



# The Business Value of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail

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# Executive Summary

**There is a seismic shift underway within the datacenter infrastructure industry that is driven by the need to streamline IT processes so that IT teams make decisions based on business outcomes.**

Today's hyperconverged infrastructure (HCI) solutions are able to help IT teams achieve these new business-driven goals by collapsing traditional datacenter infrastructure silos (servers, storage area networks [SANs], and shared storage) into modern infrastructure that is server-based, software-defined, and scale-out in nature.

Today's most innovative and impactful HCI solutions, such as Dell EMC VxRail, extend these valuable core benefits by supporting increased interoperability between public and private cloud platforms.

IDC spoke with Dell Technologies customers that are running business-critical applications that support most of their revenue-generating activities on Dell EMC VxRail or VMware Cloud Foundation on Dell EMC VxRail (collectively, Dell EMC VxRail) to understand the impact on their IT and business operations. Study participants described achieving strong value with Dell EMC VxRail by establishing a cost-effective, efficient, and agile IT infrastructure that enables automated operations capable of stretching from their datacenters to cloud and edge environments delivering value to the business through scalability and improved performance with

## DELL EMC VXRAIL BUSINESS VALUE HIGHLIGHTS

**452%**  
five-year ROI

**10 months**  
to payback

**92%**  
less unplanned  
downtime

**72% lower**  
operational costs, IT  
staff time and lost  
productivity, unplanned  
downtime

**70% more**  
productive, impacted  
IT teams

**51% lower**  
five-year cost of  
operations

**>2x more**  
new applications  
developed per year

Intel Optane and other processors. IDC calculates interviewed Dell Technologies customers will achieve benefits worth an annual average of \$2.64 million per organization (\$128,700 per 100 users) by:

- **Optimizing IT infrastructure costs** by running business-critical workloads on a consolidated, high-performing platform that also delivers improved application reliability, functionality, and performance
- **Delivering more value with IT teams** by reducing day-to-day operational work through functionalities such as one-touch deployments and automated patching and updates, thus freeing up time to work on higher-value IT projects or business-driven projects
- **Minimizing costs and risks associated with unplanned outages and data loss** by bringing down the frequency and duration of unplanned downtime events and improving their ability to back up, protect, and recover data and virtual machines (VMs)
- **Generating value for the business** by ensuring that IT can support business expansion efforts, support more effective and productive development activity, and provide a better user experience

## Situation Overview

The emergence of a truly digital economy has driven enterprises around the world to begin essential business transformation projects unlike any other they may have gone through in the past. These transformational undertakings are often driven by a need for companies to leverage new, modern technologies to better compete in shifting markets, create deeper customer relationships, and capitalize on new sources of revenue.

Such transformational undertakings have also placed considerable pressures on IT departments to actively address long-standing inefficiencies to become more agile and responsive to rapidly changing business needs. A core contributor to such inefficiencies is the way in which datacenter infrastructure is often purchased and deployed as silos of resources that are managed independently by corresponding silos of experts. This has led to an untenable capex/opex gap within the datacenter where every dollar spent purchasing infrastructure (capex) is followed by multiple dollars of spending on power, cooling, and management of that infrastructure (opex). Such environments are clearly antithetical to the needs of IT teams looking for new levels of scale, automation, and agility within the datacenter. Today's modern infrastructure must lower capex and increase operational efficiency without sacrificing application performance or introducing new risks that could bring an application offline.

Many organizations are turning to hyperconverged infrastructure to address these challenges within their datacenter. HCI solutions represent modern architectures with new design tenets (e.g., standardized building blocks, automated management, self-healing, nondisruptive scaling) that drive massive operational improvements to core infrastructure management tasks.

## Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail

Dell EMC VxRail HCI systems are jointly engineered with VMware, providing a fully integrated HCI solution that enables automated operations capable of stretching from datacenter to cloud and to edge environments. For customers looking to deploy a private or hybrid cloud, Dell EMC also offers VxRail fully integrated with VMware Cloud Foundation and SDDC Manager.

At a broad level, the joint engineering efforts between Dell Technologies, Intel, and VMware help create five technology pillars that are critical to the business value outcomes covered within this paper. These tightly integrated technologies are:

- **Dell Technologies' PowerEdge servers** combine cutting-edge server and storage technologies with advanced systems management software that connects seamlessly into the higher-level management software to provide deep system monitoring and management through a single control plane.
- **VxRail supports the full Intel portfolio** of second-generation Xeon processors, Optane SSDs, and Optane persistent memory. Migrating to the newest generation of high-performing and energy-efficient Intel-based hardware tunes a datacenter for highly optimized performance across a broad set of enterprise workloads while lowering costs and improving resource utilization.
- **VMware's suite of software-defined datacenter (SDDC) software** includes VMware vSAN, vSphere, vCenter Server, and vRealize Log Insight. VMware Cloud Foundation, including NSX and vRealize Suite, is also available for customers wanting to deploy a full cloud stack and complete cloud management tools.
- **VxRail HCI System Software is the management software** that runs on top of the VMware software and the PowerEdge server to allow VxRail to act as a singular unified system. VxRail HCI System Software comprises the following:
  - **VxRail Manager** is the primary management engine for all VxRail operations related to deploying, managing, upgrading, patching, and node scaling within a cluster. VxRail Manager is natively integrated with (and accessed via) vCenter to provide unified operations.

- **SaaS multicloud management** is handled by AI-driven analytics software designed to help customers proactively make critical decisions that optimize a system's performance and availability. This software provides detailed health checks and predictive analytics and further simplifies the upgrade process by pre-staging all required components for individual cluster upgrades.
- **Back-end ecosystem connectors** are API-based services that connect to infrastructure components such as vSAN, PowerEdge servers, and networking to support automation and orchestration services for cluster management and end-to-end life-cycle management (LCM).
- **Broad set of RESTful APIs** are made publicly available to customers to deliver greater cloud and IT automation extensibility.
- **Automated life-cycle management** functionality automatically updates clusters with pre-validated, pre-tested software and firmware components, ensuring the infrastructure is in a continuously validated state.
- **Electronic compatibility matrix** serves as a compliance asset that validates and ensures all possible configuration and upgrade path permutations are sound. This enables customers to choose the desired continuously validated state to optimize each cluster for its respective workloads.
- **Data protection software** is embedded to ensure seamless data protection operations. Customers can choose RecoverPoint for VMs or VMware vSphere Replication.

# The Business Value of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail

## Study Demographics

IDC conducted research that explored the value and benefits for organizations of running applications on Dell EMC VxRail and VMware Cloud Foundation hyperconverged infrastructure solutions. The project comprised 10 interviews with Dell Technologies' customers that had experience with or knowledge about the benefits and costs of using the Dell EMC VxRail platform. Interviewed organizations were asked a variety of quantitative and qualitative questions about the impact of using Dell EMC VxRail on their IT operations, business outcomes, and costs.

Table 1 presents study demographics and profiles. The organizations interviewed had an average of 6,267 employees along with average annual revenue of \$2.46 billion, demonstrating an enterprise-like overall profile. Geographical regions represented were the United States (8), the United Kingdom, and the United Arab Emirates (UAE). In addition, there was a good mix of vertical markets, namely, the food and beverage, hospitality, higher education, insurance, local government, manufacturing (3), nonprofit, and service provider telecommunications sectors.

TABLE 1

### Demographics of Interviewed Organizations

Firmographics	Average	Median	Range
Number of employees	6,267	1,325	450 to 50,000
Number of IT staff	210	48	17 to 1,500
Number of business applications	347	88	20 to 2,500
Revenue/budget per year	\$2.46 billion	\$425.0 million	\$100 million to \$15 billion
Countries	United States (8), United Kingdom, and UAE		
Industries	Food and beverage, hospitality, higher education, insurance, local government, manufacturing (3), nonprofit, service provider telecommunications		

n=10 Source: IDC, 2020

## Choice and Use of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail

Interviewed organizations described their decision to deploy Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail. They considered the fact that Dell EMC VxRail offered benefits common to modern hyperconverged infrastructure, including having a single resource-flexible pool of compute and storage in support of business-critical applications. Further, study participants cited the platform's strong automation capabilities and software-defined processes. They also stressed that they viewed Dell EMC VxRail as a path for cost-effectively future proofing their IT environment in terms of scalability and reliability. Study participants elaborated on why they chose Dell EMC VxRail rather than other hyperconverged solutions or infrastructure approaches:

- **Driver of modernization, greater focus on development, city of Amarillo:** *"We chose Dell EMC VxRail as part of a modernization effort. We wanted to go hyperconverged primarily for the decreased operational overhead and to simplify operations so we could re-task resources to development. This allowed us to expand services and not spend so many cycles on operations."*
- **Cost efficient compared with other solutions and public cloud, U.S. food and beverage company:** *"We chose Dell EMC VxRail because of the cost. When we compared the cost of owning VxRail with the public cloud, we found we could basically buy our hardware with VxRail for what it would have cost us for one year to run the same applications in the public cloud."*
- **Future proof IT in terms of scalability, reliability, and performance, Atlantis, the Palm, Dubai:** *"We needed an overhaul of our datacenter and wanted to position our company as revolutionary in datacenter operations with best-in-class transactional capabilities .... We needed to make sure that whatever investment we made was scalable, reliable, and future-proof while having a strategic partner who would be with us on the journey. VxRail checked all of these boxes."*

The decision points involved in selecting VMware Cloud Foundation on Dell EMC VxRail were similar to those for Dell EMC VxRail but more closely associated with a stated desire to establish and generate value from hybrid cloud environments. Organizations using VMware Cloud Foundation on Dell EMC VxRail cited various factors such as the operational benefits of simplifying the management of cloud workloads and the ease of moving applications within their hybrid clouds. Strong embedded security functionality and reduced operational risk were also cited as key factors in decisions:

- **Ease of using cloud resources and administration, Atlantis, the Palm, Dubai:** *"We've already started using VMware Cloud Foundation on Dell EMC VxRail for disaster recovery. We want to be able to access cloud applications in the event of outages .... Also, VCF on VxRail provides ease of administration. It's an easy exercise to spin up a test application in the cloud."*
- **Ability to create and use hybrid cloud, U.S. insurance company:** *"VMware Cloud Foundation on Dell EMC VxRail will allow us to take advantage of the cloud when it's a good fit but manage it like it's on premises .... We were getting a lot of inquiries from the business about more use of cloud in the face of the hardware costs associated with different projects. We're hoping that we can make better use of cloud when it's cost effective."*
- **Hybrid cloud simplification and security, city of Amarillo:** *"We think that VMware Cloud Foundation on Dell EMC VxRail will greatly simplify the management of cloud workloads. In terms of security, it will reduce risk because it's a consistent security model and more operationally familiar to us."*



Table 2 shows interviewed organizations' use of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail. Importantly, study participants reported that most of their revenue (79% on average, median of 100%) was tied to applications and services running on these platforms, underscoring their importance and criticality for those companies. A similar indication of how much study participants relied on these platforms is evident from the scale of their Dell EMC VxRail environments, with nearly 40 nodes (38 on average) supporting more than 100 business applications leveraging an average of 712 virtual machines and 470TB of storage.

TABLE 2

### Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail Use by Interviewed Organizations

	Average	Median	Range
Number of nodes	38	17	6 to 200
Number of VMs	712	350	150 to 2,500
Number of terabytes (TB)	470	250	40 to 1,400
Number of applications	103	88	10 to 250
Number of users	2,048	945	36 to 12,250
Total revenue (%)	79	100	7–100

n=10 Source: IDC, 2020

## Business Value and Quantified Benefits

Interviewed organizations spoke to the value of using Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail as a cost-effective, efficient, reliable, and high-performing infrastructure for running many of their most critical business applications. They credited it with allowing them to create an agile and scalable infrastructure that moves at the speed of their businesses, whether in normal business conditions or extraordinary conditions such as those imposed by the COVID-19 pandemic:

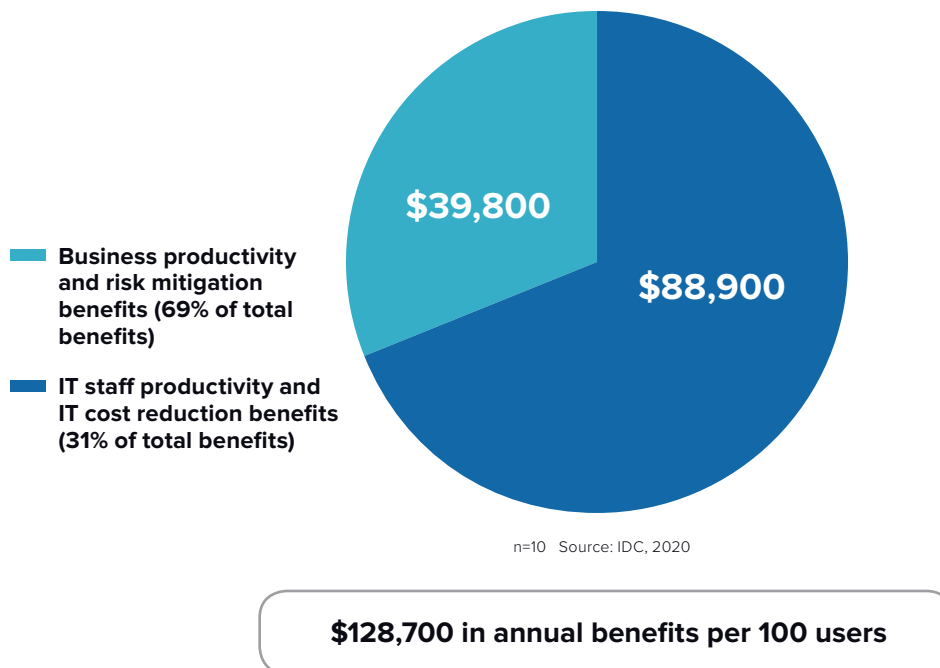
- **Ability to establish a true SDDC, U.S. insurance company:** *"VMware Cloud Foundation on Dell EMC VxRail has had a big-time impact on our ability to create an SDDC. It has pervasively been the means by which we've achieved a software-defined datacenter. We could not have done that without it."*

→ **Agility to meet operational needs, city of Amarillo:** *"Dell EMC VxRail has been huge for us in responding to changing conditions. With COVID-19, we've been able to spin up multiple applications for public health in days, sometimes minutes .... We can very rapidly respond to changing needs."*

Based on interviews with Dell Technologies' customers using Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail, IDC projects that they will achieve benefits worth an annual average of \$128,700 per 100 users (\$2.64 million per organization) (see Figure 1) in the following areas:

- **Business productivity and risk mitigation benefits:** Study participants linked revenue gains and higher user productivity levels to improved application reliability, functionality, and performance. IDC projects that they will realize higher revenue and productivity worth an annual average of \$88,900 per 100 users (\$1.82 million per organization).
- **IT staff productivity and IT cost reduction benefits:** Study participants benefit from having a streamlined, efficient, and automated IT infrastructure. IDC calculates that they will see IT staff time savings and productivity gains along with IT infrastructure cost savings worth an average of \$39,800 per 100 users per year (\$0.81 million per organization).

**FIGURE 1**  
**Annual Average Benefits per 100 Users**



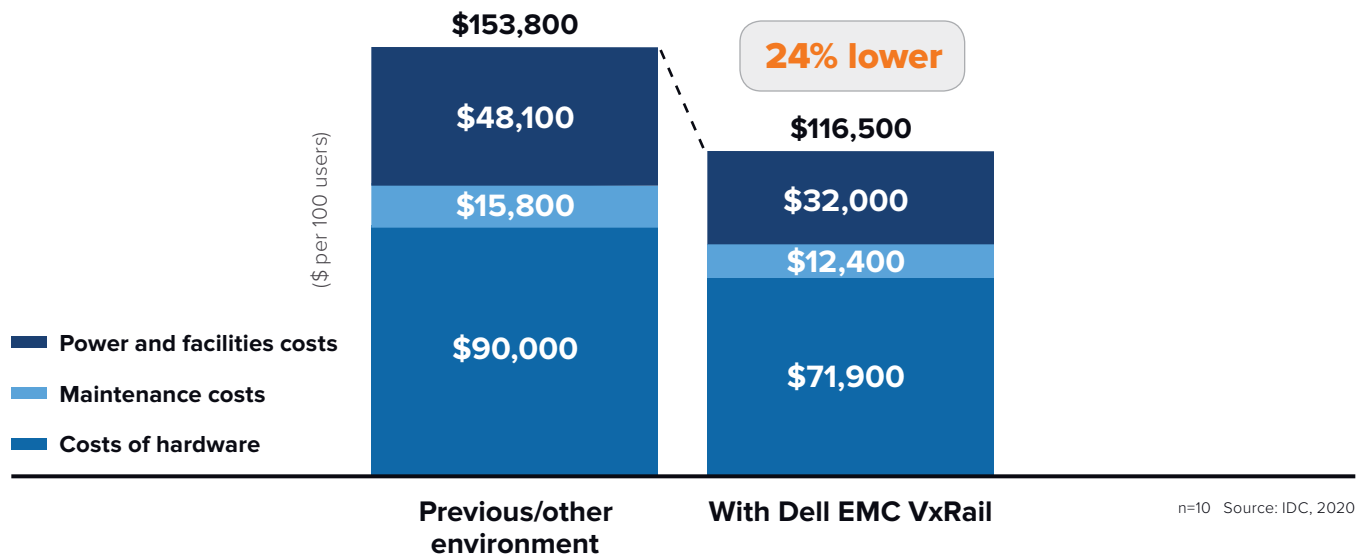
## IT Infrastructure Cost Savings

Replacing distributed on-premises infrastructures with the higher-performing, hyperconverged Dell EMC VxRail platform has enabled significant infrastructure-related cost savings. Study participants appreciated that the platform allows them to rationalize and optimize infrastructure costs by consolidating compute nodes and SANs. Further, several interviewed companies described considering public cloud solutions before concluding that Dell EMC VxRail was more cost effective for their intended use. These cost efficiencies have allowed for reallocation of portions of their budgets toward other IT needs and resources. Study participants commented:

- **Cost-effective IT infrastructure foundation, U.S. manufacturer:** *"Dell EMC VxRail replaced distributed servers, compute nodes, network arrays, and other infrastructure. We replaced hundreds of nodes and a SAN at each site. This infrastructure was ready for a refresh, and that would have probably cost more than we spent for VxRail — in the neighborhood of 30% more."*
- **Substantial cost savings over public cloud, U.S. higher education:** *"We brought our ERP system from the public cloud in-house with Dell EMC VxRail, and we are saving hundreds of thousands of dollars a year. We had to invest staff time to bring it in-house, but we recovered that in the first three months .... As a result, we've been able to hire Linux programmers and a database analyst."*

IDC evaluated direct IT infrastructure costs over a five-year period, and these results are shown in Figure 2. On average, study participants can run equivalent applications and workloads at a 24% lower infrastructure cost with the Dell EMC VxRail platform, representing a distinct win-win, especially given the increased agility and performance that they have gained.

**FIGURE 2**  
**Five-Year Cost of IT Infrastructure per 100 Users**



## IT Staff Productivity Benefits

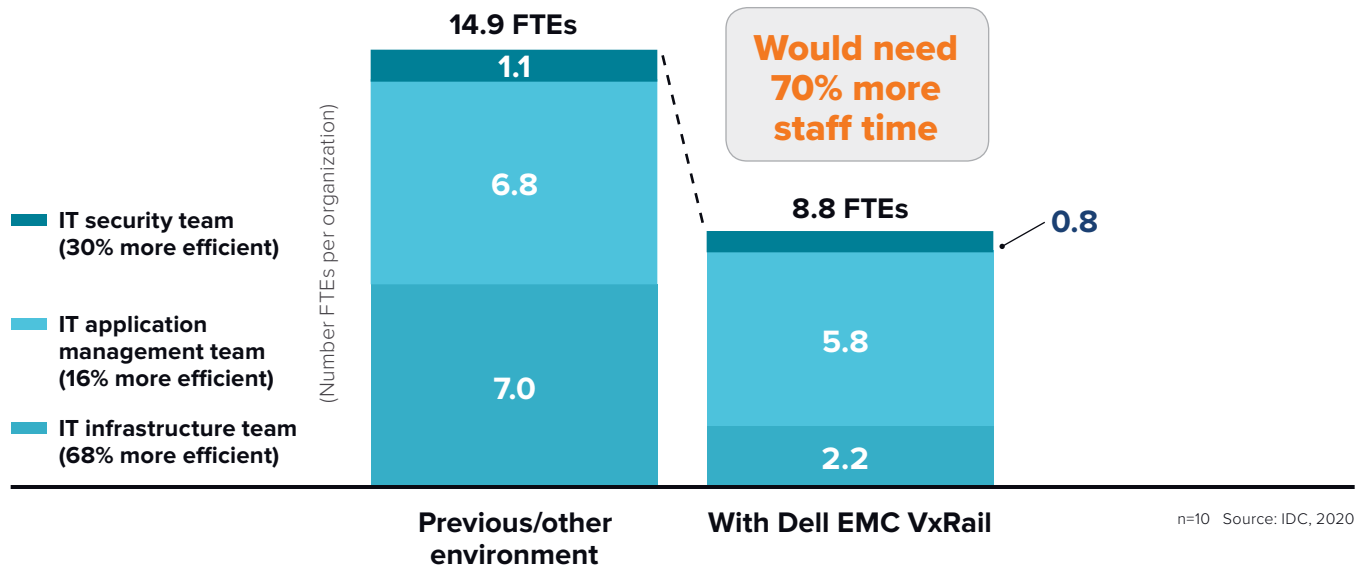
Study participants reported that a number of their IT teams benefit from having a more integrated and flexible IT infrastructure platform with Dell EMC VxRail, including software-defined automation across compute, storage, and networking. They cited functionalities and features that save time such as one-touch deployments and automated patching and updates. They also appreciated the fact that less staff time is required to address interoperability and compatibility issues during system upgrades. As a result, interviewed organizations reported operating and supporting infrastructure for equivalent applications with less staff time. Further, they described breaking down operational silos in IT operations and focusing on the development of new skill sets. Study participants elaborated:

- **Ease of upgrades and reduced staff time requirements, Redcentric:** *"We're getting a lot more person-hours back with Dell EMC VxRail because we don't have to worry about interoperability and compatibility issues during upgrades."*
- **Important operational efficiencies, Atlantis, the Palm, Dubai:** *"We've seen great efficiencies in our operations with Dell EMC VxRail. We're managing a lot of systems with fewer people. We're much more efficient in how we deploy and maintain systems .... Overall, we're looking at 20–30% efficiency gains."*
- **Driving substantial staff efficiencies, U.S. insurance company:** *"We have a small number of people who manage our storage and networking servers. Previously, managing these assets was siloed and that caused issues. VMware Cloud Foundation on Dell EMC VxRail has allowed us to effectively triple our staff without adding any head count."*

IDC drilled down on these IT efficiencies by team and quantified benefits for security, IT infrastructure, and application management teams. All three showed improved levels of performance, especially IT infrastructure teams, which are a significant 68% more efficient with the Dell EMC VxRail platform. Overall, these organizations would need much more staff time to manage, secure, and run the same workloads — 70% more on average — on their previous infrastructure environments (see Figure 3, next page). Importantly, staff efficiencies have freed up time to focus on other IT and business-oriented projects and activities, enabling IT organizations to better support their businesses. As noted by Atlantis, the Palm, Dubai: *"We've become a lot more efficient in our datacenter operations with Dell EMC VxRail .... We're engaging more deeply with business stakeholders and can put more people on business projects because we're spending less time on infrastructure planning and preparation."*

FIGURE 3

### Overall Impact on IT Teams



## Performance and Agility Benefits

Interviewed customers also reported that Dell EMC VxRail has provided significantly improved levels of agility, reliability, and performance. The value chain resulting from these gains has led to positive results for various facets of their business operations. For example, higher reliability reduces business risk and increases business confidence, while improved performance translates into better user experiences for both line-of-business end users and customers.

### Enhanced IT Agility

Study participants cited much improved agility on Dell EMC VxRail as among the primary benefits of running applications on the platform. Their businesses rely to a substantial extent on having IT resources in place to support development and business expansion, and friction associated with these activities can detrimentally affect business results. However, by moving to Dell EMC VxRail and leveraging software-defined automation to deliver and scale compute, storage, and networking resources, they have delivered much improved levels of IT agility to their businesses.

Application development teams are among the main beneficiaries of this improved agility and scalability. With readily available compute, storage, and other IT resources, they can quickly spin up new testing and development environments, thereby helping them move through the development life cycle with greater speed and effectiveness. Study participants described gains in development productivity along with examples of supporting business extension more readily:

- **Improved agility drives higher developer productivity, city of Amarillo:** *"Dell EMC VxRail has made us more agile and responsive to business demand. Our team has eight developers that are saving a lot of time. It must be about 80 hours a month, collectively. It's been huge for them because they can spin up environments in minutes."*
- **Ability to extend IT as needed, U.S. manufacturer:** *"Extending our IT environment into a new merger and acquisition company for offsite deployment probably now takes us 40–120 hours with Dell EMC VxRail. It would probably be twice that with our previous infrastructure .... The impact is really that IT is less rushed."*

Table 3 quantifies these agility benefits showing significant levels of improvement in the time required to deploy new VMs (44%), physical servers (51%), and storage (71%).

**TABLE 3**

### Impact on IT Agility

Average per Organization	Previous/ Other Environment	With Dell EMC VxRail	Difference	Change
New VMs (hours to deploy)	0.8	0.5	0.3	44%
New physical servers (hours)	6.1	3.0	3.1	51%
New storage (hours)	11.2	3.2	8.0	71%

n=10 Source: IDC, 2020

As noted previously, interviewed organizations linked improved IT agility to more effective application development. Accordingly, IDC drilled down on the impacts of Dell EMC VxRail for their development teams. As shown in Table 4 (next page), these teams were able to provide faster and more frequent delivery of new applications and features. The number of new applications and/or major features released annually improved significantly (114%) as did the number of new features (73%). Meanwhile, improved platform agility and performance also allows for compression of development life cycles, enabling delivery of new applications an average of 32% faster and 29% faster for new features.

TABLE 4

## Impact on Application Development

Average per Organization	Previous/ Other Environment	With Dell EMC VxRail	Difference	Change
<b>New applications</b>				
Number of new applications/major features per year	13.2	28.3	15.1	114%
Development life cycle per new application (weeks)	28.6	19.5	9.1	32%
<b>New features</b>				
Number of new features per year	72	125	53	73%
Development life cycle per new feature (weeks)	2.2	1.6	0.6	29%

n=10 Source: IDC, 2020

**Reduced Risk and Stronger Security**

Study participants reported that they have substantially reduced business risk and productivity losses as a result of higher platform resiliency and faster recovery time with Dell EMC VxRail. Several organizations linked their ability to minimize the impact of unexpected outages to having a platform that can easily absorb a single problem by shifting workloads. For example, Mercy Ships described how the Dell EMC VxRail architecture helps by automatically redistributing workloads: *"With Dell EMC VxRail, we have multiple nodes that essentially act as one server. They're able to interact with each other. Instead of having to redistribute physical servers manually, this happens automatically."*

As shown in Table 5, study participants have substantially improved in terms of both the frequency of unplanned outages and lost productivity affecting their business operations. With Dell EMC VxRail, they have minimized the number of unplanned outages (81% fewer), meaning that each user of applications running on Dell EMC VxRail gains almost two hours of additional productive time per year (see Table 5, next page). Further, they underscored the importance of minimizing risk related to unplanned outages to business confidence. For example, Atlantis, the Palm, Dubai, noted: *"We wanted to be more resilient. Having the Dell EMC VxRail foundation has given the business more confidence in IT. We're having fewer interruptions, and when they do occur, they're much shorter."*

TABLE 5

## Impact on Unplanned Downtime

	Previous/ Other Environment	With Dell EMC VxRail	Difference	Change
Number of unplanned outages per year	2.1	0.4	1.7	81%
MTTR (hours)	2.9	1.8	1.1	39%
Hours of lost productive time per user per year	1.8	0.1	1.7	92%
Value of lost productive time per organization per year (FTEs)	2.0	0.2	1.8	92%
Equivalent value of lost productive time per organization per year	\$138,400	\$11,000	\$127,400	92%

n=10 Source: IDC, 2020

Study participants also linked Dell EMC VxRail to having a lower overall risk profile through features such as automated resource protection and encryption. Redcentric noted: "We no longer have to engineer encrypted solutions because they're built into VMware Cloud Foundation on Dell EMC VxRail by default. This is important because we have a lot of healthcare clients and we need to maintain privacy." Importantly, their data backup and recovery activities have become more robust through the use of Dell EMC VxRail. As shown in Table 6, study participants have increased the frequency of weekly data backups by an average of 32% and improved their data backup window objectives by 27%. These types of improvements help them maintain, use, and store data more robustly, thereby limiting the potential for data loss or data breaches to negatively affect business activities.

TABLE 6

## Impact on IT- and Data-Related Risk

Average per Organization	Previous/ Other Environment	With Dell EMC VxRail	Difference	Change
Frequency of data backups per week	3.4	5	1.6	32%
Data backup window objective (hours)	3.8	3	0.8	22%
Data backups completed within objective	79%	100%	21%	27%
Data recovery efforts completed within objective	77%	100%	23%	30%

n=10 Source: IDC, 2020



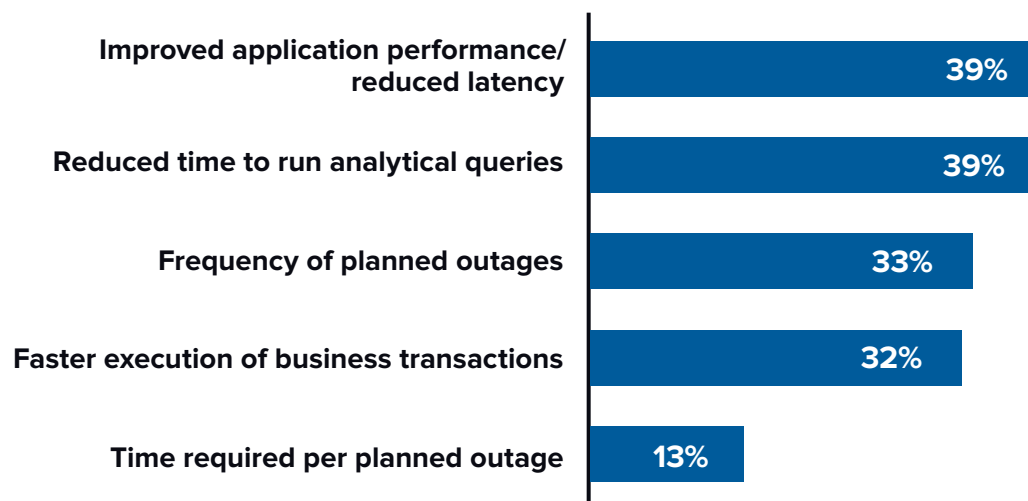
### Improving the Performance of Business-Critical Applications

Study participants reported better performance for key business applications running on the Dell EMC VxRail platform with Intel Optane and other Intel processors. For study participants, infrastructure performance is a key determinant of the user experience for employees and even customers, meaning that it can affect employee productivity levels as well as customer satisfaction. The interviewed U.S. food and beverage company summarized the performance impact: *"Our employees noticed the difference in performance right away with Dell EMC VxRail. In particular, one of our big applications that basically does data crunching to get reporting results was much faster."*

Figure 4 quantifies performance-related improvements cited by interviewed Dell Technologies' customers through their use of the Intel-based Dell EMC VxRail platform. These results reflect substantial improvements in application performance with an average latency reduction of 39%, as well as the ability to run business operations (32% faster transactions) and leverage data (39% faster queries). Further, study participants reported that Dell EMC VxRail requires less scheduled maintenance, with one-third (33%) fewer planned outages that are completed 13% faster, which minimizes potential business interruptions from such maintenance activities.

**FIGURE 4**

### Impact on Application Performance and Planned Downtime



n=10 Source: IDC, 2020 (% improvement)

## Business Operational Benefits

For interviewed Dell Technologies' customers, the improved agility, reliability, and performance of Dell EMC VxRail have downstream impacts that can generate improved business results and operational efficiencies. These benefits took the form of higher revenue and more efficient business operations. Higher productivity for employees is fostered by providing early access to better performing applications, in addition to other transactional and data-related performance improvements. Further, interviewed organizations emphasized that Dell EMC VxRail has helped future proof their IT infrastructures, which allows their IT organizations to better support business goals and deliver to meet increasing customer expectations. These benefits were emphasized by interviewed customers:

→ **Improved performance means higher customer satisfaction, Redcentric:**

*"We've improved customer satisfaction with VMware Cloud Foundation on Dell EMC VxRail due to improved performance .... We are faster to market because customers can now set up VMs in minutes on their own. We don't have to do the provisioning for them."*

→ **Higher user productivity from using new applications, U.S. higher education:**

*"Our users are more productive with applications running on Dell EMC VxRail, and we can actually do things now that we couldn't do before. All of our employees can now use applications that they couldn't use before, so they are something like 20% more productive."*

→ **Increased business agility and future proofing IT foundation, U.S. insurance company:**

*"We can spin things up faster with VCF on VxRail. The business units are surprised at how quickly we can do that now. We're talking days versus weeks .... VCF on VxRail has positioned us to be able to go to the cloud if we want or stay on premises. This gives us future proofing."*

User productivity and revenue gains make up an important part of the overall business value being realized by interviewed organizations. As shown in Table 7 (next page), IDC calculates average revenue gains of \$7 million per year per organization tied to improved performance, faster time to market, and enhanced business agility with Dell EMC VxRail. Meanwhile, study participants linked much higher application performance to employee enablement, which translates to increased productivity levels that IDC found averaged 3% across more than 2,000 employees on average.

TABLE 7

**Business Productivity Benefits: User Productivity and Revenue Gains**

	Per Organization	Per 100 Users
<b>Revenue impact — Business enablement</b>		
Total additional gross revenue per year	\$7.0 million	\$341,800
Assumed operating margin	15%	15%
Total additional net revenue per year — IDC model*	\$1.05 million	\$51,300
<b>User productivity impact</b>		
Number of impacted users	2,048	100
Higher gross productivity	3%	3%
Equivalent FTE gain, higher productivity	10	0.5
Value per year of higher productivity — IDC model*	\$720,300	\$35,200

\* IDC model assumes a 15% margin for recognizing revenue gains by converting "higher gross revenue" into "higher net revenue."

n=10 Source: IDC, 2020

## Focusing on the Value of VMware Cloud Foundation on Dell EMC VxRail

As noted previously, a number of interviewed organizations have either already deployed or are considering deployment of VMware Cloud Foundation on Dell EMC VxRail. These organizations reported similar value described throughout this study, including IT team and cost efficiencies as well as enhanced business agility, scalability, and performance. However, they also noted a differentiated value proposition related to establishing a truly software-defined datacenter environment and establishing a foundation for creating and leveraging a hybrid cloud for key workloads. As the interviewed U.S. insurance company noted: *"VMware Cloud Foundation on Dell EMC VxRail has had a big-time impact on our ability to create an SDDC. It has pervasively been the means by which we've achieved a software-defined datacenter. We could not have done that without it."*

In terms of IT staff efficiencies, study participants using VMware Cloud Foundation on Dell EMC VxRail linked its use to significant portions of the efficiencies they are achieving for IT infrastructure, application management, and IT security teams. For example, the interviewed U.S. insurance company commented: *"We have a small number of people who manage our storage and networking servers. Previously, managing these assets was siloed and that caused issues. VMware Cloud*

Foundation on Dell EMC VxRail has allowed us to effectively triple our staff without adding any head count." Specifically, interviewed Dell Technologies' customers linked VMware Cloud Foundation on Dell EMC VxRail to:

- 30% of their overall IT infrastructure team efficiencies
- 90% of their overall application management team efficiencies
- 75% of their overall IT security team efficiencies

As noted previously, study participants also spoke to how VMware Cloud Foundation on Dell EMC VxRail has allowed them to create a high-performing, agile, and optimized infrastructure to serve both current and future business needs. For example, Redcentric commented: *"We've improved customer satisfaction with VMware Cloud Foundation on Dell EMC VxRail due to improved performance .... We are faster to market because customers can now set up VMs in minutes on their own. We don't have to do the provisioning for them."* Meanwhile, the interviewed U.S. insurance company described the flexibility it now has for both current and future use cases: *"We can spin things up faster with VCF on VxRail. The business units are surprised at how quickly we can do that now. We're talking days versus weeks .... VCF on VxRail has positioned us to be able to go to the cloud if we want or stay on premises. This gives us future proofing."*

## Cost of Operations and ROI Summary

IDC calculates that study participants can run equivalent applications and workloads on the Dell EMC VxRail platform at a 51% lower cost over five years than legacy or alternative IT platforms. These cost-related benefits are especially noteworthy in terms of operational savings, with IDC finding average cost reductions of 72% in terms of IT staff time costs and the cost of productive time lost due to unplanned outages. These benefits translate to significant savings of more than \$175,000 per 100 users (see Figure 5, next page), with cost optimizations accruing in three areas:

- **IT infrastructure costs**, with IDC finding that Dell EMC VxRail provides study participants with a cost-effective infrastructure platform that is 24% more cost effective on average
- **IT staff efficiencies**, with IDC calculating that interviewed organizations require 68% less staff time to manage and run equivalent workloads on Dell EMC VxRail
- **Unplanned downtime — user productivity benefits**, with IDC's research showing that study participants incur 92% less loss of productive time due to unplanned outages

**FIGURE 5**  
**Five-Year Cost of Operations per 100 Users**

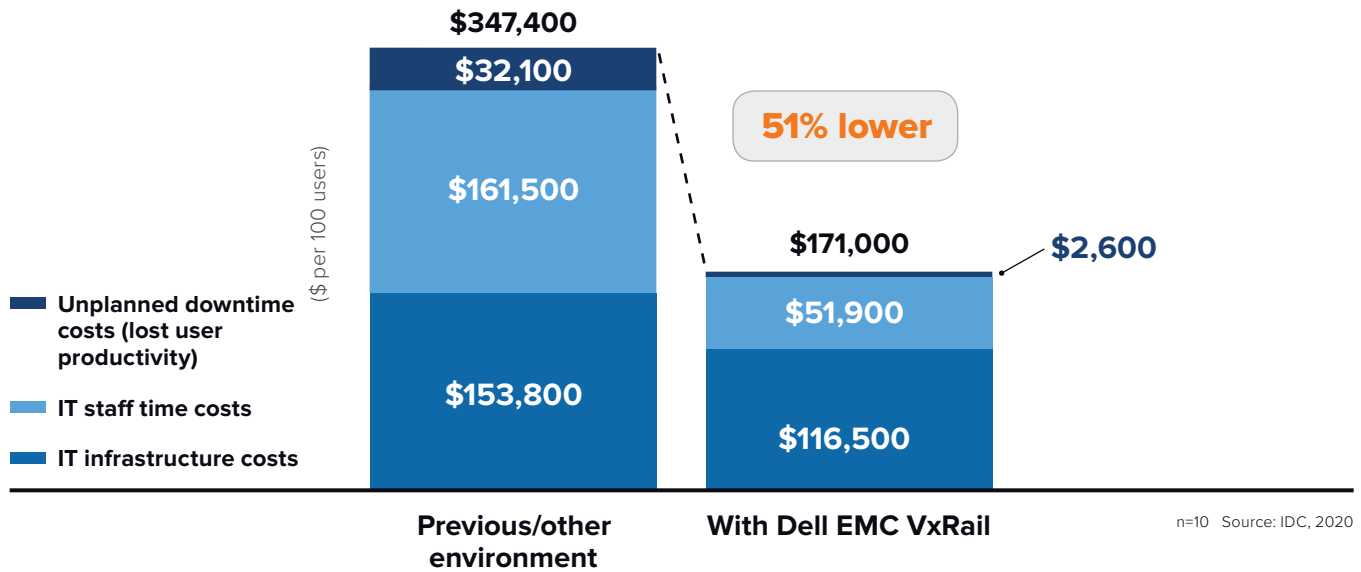


Table 8 presents IDC's ROI analysis of the financial benefits and investment costs related to study participants' use of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail. IDC calculates that, on a per-organization basis, they will achieve average total discounted five-year benefits of \$9.39 million per organization (\$458,300 per 100 users) in terms of lower IT infrastructure costs, increased productivity for IT teams and business users, and higher revenue. These benefits compare with projected total discounted investment costs over five years of \$1.70 million per organization (\$83,100 per 100 users). IDC calculates that these organizations will achieve an average five-year ROI of 452% and break even on their investment in 10 months.

**TABLE 8**  
**ROI Analysis**

	Five-Year Average per Organization	Five-Year Average per 100 Users
Benefit (discounted)	\$9.39 million	\$458,300
Investment (discounted)	\$1.70 million	\$83,100
Net present value (NPV)	\$7.68 million	\$375,200
Return on investment (ROI)	452%	452%
Payback period	10 months	10 months
Discount rate	12%	12%

n=10 Source: IDC, 2020

## Challenges/Opportunities

Sales of hyperconverged solutions have steadily grown at double-digit rates over the past five years. During that time, the technology has seen the range of use cases expand considerably. HCI solutions are far more frequently deployed to support highly virtualized, business-critical workloads for companies of all sizes. More recently, HCI deployments have become the platform of choice for private cloud buildouts and the on-premises portion of hybrid cloud environments. While these hybrid cloud implementations look set to drive the next wave of datacenter convergence, such projects are likely to be far more complex and challenging than past HCI market drivers. Technology suppliers that want to help customers through this shift will need to show that they understand the changes driving the need for foundational transformation and intend to be a true partner throughout the journey.

## Conclusion

IT organizations must increasingly make infrastructure decisions with the expectation that they are expected to drive business opportunity rather than just support ongoing business operations. Adding to the challenge, they must find ways to instill a more proactive approach to IT operations even as budgets generally remain relatively flat. Hyperconverged infrastructure solutions such as Dell EMC VxRail have offered organizations a datacenter technology that can enable the right balance of capital expenditures and operational efficiencies while still providing the requisite levels of performance and agility that organizations need across their datacenter, cloud, and edge environments. In turn, this helps them leverage their IT environments to generate new business opportunities and drive better business results.

IDC's research shows that organizations that are running many of their most critical business applications on Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail realize substantial benefits by having such a cost-effective, efficient, reliable, and high-performing infrastructure foundation.

Interviewed Dell Technologies customers described having a more agile and scalable infrastructure that can keep up with the speed of their businesses, whether in normal business conditions or extraordinary conditions. They also noted the importance of future proofing their IT environments with Dell EMC VxRail, by both having software-defined datacenters and creating an optimal foundation for hybrid cloud environments. Based on interviews with Dell Technologies' customers, IDC projects that they will realize strong value through their use of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail that will result in an average five-year ROI of 452% for these organizations.

# Appendix

## Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail as the foundation for the model. Based on interviews with organizations using Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail.** In this study, the benefits included IT cost reductions and avoidances, staff time savings and productivity benefits, and revenue gains.
2. **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail and can include additional costs related to migrations, planning, consulting, and staff or user training.
3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail over a five-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For purposes of this analysis, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Further, because Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail requires a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

*Note: All numbers in this document may not be exact due to rounding.*

## About the Analysts



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Eric Sheppard is a Research Vice President within IDC's Enterprise Infrastructure Practice, covering research on Enterprise Storage Systems, Enterprise Storage Software, Converged Systems, and Hyperconverged Infrastructure. Eric manages IDC's Quarterly Worldwide Disk Storage Systems Tracker, IDC's Worldwide Storage Software Qview and IDC's Worldwide Quarterly Converged Systems Tracker. This broad storage coverage coupled with his extensive international storage market experiences gives him a unique understanding of the many market forces affecting the storage software market. In addition to these responsibilities, Eric frequently contributes to primary research, custom storage projects and regularly presents market trends at industry events.

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Matthew Marden is a Research Director in the IDC Business Value Strategy team. He is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment (ROI) of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

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