Enterprise Data Center as a Bottleneck: More Digital Data Challenges Existing Enterprise Data Centers, Creating Data Center Obsolescence

LEXINGTON, Massachusetts (April 25, 2017) – The 2017 module has 138 pages and 67 tables and figures. This module is part of a study 2,622 pages long, with 1,273 tables and figures that addresses the business issues connected with data center modernization. There are 20 module parts to the larger study comprised of detailed analysis of how new infrastructure layers will work to support management of vast quantities of data.

The Enterprise Data Center has become a bottleneck, it needs to be completely replaced. Category 5 and Category 6 Ethernet cable is spread throughout the existing enterprise data centers and is too slow to handle all the digital data coming through the data center. Cat 5 and Cat 6 Ethernet utilized by the servers to achieve data transport using that cable does not keep up with the data coming through the data center the way optical cable and optical transceivers do. The existing servers and cable are a problem because they are too slow for modern systems. The cable is too slow to handle all the data coming at us in the new digital age, and the associated technology that operates at Ethernet category 5 and category 6 cable speeds is too slow as well, this is why the entire set of existing enterprise data centers is a bottleneck.

According to Susan Eustis, lead author of the team that prepared the study, "The digital data is expanding exponentially, Global IP traffic passed the zettabyte (1000 exabytes) threshold by the end of 2016 and reach 2 zettabytes per year by 2019. No company is immune from mobile traffic, apps rule the connection to the customers. Current enterprise data centers are totally outmoded. In other words, the current enterprise data center is, not acceptable by current standards; no longer usable; obsolete:"

Mobile data traffic is set to increase by a factor of eight between 2015 and 2020. Growth is anticipated at 53 percent per year, faster than systems revenue or industry revenue.

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From this, any executive can deduce that the existing data center may very well be a bottleneck. Without revenue increases commensurate with the data volume increases, the data centers need to become far more efficient than they are now. To compete in a market where so much data moves so fast, businesses need high speed, hyperscale computing and connectivity capabilities. The existing enterprise networks and data centers are all bottlenecks in this context. Overall, IP traffic will grow at a compound annual growth rate (CAGR) of 22 percent from 2015 to 2020. Monthly IP traffic will reach 25 GB per capita by 2020, up from 10 GB per capita in 2015.

The theme of this study is that the pace of data expansion creates the need for more modern means of managing data. There are some companies that are doing a better job, better than others of adapting to IT infrastructure to the wild influx of data.

The four superstar companies that are able to leverage IT to achieve growth, Microsoft, Google, Facebook, and the leader AWS all use Clos architecture. What is significant is that systems have to hit a certain scale before Clos networks work Clos networks are what work now for flexibility and supporting innovation in an affordable manner. There is no dipping your toe in to try the system to see if it will work, it will not and then the IT says, "We tried that, we failed," but what the executive needs to understand is that scale matters. A little mega data center does not exist. Only scale works.

Business leaders are challenged to move their enterprises to the next level of competition. Data security is always an issue. An effective digital business player, transformer, and disruptor position depends on the effectiveness of employing digital technologies and leveraging connected digital systems. Organizational, operational, and business model innovation are needed to create ways of operating and growing the business using mega data center cloud technologies, systems are evolving. It is a journey to achieve the connected enterprise, ultimately connecting all employees and a trillion connected devices.

Many companies are using digital technology to create market disruption. Amazon, Uber, Google, IBM, and Microsoft represent companies using effective strategic positioning that protects the security of the data. As entire industries shift to the digital world, once buoyant companies are threatened with disappearing.

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A digital transformation represents an approach that enables organizations to drive changes in their business models and ecosystems leveraging cloud computing, and not just hyperscale systems but leveraging mega data centers. Just as robots make work more automated, so also cloud based communications systems implement the IoT digital connectivity transformation.

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Key Words:. Enterprise data center bottleneck, Scale In The Mega Data Center , Realign IT Cost Structure, Mega Datacenter Physical Infrastructure, Automation of Mega Data Center , Networking Fabric, Exchange Of Data Between Servers , Complex Automation Of Process, Applications Customized For Each User, Machine-To-Machine Management of Traffic Growth, Fabric Network Topology, Building-Wide Connectivity, Highly Modular Data Center Design , Scale Capacity, Back-End Service Tiers , Applications Scaling , Mega Data Center Network, Fabric Next-Generation Data Center Network Design, Pod Unit of Network, Mega Data Center Server Pods, Non-Blocking Network Architecture, Data Center Auto Discovery, Large-Scale Network, Rapid Deployment Architecture, Expedites Provisioning And Changes, Programmable Access To Network Stack , Software Defined Networking (SDN)-Supports Scale and Automation, Compute Engine Load Balancing, Load Balanced Requests Architecture, Scale-Out: Server And Storage Expansion, Switches and Routers Deployed in Fabrics, Mega Data Center Multi-pathing, Routing Destinations, Clos Topology Network , Capacity Scalability, Aggregation Switches, Intelligent Cloud Platform, Linux For Azure,,

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