White Paper

Enabling an Intelligent Enterprise with Dell EMC and SAP

Modernize Your Infrastructure with a Cloud-operating Model from Core to Edge

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Introduction

Digital Transformation

The rapid pace at which organizations are digitally transforming shines a spotlight on the importance of empowering IT to embrace the next generation of technology. Encompassing modernizing infrastructure; leveraging cloud; and becoming more data-driven through real-time analytics, artificial intelligence, and machine learning, digital transformation helps organizations remain competitive in a dynamic marketplace. ESG research shows that while there is steady year-over-year progress toward digital transformation, less than one quarter (17%) of organizations consider themselves mature, having implemented and optimized several digital transformation initiatives, while 39% say they are just getting started or in the planning phases of digitally transforming.[1]

While most organizations would do well to focus on finding value in their treasure troves of data and embracing a data-driven culture, IT is often not equipped to properly support next-generation applications and the analytics and insights that arm the business with the information they truly need to make effective business decisions. IT must first modernize their infrastructure to support these new and future data-driven initiatives. And that infrastructure should offer a cloud-operating model to achieve the agility required to respond to the changing needs of the business. The organization must be committed to invest in technologies that will enable them to view, integrate, and analyze all data across the organization regardless of data structure (or lack thereof) or where the data is located.

Analytics for Real-time Intelligence

As organizations look for ways to evolve and become the disrupter (as opposed to the disrupted), they must look to invest in technologies that allow them to swiftly process, manage, and gain insights from their data. From a spend standpoint, it should come as no surprise that organizations are more frequently prioritizing these types of technology investments. ESG research shows that nearly one-third (32%) of organizations believe that improving data analytics for real-time business intelligence and customer insight will be one of the key business initiatives that will drive the most technology spending in their organizations over the next 12 months. In fact, in 2019, more than half (54%) of organizations will increase spending in business intelligence, analytics, and/or big data.

But to what technologies are they turning? Organizations are moving toward tools that assist with data integration, enable real-time business intelligence, and leverage artificial intelligence to handle ever-growing, dynamic data sets. They are investing in data warehouses and analytics solutions that can benefit from a cloud architecture—one that can scale out and provide elasticity. But with several vendors in the marketplace today, evaluation and testing processes can be complex and become drawn out, impacting productivity and the company's bottom line. However, from an analytics and business intelligence software standpoint, one vendor that stands out is SAP.
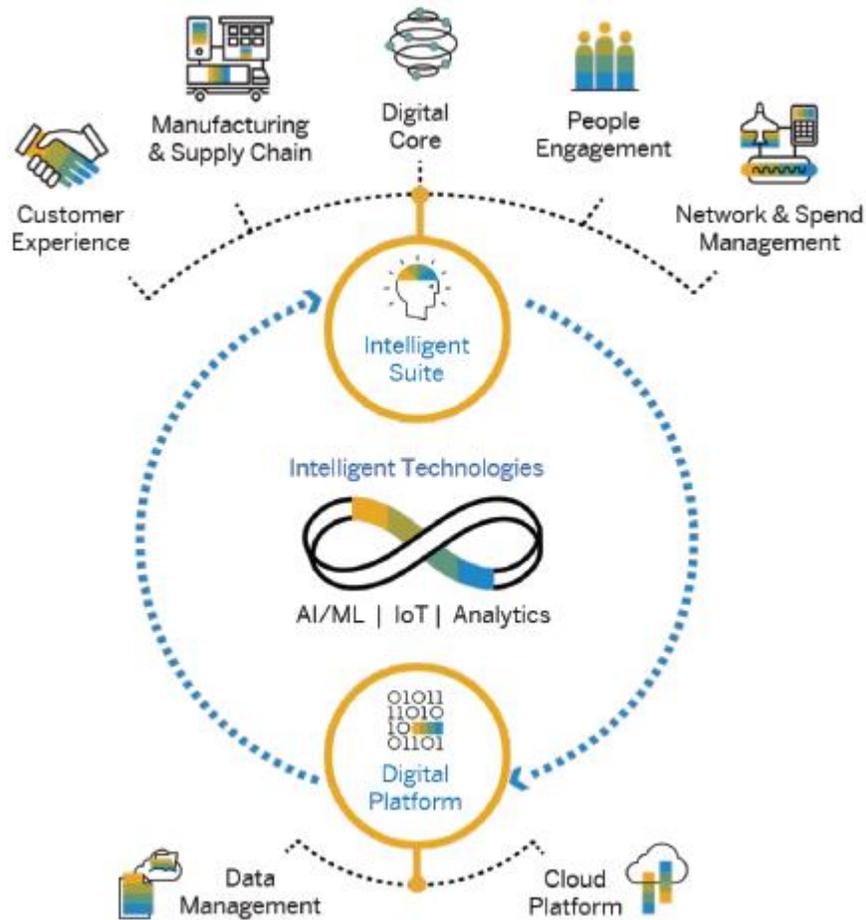
SAP Intelligent Enterprise

For nearly five decades, SAP has been helping organizations take advantage of new business opportunities, offering tools and technologies to enable more intelligence. SAP recognizes the potential of real-time data and the value of real-time business intelligence, developing technology that lets organizations gain visibility into their data, focus on what matters, and become more agile by responding to the real-time needs of the business.

Enter the SAP digital platform, enabling efficient data orchestration and integration. The platform is anchored by intelligent technologies that leverage real-time data to detect patterns, recommend actions, and predict outcomes. Together, the digital platform and intelligent technologies power an intelligent suite of tools, which help automate intelligent business processes. By bringing together these three key components, SAP offers a viable means to assist an organization's transformation into a truly intelligent enterprise.

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[1] Source: ESG Research Report, _2019 Technology Spending Intentions Survey,_ February 2019. All ESG research references and charts in this white paper have been taken from this report.

Figure 1. The SAP Digital Platform

Intelligent Suite

As one of the world's largest and most well-known enterprise resource planning (ERP) software companies, SAP has a deep understanding of essential business applications and business processes on which many organizations rely (think CRM, supply chain, HR, etc.). Historically, SAP has recognized the crucial need to unite applications, data sets, and business units to be able to successfully manage an organization's business. Today, businesses increasingly need to run in real time. The Intelligent Suite based on SAP S/4HANA focuses on providing organizations with an intelligent ERP system that enhances an organization's digital core. SAP provides prebuilt applications built on S/4HANA, assisting in tracking customer experience, manufacturing and supply chain, people engagement, and network and spend management.

The Intelligent Suite can improve the customer experience, leveraging real-time data to predict a customer's needs and proactively provide next-level service. Customized experiences can positively enhance user productivity, as well as the way users interact and communicate with one another. By offering full transparency across an organization's entire supply chain, the Intelligent Suite leverages real-time insights to automate and predict demands across different stages of the supply chain. The Intelligent Suite provides end-to-end visibility when managing all aspects of the workforce—from spend and travel to invoice and collection.

Intelligent Technologies

Anchored by SAP Leonardo, SAP HANA services, and industry expertise, organizations are able to quickly gain business insights that were previously inaccessible. SAP Leonardo allows organizations to integrate a number of SAP products with emerging technologies, allowing enterprises to optimize valuable resources using intelligent technologies (e.g., advanced analytics, machine learning [ML], and blockchain) on an open platform—while allowing them to proceed more quickly with IoT, big data, and real-time analytics initiatives. By leveraging customized digital industry innovation kits (adjusted to support specific use cases in multiple industries), organizations can achieve vertical-specific expertise and services, and reduce time to ramp up their initiatives.

With SAP Leonardo enabling the intelligent enterprise, an organization's data can be automatically integrated, powered by SAP or non-SAP environments through open APIs. And with a roadmap that includes the incorporation of the most current intelligent technologies, organizations gain peace of mind knowing they are on a future-proof platform.

The Digital Platform and Data Management

The process starts with helping organizations manage their most valuable asset—their data. Regardless of data source, type, format, or location, orchestration and centralization are key to unlocking the value of data. With SAP, and more specifically SAP HANA, organizations can intelligently and reliably manage and unify data with a real-time, cloud-based platform. By leveraging a single platform to collect and integrate all data in real time, organizations can simplify business processes by reducing data sprawl, and leverage the speed of an in-memory database to rapidly analyze data.

The SAP HANA Data Management Suite is a combination of on-premises and cloud-based technologies, presenting organizations with an effective means to orchestrate and manage enterprise data—with the flexibility to run locally or in a private/public cloud. The SAP HANA Data Management Suite creates a single view of data, empowering the development of next-generation applications. Through advanced controls that enhance data governance, monitoring, and orchestration, organizations can trust the data being analyzed—and the outcomes impacting future business decisions.

While SAP's digital platform offers next-generation S/4HANA intelligent ERP and tools for organizations to become more data-driven and more intelligent, just how can organizations begin their digital transformation journey? By ensuring this transformative software is built on a reliable infrastructure.

Dell EMC

As organizations look to embrace the transformation to modern, intelligent enterprises, they must take certain steps to ensure a successful transition. While IT needs to be prepared, current challenges still remain—a key challenge being the need for a modern infrastructure designed to consolidate and simplify IT for classic SAP landscapes, and ready to run emerging SAP HANA and S/4HANA in-memory applications. IT must maintain their existing applications, such as classic SAP, while ensuring a smooth transition to SAP S/4HANA and SAP Leonardo. As such, IT is turning to partners with years of expertise supporting SAP, ones who can provide solutions that not only address today's application requirements, but also pave the way for future success in supporting next-generation applications.

To ensure success, common objectives must be shared throughout the organization so that everyone has a total understanding about what needs to be achieved, e.g., modernizing IT infrastructure to improve productivity and ensure the lowest level of TCO; embracing a cloud-operating model to improve agility; and enabling the development of intelligent applications that rely on real-time data across globally distributed organizations.

Modernize the IT Infrastructure

For more than 20 years, organizations have turned to Dell EMC solutions to ensure they will be able to meet their data-driven goals using SAP. Between SAP's long partnership history with Dell EMC, as well as best practices learned by Dell EMC IT when leveraging SAP themselves, Dell EMC provides an extensive portfolio of solutions for SAP to help modernize an organization's infrastructure by efficiently consolidating IT and simplifying operations.

Focus on the Data

Dell EMC's modern infrastructure solutions let customers focus on the data in their SAP environments—by providing scalable and resilient technology that meets the performance and reliability requirements for an organization's always-on data-driven initiatives. With SAP HANA Tailored Datacenter Integration (TDI), SAP HANA customers can leverage existing hardware and tools for their SAP HANA environment, and use existing infrastructure components already in their landscapes, while leveraging current skillsets, tools, and processes.

Dell EMC offers SAP HANA-certified servers powered by Intel® Xeon® Scalable processors and storage with networking to function as building blocks that enable organizations to start small and scale as needed. It should also be noted that SAP has partnered with Intel® to optimize SAP HANA 2.0 SPS03 with Intel® Optane™ DC Persistent Memory enabling less downtime and helping to reshape data tiering and in-memory processing for SAP HANA. [2] In doing so, organizations can realize cost savings and improved IT agility by enabling consolidation, automation, and intelligence operations for SAP. Whether an organization is seeking a robust, converged infrastructure solution or a hyperconverged solution, Dell EMC offers complete pre-integrated solutions purpose-built to support current and future SAP technology.

To ensure always available data and business continuity, organizations are able to leverage Dell EMC protection to minimize planned and/or unplanned downtime, while eliminating single points of failure. Not only do organizations gain application-aware backups, archive, and recovery, but they are also able to realize application-consistent protection against operational incidents and disasters, including migrations.

Embrace a Cloud-operating Model

The path to digital transformation can be challenging, making it essential for organizations to embrace a cloud-operating model that provides flexibility in the delivery of software based on a company's unique requirements. The blueprint for a cloud infrastructure capable of delivering a cloud-like experience (while continuing to meet the needs of a dynamic business) consists of five logical layers and three cross-layer functions. The logical layers include: physical, virtual, control, service orchestration, and the services themselves. The three cross-layer functions (vital for secure and reliable cloud services) include: service management, business continuity, and security.

As an infrastructure foundation for a cloud-operating model, Dell EMC's converged infrastructure enables IT organizations to build cloud services, leveraging VMware vRealize to optimize workload and resource management. Organizations gain flexibility in meeting the delivery model that best fits their requirements—including the enablement of hybrid cloud deployments—by being able to scale SAP environments and applications on-premises, as well as through automated cloud deployment and management options.

Organizations can support their SAP workloads with Dell EMC and Intel, achieving freedom of choice for compute, storage, and data protection capabilities—along with an adaptive resource pool that ensures peak performance and optimal utilization as application and data requirements change in real time. Companies are also able to enjoy a simplified technology lifecycle management with Dell EMC, employing a common upgrade process across infrastructure components and software, ensuring new technologies can easily be integrated for future-proofing.

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[2] See Intel® Solution Brief for SAP.

With Dell EMC and Intel, an organization's system is NVMe-ready (vital for delivering real-time insights and outcomes), ensuring performance requirements are met as the business grows and evolves. Moreover, the addition of VMware vRealize software allows workload automation between cloud-operation model layers to increase productivity—reducing time and resources traditionally spent on routine administration tasks.

Leverage Data Intelligence from Edge to Core

Emerging use cases for data-driven applications and process means combining SAP HANA business data with external big data, machine learning, and AI to fuel intelligent application and business processes. This results in a proliferation of data being aggregated, pipelined, managed, and stored from the edge to the core. Organizations recognize the importance of uniting data from SAP HANA with other external data sources—specifically marrying IT and OT data, which is essential in bridging the gap between previously unconnected data—to gain new and meaningful business insights.

Dell EMC infrastructure, powered by Intel® Xeon® Scalable processors, is trusted to support next-generation application and advanced application requirements—from data lakes and Hadoop clusters to machine learning and artificial intelligence. Dell EMC brings both a deep level of expertise and a solid IT infrastructure foundation, enabling organizations across the board to more efficiently accelerate adoption of SAP's latest intelligent technologies, including AI and machine learning to support their big data and IoT initiatives.

Employ a Comprehensive IT Framework

Organizations must also look to a comprehensive IT framework—one that can enable the orchestration of data management across all environments on a scalable infrastructure, while providing global visibility into all the data, whether located in HANA or outside the HANA database.

SAP Data Hub provides governance and orchestration for data refinement and enrichment by pipelining complex data operations. Complementing SAP Data Hub, Dell EMC provides SAP-certified infrastructure powered by Intel® Xeon® Scalable processors capable of processing SAP HANA data in real time, while Dell EMC Isilon provides the scale-out platform for a data lake. Dell EMC Isilon storage is integrated, enabling the real-time processing and analysis of a company's hottest data through SAP HANA, while using object storage on Isilon with Hadoop and SAP Vora.

Accelerate Decision Making at the Edge

Not all IoT data will be processed at the core data center in SAP HANA. IoT edge computing will include SAP applications and use cases supporting decisions that need to be made locally, with smaller subsets of aggregated data being transmitted to the core. SAP Leonardo IoT edge computing works together with SAP-certified Dell EMC gateways—tested, validated, pre-configured, and pre-installed with SAP Leonardo software for running SAP IoT applications at the edge.

The Bigger Truth

The value that SAP provides to many organizations has not gone unnoticed. Organizations are recognizing and prioritizing adoption of the next generation of the technology in SAP HANA in order to remain competitive in their respective markets. Whether spurred on by a fear of being leapfrogged by the competition or a desire to leapfrog others, the transition to becoming a more intelligent enterprise is on most all organizations' priority lists. But this transition must be done the right way, starting out with ensuring that foundational aspects of the underlying infrastructure are in place—mainly, an infrastructure that can match the future-proofing aspects of SAP HANA.

With Dell EMC, organizations gain a modern infrastructure that meets their next-generation application requirements powered by SAP. IT can rest easy knowing the modern infrastructure delivers a cloud-operating model to satisfy as-a-service requirements, while meeting the performance, scalability, and reliability of their mission-critical applications. And with tight integration across the Dell Technologies family, data can be effectively managed from core to edge.

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