**Gartner: 10 critical tech trends for the next five years**

At a Gartner Symposium IT Expo session this morning, analyst David Cappuccio laid out 10 "critical" trends and technologies impacting IT for the next five years. (David Letterman apparently was not available; at least they found another Dave to do the honors.)

Before revealing the list, Cappucio provides a little context: In the last minute, there were 204 million emails sent, 61,000 hours of music listened to on Pandora, 20 million photo views and 3 million uploads to Flickr, 100,000 tweets, 6 million view and 277,000 Facebook logins and 2 million plus Google searches.

He repeats a theme that is going to come up a lot at this event: the "nexus" of cloud, big data, social and mobile.

- Organizational entrenchment and disruption
- Software-defined networks
- Bigger data and storage
- Hybrid cloud services
- Client and server architectures
- Internet of things
- IT appliance madness
- Operational complexity
- Virtual data centers
- IT demand

Digging in:

**Organizational entrenchment and disruption:** By 2014, 30% of organizations using SasS will revert back to on-premise due to poor service levels. There's significant growth in IT complexity. Faster change cycles. Shorter development timelines. Reduced budgets. We need 24/7/365 global IT support. End users are driving IT; end users demanded access to iPads. Same with iPhone, and other smart phones. End-users are driving IT to make change. There's also a "skills shift," with many people retirees, and new set of skills required of newer employees.

**Software defined networks**: A new way to operate networks, in which control of the networks moves into an OS. It moves control from individual devices to a central controller. Allows configuration of the network from one place. "Think of it as virtualizing your network," he says. Location of physical data center no longer is relevant, creating completely virtual environment. It reduces the time require to provision new resources. Work loads are crossing data-center boundaries. There is potential for significant organizational disruption.

**Bigger data and storage**: By 2015, big data demand will generate 1 million jobs in the Global 1000, but only a third will get filled due to shortage of talent. Seeing 30%-60% compounded growth in data depending on the organization. Audit, archive and recovery are increasingly complex. Analytics and pattern recognition are key. Seeing new specialized ARM-based servers to do specialty analytics. Get more performance in smaller footprint, with reduced power requirements. He notes that 15%-20% of current servers are doing nothing at all. He says most of the storage growth has been on premise.

**Hybrid cloud services**: Composed of services from multiple providers. combination of private and public clouds. Use cloud as extension of IT. Gartner thinks private clouds improve agility and will dominate. People are looking at the cloud as a way to accelerate business growth, particularly mobile apps. You could end up with hybrid environment with dozens of specialty providers. It's about increasing capability and/or capacity. He says that "hybrid data centers will be in your future." You can move non-critical work to the cloud to free up space. Result can be incremental operating expense growth, but long-term capital spending deferral.

**Client and server architectures**: One size does not fit all. One OS does not fit all. Form factors are not static. You have to let tablets in. Forced end-user standardization does not work; let me people do what they want within reason. Windows 8 will in your organization, but will not be full replacement for Windows 7 or XP or whatever you are using now. Office on tablets makes no sense unless you like typing on glass. There are other apps that make no sense on notebooks. Users force IT to do wireless networks, and instant messaging, and now tablets and smartphones. You need to decide what to do about Office; "The days of the monolithic suite are going away.

**Internet of things**: Cheap, small devices. Everything will have a radio and GPS capability. Self-assembling mesh networks. Location aware. This all creates the always on society. All of these things have an IP address and can be tracked. Most new cars being enabled for social. Street lights are being networked. Devices proliferating everywhere. It's not a single technology, it's a concept. Driving the trend are things like embedded sensors, image recognition, augmented reality, near field communication. The result is situational decision support, asset management, more transparency. Many, many business opportunities with the Internet of things. But it all adds to complexity of IT; brings more fo the business into IT.

**IT appliance madness**: Proliferation of point solutions, which are easy to deploy, with embedded OS, and locked down environments. They contribute to the complexity issue. Now seeing more virtualized appliances, which again adds to complexity. Some appliances are for specific workloads. Sometimes with entire embedded software stack. Inventory monitoring. Security monitoring. Easy to deploy, easy to forget about.

**Operational complexity**: By 2014, employee devices will be compromised by malware at 2x the rate of corporate-owned devices. For every 25% increase in functionality of a system, there is 100% increase in complexity. Cisco 6500 Switch has 2,390 pages of installation and reference information. Oracle 10g database has 1,677 parameters. With Exchange on VMware there are 115 performance/capacity settings.

**Virtual data centers**: Ratio of virtual to physical servers is now about 11-to-1. Virtualization creates inexpensive resources. Can provision sever in minutes. Resources are distributed to workloads. Can be distributed across data centers and geographies. New focus on distributing specific workloads, rather than focus on physical servers. Seeing segmentation of legacy workloads and new applications. Complexity increases resolution times and masks ownership of issues. Workloads and issues are no longer confined to a known environment. Enable staff innovation, the help drive staff retention – give them more to do. Cloud services and hybrid environments exacerbate the support issue.

**IT Demand**: By 2017, 40% of enterprise contact information will have leaked on to Facebook via employee mobile devices. Server workloads growth 10% a year. Network bandwidth demand growing 35%. Storage capacity, 50%. Power costs growth, 20%. Throwing more capacity at demand is not the solution; you need to optimize capacity in new ways: virtualization, data deduplication, etc. Over 1.5 billion Web pages are accessible, 450,000 iPhone apps, over 200,000 Android apps, 10,500 radio stations, 5,500 magazine. All drives demand for IT.

Gartner's recommendations include:

- Prepare for organizational disruptions – externally and internally generated.
- Software networks are coming; begin updating skills now.
- Hybrid cloud services are evolving rapidly.
- Internet of things will be here; you need to get ready.

**Fonte: Forbes [Portal]. Disponível em:
<http://www.forbes.com/sites/ericsavitz/2012/10/22/gartner-10-critical-tech-trends-for-the-next-five-years/>. Acesso em: 23 Oct. 2012.**