

Gartner: The top 10 strategic technology trends for 2012

Tablets, mobile computing, social networking and more will dominate 2012

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ORLANDO -- The technology that makes up many of the [systems in the IT world](#) today is at a critical juncture and in the next five years everything from mobile devices and [applications](#) to servers and social networking will impact IT in ways companies need to prepare for now, Gartner Vice President David Cearley says.

GARTNER: [10 key IT trends for 2012](#)

For example, enterprises will need to invest capital to improve network capacity and reliability. They will also need to improve [wireless](#) governance to improve wireless manageability and service levels, Cearley told attendees of the Gartner Symposium IT/Expo this week. At the annual presentation of Gartner's popular Top 10 Strategic Technology Trends presentation, Cearley offered the following as examples of the way the tech world is changing:

- 30 billion pieces of content were added to Facebook this past month.
- Worldwide IP traffic will quadruple by 2015.
- More than 2 billion videos were watched on YouTube ... yesterday.
- The average teenager sends 4,762 text messages per month.
- 32 billion searches were performed last month ... on [Twitter](#).

So what issues need to be on IT's radar screen for 2012? Here's a look at the Top 10 Tech Trends and the implications of those issues according to Gartner:

1. Media tablets and beyond: Bring-your-own-technology at work has become the norm, not the exception. With that come [security](#) and management challenges that IT needs to address. By 2015 media tablet shipments will reach around 50% of laptop shipments and [Windows 8](#) will likely be in third place behind [Android](#) and [Apple](#). The net result is that [Microsoft's](#) share of the client platform, be it PC, tablet or smartphone, will likely be reduced to 60% and it could fall below 50%, Cearley says. The implication for IT is that the era of PC dominance with Windows as the single platform will be replaced with a post-PC era where Windows is one of a variety of environments IT will need to support. In the smartphone arena, prices will fall to \$75 for entry-level devices in 2012 with faster two- and four-core processors, and with

bigger, brighter, higher-resolution screens, plus 3D, HD video and more sensors such as gyros, compasses and barometers driving greater features into high-end devices. While iOS dominates the tablet market today, Gartner says it expects iOS/Android will dominate the market with 80% of tablets shipped by 2015.

2. Mobile-centric applications and interfaces: Here touch, gesture and voice search is going to change the way mobile apps work in the future, Cearley says. By 2014, there will be more than 70 billion mobile application downloads from app stores every year. By 2014, at least half of the tools optimized for app store application development in 2010 will have been acquired or will have ceased to exist.

3. Social and contextual user experience: According to Gartner, context-aware computing uses information about an end user's or object's environment, activities connections and preferences to improve the quality of interaction with that end user or object. A contextually aware system anticipates the user's needs and proactively serves up the most appropriate and customized content, product or service. The tipping point here could be technology such as near-field communications getting into more and more devices. Some interesting facts here: By 2015, 40% of the world's smartphone users will opt in to context service providers that track their activities with Google, Microsoft, Nokia and Apple continuously tracking daily journeys and digital habits for 10% of the world population by 2015, Cearley says.

4. Application stores and marketplace: The key here is the rise of enterprise application stores that can develop specific apps for users. This will let IT manage and control certain apps. But embracing the idea of user choice might be a difficult concept for enterprise IT to embrace, Cearley says. Enterprises should use a managed diversity approach to focus app store efforts and segment apps by risk and value. Where the business value of an app is low and the potential risk, such as the loss of sensitive data, is high, apps might be blocked entirely.

5. The Internet of everything: The idea here is that we are building on pervasive computing where cameras, sensors, microphones, image recognition -- everything -- is now part of the environment. Remote sensing of everything from electricity to air conditioning use is now part of the network. In addition, increasingly intelligent devices create issues such as privacy concerns. Eventually IT will need some central unified management of all these devices, Cearley says.

6. Next-generation analytics: Most enterprises have reached the point in the improvement of performance and costs where Cearley says they can afford to perform analytics and simulation for every action taken in the business. Not only will [data center](#) systems be able to do this, but mobile devices will have access to data and enough capability to perform analytics themselves, potentially enabling use of optimization and simulation everywhere. Going forward, IT can focus on developing analytics that enable and track collaborative decision making.

7. Big data: Big data has quickly emerged as a significant challenge for IT leaders. The term only became popular in 2009. By February 2011, a Google search on "big data" yielded 2.9 million hits, and vendors now advertise their products as solutions to the big data challenge. The key thing enterprises have to realize is that they just can't store it all. There are new techniques to handle extreme data, such as Apache Hadoop, but companies will have to develop new skills to effectively use these technologies, Cearley says.

8. In-memory computing: We will see huge use of flash memory in consumer devices, entertainment devices, equipment and other embedded IT systems. In addition, flash offers a new layer of the memory hierarchy in servers and client computers that has key advantages -- space, heat, performance and ruggedness among them. Unlike RAM, the main memory in servers and PCs, flash memory is persistent even when power is removed. In that way, it looks more like disk drives where we place information that must survive power-downs and reboots, yet it has much of the speed of memory, far faster than a disk drive. As lower-cost -- and lower-quality -- flash is used in the data center, software that can optimize the use of flash and minimize the endurance cycles becomes critical. Users and IT providers should look at in-memory computing as a long-term technology trend that could have a disruptive impact comparable to that of [cloud computing](#), Cearley says.

9. Extreme low-energy servers: What if you could turn 10 virtual machines in one box into 40 slow physical servers that are tiny and use very low amounts of energy? There is a call for this type of computing to handle big data. For example, thousands of these little processors could work on a Hadoop process, Cearley says. Gartner says that 10%-15% of enterprise workloads are good for this. Moving the application from 10 images to 40 slower, less capable machines will only deliver on that promise if the software will perform the same. [Server](#) technologies are going to change to handle big data.

10. Cloud computing: This topic went from No. 1 last year to No. 10 this year, but it's still an important trend. It will become the next-generation battleground for the likes of Google and Amazon. Going forward, enterprise IT will be concerned with developing hybrid private/public [cloud apps](#), improving security and governance, Cearley says.