Technology Trends...

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Research, Analysis, Strategy, Insight

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We present our trends for the next 2-4 years, covering the emerging technologies, products and strategies that will be critical to users and organizations.

Emerging Enterprise Technology Trends for 2015...

Trend 1:

Over the next 3-4 years, the BYOD trend will morph into a BYOT (Bring Your Own Thing) craze, as enterprises struggle to keep up with security, manageability and application challenges. BYOT will be an order of magnitude more complex and more diverse than BYOD and will require significant investment in infrastructure as employees bring a vast array of personal sensors and peripheral devices to work. Data generation, storage requirements and producing insightful analytics will be key challenges that all companies will face. Those vendors best able to integrate the "platform of things" (e.g., sensors, devices, data transport, storage, management, security, analytics) will be the ones most successful in the marketplace, with many smaller players exiting quickly. Enterprises must focus on longer term platforms rather than short term niche products and build a strategy now to deal with this emerging phenomenon.

Trend 2:

In wireless, 5G will not become real before 2020 due in large part to competing visions of what 5G is and how best to implement it. Nevertheless, these will ultimately consolidate into a standard, but it will not be focused on upgrading speed as in past generations (e.g., 3G, 4G, LTE). Rather it will be focused on ease of use and reliability, with latency, coverage and new connectivity models (e.g., peer to peer) being primary drivers, and consolidating connectivity across all available networks (e.g., 3G, LTE, WiFi). Major companies offering diverse products for 5g (e.g., Qualcomm, Intel, Ericsson, Nokia, Cisco) will eventually merge their technologies, but not until several missteps and non-compatible systems are introduced. Enterprises should remain cautious in moving to 5G too soon, and instead focus on improving existing technology investments (e.g., 4G, LTE, WiFi) until things stabilize.

Trend 3:

The EMM (Enterprise Mobile Management) market will continue to consolidate, with only 2-3 "pure play" vendors surviving in the next 3-4 years. This is good news for most organizations as the functions of EMM will merge into existing corporate systems as major vendors (e.g., SAP, IBM, Citrix, VMware) embed EMM capability. Extensions to base EMM systems will be required over the next 3-4 years to extend management and security to the upcoming array of "things" that will make their way into organizations. Those organizations that

have deployed EMM solutions should be cautious in upgrading existing systems before evaluating the viability and long term strategy of any current vendors.

Trend 4:

The chip market, especially as it relates to wirelessly enabled mobile products, will change over the next 2-3 years, as once negligible market share competitors, especially Intel, become more dominant. The need to empower low cost ”things” will drive some players (e.g., Qualcomm) to seek more lucrative avenues for their chips as super-competitive suppliers in emerging markets (e.g., MediaTek, Rockchip) grow their share from the low end up to the high mid tier. As a result, we expect the ARM-based server market to become the next major battle ground for silicon supremacy with all the major players trying to establish their position in the low power and large volume, primarily web-based cloud services driven market. We expect this battle to emerge as primarily an Intel-Qualcomm one, with AMD potentially being a disrupter in graphics intensive areas. This will open many opportunities for enterprises to add resources at attractive prices with commodity based cloud service providers.

Trend 5:

The relatively sedate server category will be reinvigorated and encompass personal area servers (e.g., smart peripherals), local area servers (e.g., personal server cubes) and wide area servers (blades and racks). By 2018, this will require a new distributed server paradigm that includes a hierarchy of storage models, transparent synching mechanisms, and a realization that services must be directed to users from the closest and most optimized device and not always delivered from the cloud. As a result, many new devices and new SW companies will be involved in extending the storage, server and SW markets, with major implications for enterprises and small businesses. Companies will use hybrid public and private cloud services across personal, local and wide area networks to empower workers and conduct their business.

Trend 6:

In the next 3-4 years, the functions of the smartphone will be ‘distributed” amongst many different devices that users employ. These components will be more transparent to end users than current wearables like smart watches, and will include not only screens for reading information, but an array of sensors that function as extensions of identity as well as provide real time information about each user. Although this will significantly extend the functions and appeal to the user, it will present considerable challenges in security and data analysis to application providers and enterprises that will be required to integrate these devices into their infrastructure.

Trend 7:

A compelling need for big data and analytics will be largely driven by the increasing use of mobile-enabled small sensors, personal devices and remote operated “things”. This requires a major investment in enterprise infrastructure, with the ultimate goal of creating meaningful analysis and actionable guidance. Actionable intelligence and resultant workflow will become not just a nice to have, but a business necessity, with those companies not doing it successfully

falling behind in the marketplace. By 2018-19 we expect companies to be investing 15%-20% or more of their IT budgets in obtaining and analyzing such data for use in their business operations.

Trend 8:

Over the next 2-3 years, the PC will continue its transition from a primarily fixed computing platform to one that moves easily and stays with the user. 2 in 1 form factors will replace many existing pure tablet uses and new form factors will emerge to become even more portable (e.g., "compute blocks" that transition from one form factor to another). We expect the newer versions of Windows to make such usage models easier. Enterprises will not be abandoning the PC or Windows in any significant way over the next few years and companies should remain proficient in managing and deploying such systems.

Trend 9:

The mobile OS wars will continue to heat up as Google tries to exert more control over the variations of Android, and Apple begins to merge the divergent iOS and Mac OS. For its part, Microsoft will more fully standardize its environment over the full Windows family from PC to smartphone. In the next 3-4 years, we expect to see Android continue its reign of smartphone and other mobile devices, driven largely by the impact of emerging markets. Microsoft's share of the smartphone market will continue to gradually decline, but its renewed focus on user productivity and cloud services will gain it share in the middle of the mobile market (e.g., tablets, smart devices and 2 in 1s).

Trend 10:

Over the next 3-4 years, Perceptual Computing will have a dramatic impact on the way users interact with their computing platforms. 3D vision and sound, voice, complex sensor arrays, virtual reality displays, 3D printing, motion and location sensing and similar perceptual systems will impact everything from increased levels of security in systems and transactions, to more natural user interfaces in apps. These technologies will be driven both at the chip level (e.g., Intel RealSense) and at the systems level (e.g., HP Sprout, Multi Jet Fusion printers). Companies must get ready by examining how these immersive systems can make end users more productive, and taking steps to implement the technologies (in stages) as they become available.

Trend 11:

In the next 2-3 years, we expect e-commerce interactions attributable to mobile devices and mobile apps to surpass those from standard browsers. We also expect the incidents of fraud from mobile e-commerce to increase by an order of magnitude or more for the many organizations that rely heavily on this channel. As a result, companies not properly securing their mobile transactions face a significant risk of losses from fraud overwhelming their businesses and turning their customers away. While security will always be a continuing battle, the lack of preparedness of most enterprises is of particular concern, and companies must quickly invest in new solutions to stem this threat.

Trend 12:

In the next 1-2 years, we expect enterprise users to employ 3-5 personal

devices and use 8-10 business applications on a regular basis. Further, they will connect to at least 5 different enterprise systems to do their work. (e.g., VPN, email/Exchange, cloud systems, CRM/ERP/SFA). By 2018-19, we expect these numbers to increase 2-3 times, and create a significant burden to enterprises dealing with access and interaction with corporate systems. Companies must plan both infrastructure and other investments to cope with this emerging reality.

Trend 13:

As a result of the complexity associated with supporting and securing a virtually unlimited array of Bring Your Own Devices (BYOD), we expect organizations to significantly curtail the number of approved devices available to corporate users. By 2018-19, we expect most organizations to have an approval process in place for any new devices (e.g., smartphones, peripherals, "things"), and only enable limited devices to connect to corporate infrastructure, swinging the pendulum back towards the IT defined model, although not completely back to before BYOD. This will make many users who have grown accustomed to a laissez faire attitude unhappy, but it will be required to limit anarchy and maintain efficient and cost effective corporate operations.

Trend 14:

By 2018-19, the EoT (Enterprise of Things) will become a reality, and will focus on the augmented/instrumented worker. EoT adds significant capability for enabling the workforce and assisting in many aspects of their job. Sensory inputs on where, when, effort, time, location, exertion, temperatures, environment, etc., will be processed in a real time analytics capacity to help people become more productive. Perceptual computing (e.g., virtual reality glasses, 3D technologies) will provide automated, assisted, potentially robotics enhanced, and user friendly interactions. Enterprise must embrace these new technologies for the workforce of the future, particularly as more of the workforce becomes mobile and moves away from corporate central.

Trend 15:

The model for deploying applications, and particularly mobile applications, will change dramatically over the next 2-3 years, as the focus transforms from primarily one of functionality above all else, to one focused on time to market. Rapid Application Deployment will replace the more traditional RAD approach (rapid application development) as a prerequisite for successful solutions. Functionality will still be important, but "good enough" will often suffice, especially since the life cycle of a typical solution may be measured in weeks or months and not years. Development will become democratized and more "word processor" like than current specialized tools/skills. "App store" functionality for lifecycle app management will be a major component of this new model. Enterprises deploying apps that can't be implemented in days or weeks, and can't be changed often and on the fly will find their competitive position severely affected.

For further insights, questions or comments, or to discuss any of our current trends, feel free to contact us.

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