better performance
Overall Strategic Data Value	We can't afford any downtime and the data value will grow as we apply advanced analytics on patient outcomes	People's lives are at risk if the system goes down	Without real-time data collection, the business would come to a standstill	Data is a strategic asset that enables us to maintain an edge over our competitors

## Gary Bimson – Old Dutch Foods

*Old Dutch Foods is a privately held company founded in 1934. The company is headquartered in Minnesota and has expanded operations across the United States and Canada. The firm has six manufacturing sites and participates in the snack food industry. Old Dutch Foods has over 5,000 employees of which 750 are IT users.*

*Gary Bimson is the Network Manager at Old Dutch Foods. Gary manages all of the core infrastructure including compute, storage and networking. Gary has been at Old Dutch Foods for 15 years and was directly responsible for selecting Dell EMC technology including the primary storage and backup systems.*

### WHY OLD DUTCH FOODS CHOSE DELL EMC

Old Dutch Foods moved to Dell EMC primary storage and data protection systems packaged in VCE Vblock converged infrastructure systems in 2012 and in 2016 refreshed those systems to a new model based on the latest Dell EMC Unity all-flash storage. Before standardizing on Vblock Systems (now branded as Dell EMC VxBlock Systems) running Dell EMC storage, Old Dutch Foods used a variety of individual vendors for their compute, storage and networking infrastructure and put together the solution themselves. During this same time, Old Dutch Foods underwent a digital transformation in the way it manufactures and distributes its products. The entire geo-dispersed supply chain was digitized and still relies on the value of the data being accessible 24x7x365 at the central data center in Minnesota. Gary realized then that because he is the primary caretaker of the infrastructure, he needed a cloud-like architecture to match the new requirements. Gary upgraded to another Dell EMC primary storage system running in VxBlock converged infrastructure in 2016. When asked why he chose Dell EMC for a second time over several competitive offerings, Gary responded: “When you have a great experience driving a car brand you really like, even a really hard sell won’t get you out of it.”

### THE DELL EMC ENVIRONMENT

Old Dutch Foods houses its IT infrastructure in two geographically dispersed data center locations. One active data center is in a colocation facility and the other in on the main campus of the corporate offices. The two systems (based on Dell EMC Unity All-flash arrays) are set up in an active-passive fail-over architecture using RecoverPoint for Virtual Machines to replicate between the sites. The passive site also hosts the test and dev environments for the application teams. Old Dutch Foods is nearly 100% virtualized based on VMware technology and runs 100% of its business applications on the Dell EMC converged infrastructure systems. Old Dutch Foods’ business-critical workloads are Microsoft apps including Windows Server, SQL and Exchange. For ERP systems Old Dutch Foods runs on JD Edwards EnterpriseOne and they use Oracle BI for analytics.

The primary method to achieve disaster tolerance is the RecoverPoint failover between the colocation site and corporate site, with RecoverPoint running in a VxBlock System at each site. A full disaster recovery (DR) test is performed annually. This DR approach was also used as a method to upgrade in 2016 from an older storage environment to the newer storage platform. In addition to RecoverPoint for business continuance, Old Dutch Foods uses Avamar and Data Domain backup and recovery in their VxBlock Systems for of single item restores. The Data Domain backups are also replicated across the VxBlock Systems in each of the two data centers. Old Dutch Foods plans to migrate backup and recovery capabilities to the new Dell EMC IDPA 4400 system soon. This integrated data protection appliance combines Avamar and Data Domain into one unit. Old Dutch Foods plans to use Dell EMC Flexible Consumption along with the new product to help transform the company from a CAPEX-driven financial model to an OPEX-driven, cloud-like consumption model.

### TOP DATA VALUE ENABLERS

- **Stability and reliability of the platform.** Since 2012, Old Dutch Foods has relied on the proven track record and resiliency of Dell EMC storage, data protection and converged infrastructure to

significantly reduce downtime and virtually eliminate the potential for major outages. Old Dutch Foods is a medium-size company that still has mission-critical needs; they can't afford to experiment with infrastructure or products that do not have a proven track record.

- **In-depth product knowledge.** Gary and his team have come to appreciate the deep knowledge and understanding they have of the Dell EMC products. In fact, Gary can singlehandedly manage the converged systems, including storage and data protection, himself based on 3 hours per month of management time, with major firmware and systems software upgrades to the latest Release Certification Matrix (RCM) standard taking only 30 hours about twice a year.
- **Cost and service.** Gary indicated that when he put the environment out for bid in 2016, Dell EMC was not the lowest price, but when considering the total cost of transitioning from a known product that had worked well over the four prior years, it was a no-brainer to stick with Dell EMC. Gary said, "If all vendors had products like Dell EMC's, the world would be a better place." In addition to price, Gary mentioned the outstanding service he gets and the fact that Dell EMC completely tests new software updates end-to-end before releasing an RCM update.

### THE STRATEGIC VALUE OF DATA

Data is the lifeblood of Old Dutch Foods' production lifecycle. The firm performs real-time data collection from the moment raw material is scanned and goes into inventory, to the time the finished product is loaded from the warehouse onto a truck. All of this data is stored and continuously updated on Dell EMC primary storage, and enables Old Dutch Foods to conduct an efficient and effective production process on a 24x7x365 basis. If access to their data were to be interrupted or compromised for even a small amount of time, production at their six plants would come to a standstill, resulting in downtime and lost business.

Old Dutch Foods also relies on continuous and reliable access to data to achieve and maintain compliance with the Safe Quality Food (SQF) standard, which governs food safety and quality throughout the production, transport and distribution of their products. Ongoing SQF compliance enables the company to gain broad retail acceptance and deep consumer trust.

Overall, data is a critical asset at Old Dutch Foods, critical to the health and growth of the company's business.

### WRAP-UP

"Given our limited IT resources and the need for an always available IT infrastructure, we rely on Dell EMC storage, data protection and converged infrastructure to keep our business running without the need to actively manage our infrastructure."

"With Dell EMC converged infrastructure systems, all the infrastructure components play nice and work well together."

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## VP and CTO, Major U.S. Hospital System and Health Care Provider

*This hospital system and health care provider manages six hospitals, including more than 1,000 physicians, 2,000 nurses and other clinicians in several U.S. states.*

*We interviewed the Vice President and Chief Technology Officer, who manages the infrastructure team and sets the technical direction of the organization's health care network.*

### WHY THE HOSPITAL SYSTEM AND HEALTHCARE PROVIDER CHOSE DELL EMC

This major hospital system moved to Dell EMC at a time when it was considering a refresh of antiquated solutions running on IBM AIX. This decision was also driven by a strategic move of Epic Systems software onto a more open Linux-based virtualized system. After doing due diligence, management

chose Dell EMC over the competition to fulfill a need for proven high-quality solutions to host their mission-critical workloads while still simplifying the infrastructure environment. The organization's senior IT leadership put a high value on the resilience of Dell EMC storage and their integration with server and network components in Dell EMC converged infrastructure systems to ensure continuous access to the electronic health records of their patients. The flexibility of storage, and in particular the ability to mix and match storage technologies within a VxBlock System to the workloads running on them, was also key to the decision to go with Dell EMC. Though cost was not the primary objective, the organization was able to save 10% off the initial CAPEX cost versus the leading alternative. They were also able to save an additional \$2.4M over 4 years by leveraging the Dell EMC Transformational License Agreement (TLA) for the storage software licenses.

### THE DELL EMC ENVIRONMENT

The health care provider is in the process of consolidating twelve data centers into two primary, geographically dispersed data centers each with a VxBlock System running their consolidated mission-critical workloads in an active-passive failover mode. Over time as the utilization grows, they will configure the matching pairs of Dell EMC storage arrays and data protection in the VxBlock Systems into an active-active configuration to optimize the workload balance. The organization uses a VMAX array for Epic EHR running on top of a Clarity Database and another PowerMax to run the cognitive data warehouse called Epic Caboodle. In addition to VxBlock environments, they are using VxRail to host Citrix VDI workloads as a front-end to Epic on the VxBlock Systems and using Isilon to maintain long-term PACS images at the back-end of the VxBlock Systems.

The primary method to achieve disaster tolerance is active-passive failover between remote data centers, and they alternate which data center is active by switching from one to the other every 6 months. Dell EMC Data Domain systems are employed for secondary backups, with backups replicated remotely across the data centers. The organization incorporates the Dell EMC Air Gap backup solution to protect against ransomware. Finally, they are using Microsoft Azure to host long-term backups and archives as part of a hybrid cloud environment.

### TOP DATA VALUE ENABLERS

- **Stability and uptime quality of the platform.** The hospital system relies on the proven track record and resiliency of the Dell EMC storage, data protection and converged infrastructure to significantly reduce downtime and virtually eliminate the potential for major outages. In evaluating vendors, the VP/CTO places a big emphasis on the "trust factor", and Dell EMC has delivered with systems that have been rock solid and have helped keep his apps up 100% of the time.
- **Increased productivity of staff.** Designed to be simpler to use and manage, Dell EMC storage and data protection in converged infrastructure have enabled the IT team to reduce hands-on administrative effort by 1000's of hours per year, representing a 50% reduction in staff-related operational costs. They no longer live in operational silos and their focus has increasingly shifted away from "keeping the lights on" to more important tasks.
- **Cost and time to market.** While the VP/CTO values the 10% CAPEX savings he achieved with Dell EMC, he is taking a more holistic approach to cost savings overall. He continues to streamline his IT teams, and is taking advantage of Dell EMC's innovative and flexible TLA licensing program to pay only for the storage software he needs, further optimizing costs. The VP/CTO also highly appreciates the rapid time-to-value Dell EMC has provided, with just 45 days between system order date and full production deployment. He stated that the systems were hosting production workloads their first day on the floor.

### THE STRATEGIC VALUE OF DATA

According to the VP/CTO, data is "King" at the hospital system and health care provider. The organization ingests and analyzes large volumes of incoming data streams every day, which provides valuable insights on how they can further improve patient care and enrich the quality of patients' lives.

Dell EMC storage plays a vital role in this process, helping to ensure that the data is always available as it is analyzed and stored. This highlights one of the primary reasons that they chose Dell EMC: the systems and data must never go down. The VP/CTO is very happy not to have experienced any downtime from their VMAX and PowerMax based systems.

The VP/CTO is also concerned about ransomware attacks, which have been increasing in frequency across virtually every industry over the past few years. To guard their data from the threat of such attacks, his team is using the Dell EMC Air Gap solution for backup, which eliminates the risk of infection to healthy backups.

Finally, the VP/CTO emphasized the importance of Dell EMC service and support in maintaining the health and integrity of his systems and data. When his team calls for support, Dell EMC “calls in the cavalry” to address and resolve the issue, enabling incidents to be resolved quickly, before they impact system uptime or performance.

### WRAP-UP

“Data is King,” said the VP/CTO when asked about the strategic value of their data, “we can’t afford any downtime and the data value will grow as we apply advanced analytics on patient outcomes.”

“In the end, it’s not about the infrastructure – it’s all about the data and the apps that unlock their value.”

“We’re bracing for unbelievable amounts of data coming at us, and that data contains many of the answers that help us to improve patient care and the quality of their lives.”

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## Steve Cooper – ProMedica

*ProMedica is a non-profit health care system that was founded in 1986. The ProMedica network consists of 56,000 employees and 2,100+ physicians in 28 states. ProMedica is one of the largest medical health providers in the United States, with revenues exceeding \$7B annually.*

*Steve Cooper is the Senior Manager of Private Cloud Services at ProMedica. Steve directly manages the Converged Infrastructure/Data Center Networking team of ProMedica, which also includes the technical applications that are a part of the EHR systems.*

### WHY PROMEDICA CHOSE DELL EMC

ProMedica was an early adopter of Dell EMC storage and data protection, initially becoming a customer in June 2014. Since then, they have gone through numerous upgrade cycles and fully adopted the converged infrastructure approach to managing their storage and data protection. Before using Dell EMC, they were using a reference system based on NFS over FCoE storage. The system had numerous outages, and the vendors tended to blame each other for quality issues. After moving to Dell EMC, ProMedica was able to reduce the number of people managing the infrastructure from 12 down to just 3 engineers. With the staffing savings, ProMedica was able to reassign two engineers to focus on medical imaging, which has been growing rapidly and now consumes 2+ PB of storage.

### THE DELL EMC ENVIRONMENT

ProMedica has four Dell EMC storage systems running in production, two based on first-generation XtremIO and two based on VMAX. With Dell EMC, ProMedica was able to upgrade their storage from a Dell EMC VNX to a mixed storage environment of both XtremIO X2 and VMAX arrays running concurrently. These four arrays, deployed in Dell EMC VxBlock converged infrastructure systems, run all of ProMedica IT workloads including web services, VDI and their Epic EHR systems. Also, ProMedica has over 2 PB of picture archiving and communication system (PACS) data on Dell EMC Isilon scale-out network attached storage.



For disaster tolerance, the systems are configured in an Active-Active configuration across a significant geographic distance. In addition to the protection afforded by array replication, ProMedica has deployed secondary backup based on Data Domain and Avamar, which are also deployed with the VxBlock Systems. Data Domain system backups get cross-replicated between data centers. As a next step, Steve plans to look at Dell EMC Data Protection Suite integrated into the solution later this year.

### TOP DATA VALUE ENABLERS

- **Stability and uptime quality of the platform.** Platform uptime is essential in a health care environment, to ensure uninterrupted patient services and a high quality of care. Steve also really likes the ability to directly connect external dedicated servers into the mission-critical storage devices within the converged infrastructure and still get one-stop support from Dell EMC.
- **Reduced management resources.** Steve is now able to manage the environment with just three dedicated team members that handle the entire infrastructure, focused respectively on Storage, Compute and Network, with each of the three also trained in Virtualization and Data Protection.
- **Innovation and support.** Steve values the truly integrated approach of Dell EMC. Steve says, “Dell EMC was the first to converge the infrastructure.” Steve appreciates the “one throat to choke when dealing with support.” Steve commented, “I can count on the fingers of one hand the times I’ve had to go beyond the 1<sup>st</sup> line of support. Their first line of support is better than most vendors’ 2<sup>nd</sup> and 3<sup>rd</sup> line support.”

### THE STRATEGIC VALUE OF DATA

For any health care system that provides Level 1 care, people’s lives are at risk if the system goes down. Operating under those conditions, you can argue that data has nearly infinite value, if it is helping to keep a patient alive. With the stakes (and the cost of failure) so high, companies in the health care industry tend to go with trusted vendors, especially when evaluating how they can best protect and enhance the value of their data.

Steve mentioned several times how important it is that these systems not have any downtime. In fact, whenever ProMedica experiences a system outage, the IT department must correlate the impact of the outage on patient outcomes during that time by performing a cross-functional “Patient Safety Initiative”. Over the past year, Steve has had only 2 minutes of downtime associated with their XtremIO-based system and no downtime related to the VMAX-based system.

### WRAP-UP

“People’s lives are at stake,” said Steve when asked about the strategic value of their data, “every system outage in IT must be reviewed and correlated with all patient outcomes during the outage.”

“Once systems are delivered, the time to get them up and running is crazy fast. This breakneck speed is possible because of the groundwork (e.g. preconfiguring, auto provisioning of systems) that Dell EMC does ahead of time.”

“It speaks to the design and robustness of Dell EMC storage, data protection and converged systems that just three IT engineers are able to manage all that infrastructure.”

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## Mark Wiseley and Shad Stark – Palmer College

*Palmer College of Chiropractic was founded in 1897, the first school of chiropractic in the world. Today the College has three campuses each in Iowa, Florida and California.*

*Mark Wiseley is the CIO and Shad Stark is the Director of IT Infrastructure and Operations at Palmer. Mark and Shad oversee IT operations, desktop support, application development and infrastructure across all three campuses.*

### WHY THE COLLEGE CHOSE DELL EMC

When Mark began his role at the college, he saw that the data center could not run a modern multi-campus infrastructure. The components were also outdated, and were causing serious performance issues and traffic bottlenecks.

The College agreed to build a new data center and furnish it with new equipment. Mark decided to look at converged options instead of doing piecemeal upgrades and working with multiple vendors. He looked at HP, Dell EMC, Nutanix and a few other vendors. He chose Dell EMC and bought a VxBlock converged infrastructure system with XtremIO for primary storage and integrated backup with Avamar and Data Domain.

Mark said, “When it came down to it, Dell EMC gave us a single converged system that quickly took us from zero to one hundred.”

### THE DELL EMC ENVIRONMENT

Before ordering the equipment, the Dell EMC team joined Mark and his team to scout a new location for the data center on the Iowa campus. Mark said, “We walked around with the reps. They helped us to assess our energy requirements, cooling needs and equipment weight. This was a lifesaver as the equipment was too heavy for the second floor. This preparation allowed us to have our environment ready to go as soon as the equipment arrived. It was a great experience.”

With help from a Dell EMC support team, the new VxBlock converged infrastructure system equipment was up and running within three to four days. Within two weeks, the production environment was migrated onto the new system, with XtremIO providing primary storage. Palmer currently runs all the college’s application workloads on the XtremIO and because of its performance and inherent data efficiency can fit the entire college’s data requirements on just one system. The system hosts business-critical applications such as student enrollment, billing, and class scheduling, based on Microsoft SQL server, Microsoft Exchange and Dynamics GP, among others.

For disaster tolerance and backup and recovery, Palmer relies on Avamar and Data Domain in Iowa and Florida to back up and replicate servers, laptops and desktops across all the campuses. When a hurricane threatened the Florida campus, the college shut down that campus and data center, but was able to successfully access critical data from Florida that was backed up in the Iowa data center. Avamar and Data Domain run within VxBlock in Iowa and are standalone in Florida. Palmer is now exploring the possibility of upgrading to a Dell EMC IDPA DP4400 with replication to Microsoft Azure for cloud-based DR.

### TOP DATA VALUE DRIVERS

- **Time and cost savings.** Before installing the XtremIO-based system, the team spent 20-30% of their week dealing with performance issues and constantly making tweaks. Not anymore. “My team isn’t troubleshooting performance complaints, hardware issues or fighting fires. There’s not much they have to do beyond upgrades. We’ve seen zero hardware failures. And greatly improved performance and reliability have increased employee satisfaction and productivity.” Palmer College has also reduced storage costs through better storage efficiency. Leveraging Dell EMC Data Domain deduplication, Palmer has achieved a compression factor of 38:1 on backup data.

- **Simplicity.** The VxBlock System configures everything properly in one place, and the team does not have to deal with multiple vendors pointing fingers at each other. The management interface is also simple to use. “Avamar is especially easy to restore. I don’t restore files too often, but when I need to it’s very simple to do. This saves us time and is very easy for our users to use when they need to restore a file.”
- **Performance improvement.** In the past, Palmer had performance issues with Veeam when backup operations would slow down their systems. Backups are now very fast and efficient due to three factors: the backup network is built within the overall converged system design, Avamar uses source-side deduplication, and it only backs up data changes. “With Avamar, backups have no impact on production systems and a 30-minute backup window is possible.”

## THE STRATEGIC VALUE OF DATA

Palmer College is a pioneer and a leader in chiropractic education, but is not the only educational institution offering it. Data integrity and accessibility is critical to keeping college operations running. A storage outage or other disruption would negatively impact student enrollment, and if it was serious enough, the college’s reputation as well. In this respect, data is a strategic asset that enables Palmer College to maintain its edge over other schools that offer chiropractic training.

Another area in which data plays a key role is in chiropractic research. Palmer College continues to spawn new research initiatives focused on chiropractic health and treatment, accelerating innovation and allowing the college to stay ahead of the pack. The college has been employing virtual reality and augmented reality to enhance its research and learning environments, and to enable professors and students to make more productive use of the rapidly growing body of research data.

In the course of its academic and business operations, Palmer College must comply with a number of industry regulations, such as HIPAA for privacy of electronic health records such as PACS images, FERPA for accessibility and privacy of student records, and PCI for patient and student billing. Dell EMC data storage and protection solutions play a key role in enabling and ensuring compliance.

Data is invaluable in other ways as well – it touches everyone associated with the college, from students and their families to employees to alumni. For example, Palmer College has a number of ongoing programs and services that target alumni, and these rely on all the data that they have on their graduates and their journey beyond graduation. This information enables the college to tailor their communications and programs to individual alumni, fostering loyalty and participation and enriching the alumni experience.

Looking at the bigger picture, as Palmer College moves in the direction of a hybrid cloud infrastructure, they can be confident that Dell EMC will help them preserve the strategic value of their data, including by offering them a choice and flexibility in how and where the data is stored and protected.

## WRAP-UP

“Our data is invaluable – it touches everyone, from students to families to employees. The journey doesn’t stop upon graduation, so we capture data about relationships that can last a lifetime. This data becomes our lifeblood – we couldn’t exist without it.” (Shad Stark, Palmer College)

“The Dell EMC team validates everything ... so we know we will be good to go before we do installations and upgrades. This is a huge time saver and significantly reduces risk.” (Mark Wiseley, Palmer College)

“My team isn’t troubleshooting performance complaints, hardware issues or fighting fires. There’s not much they have to do beyond upgrades. We’ve seen zero hardware failures. And greatly improved performance and reliability have increased employee satisfaction and productivity.” (Mark Wiseley, Palmer College)

## SUMMARY OF CI DRIVEN VALUE

In the process of exploring the strategic value of storage and data protection with Dell EMC customers, we uncovered the strategic value of Dell EMC converged infrastructure. The Dell EMC customers interviewed were using various versions of VxBlock Systems, now consolidated as one turnkey product called VxBlock System 1000 with more technology options, scalability and automation.

**“Once systems are delivered, the time to get them up and running is crazy fast. This breakneck speed is possible because of the groundwork (e.g. preconfiguring, auto provisioning of systems) that Dell EMC does ahead of time.”**  
(Steve Cooper, ProMedica)

The VxBlock 1000 simplifies IT into multi-technology architecture with a rich and extensible pool of resources that enables customers to start with any workload or set of mixed workloads and efficiently adapt to new workload requirements within the same system. VxBlock 1000 supports the wide range of Dell EMC best-in-class storage and data protection, including the flagship, very high-performance/high-availability PowerMax (the next-generation VMAX) based on an NVMe design; XtremIO X2 with rich data reduction; Unity and Unity XT for general-purpose workloads; Isilon for unstructured/big data storage; integrated data protection options including Data Domain, Avamar and RecoverPoint; plus a wide range of integrated servers and network devices. The unique VxBlock 1000 architectural approach, combining multiple storage array and data protection options in one system, is important because organizations can assign specific resources to meet each workload’s unique requirements, eliminate stranded, underutilized assets, and maximize asset utilization as a shared resource pool within a single system. This translates into CapEx/OpEx benefits through greater economy of scale and simpler data center administration.



The following table summarizes the companies and titles of people we interviewed. We have also summarized each organization’s major CI benefits and savings.

Organization	Major U.S. Hospital System and Health Care Provider	ProMedica	Old Dutch Foods	Palmer College
Title	<i>Vice President and Chief Technology Officer</i>	<i>Senior Manager of Private Cloud Services</i>	<i>Network Manager</i>	<i>Senior Director of IT / CIO</i>
Industry	<i>Health Care</i>	<i>Health Care</i>	<i>Food Manufacturing</i>	<i>Education</i>
Data Center Reliability	100% availability	Nearly 100% availability	5+ years without issues or data loss	Zero hardware failures
Data Center Efficiency	50% less staff related operational costs	75% less staff required to manage infrastructure	Admin costs down to one part-time person 3 hours per month	20-30% time savings/week to deal with performance issues

## TANEJA GROUP OPINION

In an era driven by digital transformation, data is playing an increasingly central role. For those companies that learn how to capture, mine and harvest it, data is becoming the fuel that businesses run on, accelerating their growth and driving competitive differentiation. With the volume of business, technical and customer data continuing to grow exponentially, innovative firms are doing everything in their power to more effectively ingest and analyze data and harness its value ahead of their rivals.

In this field study, we learned first-hand the value that organizations place on their data. For example, in the case of the two health care organizations we spoke with, data often holds the keys to achieving the correct diagnosis and optimal recommendations for treatment and care, which for patients can mean the difference between health and sickness or even life and death. The food manufacturing company we interviewed captures and analyzes data at every phase of their production lifecycle, helping them to optimize manufacturing quality and efficiency.

Another of our interviewees, the chiropractic college, relies on data integrity and accessibility to drive processes as diverse as research and student enrollment, enabling them to stay ahead of the pack, and views data as the fabric that ties together the relationships with all of their stakeholders, including students, families, employees and alumni. All of these organizations must meet SLA objectives for data availability and application performance, while also complying with a host of regulations governing data privacy, security and integrity.

To maximize data value in this complex IT landscape, our research participants are relying on their storage and data protection systems more than ever before. These IT managers and executives have all experienced storage system failures of one kind or another in past lives, and so when it comes to a choice of storage vendor and solution, their standards are very high.

The interviewees selected Dell EMC solutions to meet their primary storage and data protection needs, and the stories they related about their ongoing customer experience have validated that choice. Dell EMC converged infrastructure solutions have given these IT professionals the day-to-day confidence that their storage and data protection SLAs will consistently be met, enabling them to fully harness and benefit from the strategic value of their data.

If maximizing data value is important to your organization, consider Dell EMC the next time you are refreshing or upgrading your storage and data protection systems. The organizations we spoke with are happy they did.

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