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Top 10 Technology Trends Impacting Infrastructure & Operations for 2018

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8-10 minutes

Outside forces will shape IT's journey towards a digital infrastructure.

Legacy infrastructure and operations (I&O) practices and traditional data center architectures are not sufficient to meet the demands of the digital business. Digital transformation requires IT agility and velocity that outstrips classical architectures and practices.

In 2018, IT will be increasingly tasked with supporting complex, distributed applications using new technologies that are spread across systems in multiple locations, including on-premises data centers, the public cloud and hosting providers.

David Cappuccio, vice president and distinguished analyst at Gartner, says I&O leaders should focus on 10 key technologies and trends to support digital transformation.

"These are not necessarily the top 10 technologies, or the hottest trends in IT, but rather the 10 trends we feel will have an impact on I&O teams over the next few years," says Cappuccio. "Some are happening already, some are just beginning, but each will have an impact on how IT operates, plans, enhances internal skill sets, and

supports the business."

Strategic

Trend 1: Geo Planning

Outside factors including the European Union's General Data Protection Regulation (GDPR), geo specific workloads and global and regional network access are driving IT to spend more time on geo planning as part of their longer term strategies. The long term objective is not to own a global infrastructure, but to build the

infrastructure needed to support the business via partners, as well as leveraging an organization's partner's infrastructure to help support initiatives such as multiple network connections and infrastructure design and support.

Trend 2: The Intelligent Edge

Many digital business projects create data that can be processed more efficiently when the computing power is close to the thing or person generating it. Edge computing solutions address this need for localized computing power. For example, in the context of the Internet of Things (IoT), the sources of data generation are usually things with sensors or embedded devices. The intelligent edge serves as the decentralized extension of the campus networks, cellular networks, data center networks or the cloud. Organizations that have embarked on a digital business journey have realized that a more decentralized approach is required to address digital business infrastructure requirements.

Trend 3: Intent-based Networking (IBNS)

Gartner predicts that by 2020, more than 1,000 large enterprises will use intent-based networking systems in production, up from less than 50 today. Intent-based networking (IBNS) is not a product, or a market. Instead, it is a piece of networking software that helps to plan, design and implement/operate networks that can improve network availability and agility, which becomes increasingly important as organizations transition towards digital business.

With IBNS, rather than explicitly defining to the network what needs to be done, the software translates the business intent to determine the "correctness" of the network configuration before deployment. The system then continuously compares the actual and desired state of the running network.

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Tactical

Trend 4: APIs – Integration Economy

A digital business is supported by technology platforms in five areas: information systems; customer experience; data and analytics; IoT; and ecosystems. The ecosystems technology platform supports the creation of, and connection to, external ecosystems, marketplaces and communities. Application performance interface (API) management enables the digital platform to function.

Organizations should design APIs from the “outside in,” based on ecosystem requirements, not “inside out,” based on existing applications or technology infrastructure. “Ensure that your organization takes an ‘API first’ approach, designing APIs based on the requirements of your organization’s ecosystem,” says Cappuccio. “APIs designed in this way can be mapped to internal technology infrastructure. This approach is more effective than simply generating APIs based on existing infrastructure and data models.”

Trend 5: Reputation and Digital Experience

There are two interlinked trends impacting business today that have nothing to do with IT infrastructure, but everything to do with infrastructure design. Digital experience management (DEM) is the impact of presenting the right digital experience to customers. The experience could be mobile or web-based, and should be always

available, continually improving and perform quickly and consistently. If any of these tenants are lacking, customer satisfaction is in peril. If customer satisfaction is in peril, especially in today's social media savvy world, corporate reputation could quickly be damaged.

Trend 6: Beyond Traditional IT – New Realities

Business units are demanding agility, in opening new markets, taking on emerging competitors, bringing in new suppliers, and creating innovative ways of interacting with customers. Over 30% of current IT spend is not part of the IT budget, but overall responsibility for supporting these new initiatives, once they are tested and stabilized, will reside with traditional IT. Managing those new providers, managing workflows and managing new types of assets in this hybrid environment, regardless of where they are located, will become crucial to IT's success.

Operational

Trend 7: DCaaS as a Strategy

In a perfect world, at least from the perspective of many business leaders, IT and the data center would be essentially a very agile provider of service outcomes, rather than the owner of the infrastructure. To do this organizations are creating a data center as a service (DCaaS) model, where the role of IT and the data center is to deliver the right service, at the right pace, from the right provider, at the right price.

"Making key short-term decisions can lead to a long-term strategy that incorporates the best of 'as a service' and the cloud without compromising IT's overall goals to both protect and enable the business," says Cappuccio. "In this manner, IT can enable the use

of cloud services across the business, but with a focus on picking the right service, at the right time, from the right provider, and in such a way that underlying IT service and support does not get compromised."

Trend 8: Cautious Cloud Adoption

For many enterprises the journey to the cloud is a slow, controlled process. Colocation and hosting providers have established private or shared clouds on their premises to provide customers some basic cloud services, enabling controlled migrations, staff skills training and a "safe" cloud environment as a stepping stone to increased cloud adoption in the future. As customers get comfortable with these services and costs, increased migrations to external providers are enabled via interconnect services. Using this partner ecosystem to enable an agile infrastructure is a rapidly emerging trend.

Trend 9: Capacity Optimization – Everywhere

Organizations need to focus on optimizing capacity and guard against stranded capacity – things that are paid for, but not really being used. This issue can be found both in existing on premise data centers and in the cloud. A change in culture is needed to fix this problem. Organizations must learn to focus not just on uptime and availability, but also on capacity, utilization and density. Doing so can extend the life of an existing data center and reduce operating expenditures from cloud providers.

Trend 10: Extended Infrastructure Management

The data center as the sole source of IT infrastructure has given way to a hybrid of on-premises, colocation, hosting, and public and private cloud solutions. These elements are being combined with a focus on providing business-enabling services and outcomes,

rather than a focus on physical infrastructure. Enterprises must apply a future-looking, enterprise-wide “steady hand” to IT strategy and planning, and apply appropriate guardrails, or face the possibility of losing relevance, governance and enterprise agility.