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2010 will be a wild ride for IT

by [Jonathan Eunice](#)[Share](#) **9**

This year is going to be amazingly full of change in IT. "Ennnh, IT sees a lot of change every year," you say? Yes, fine and true. But not like this one. Not at this magnitude. Consider:

Virtualization is being taken up at such a pace that it's hard to find a metaphor to describe it. "Exploding" has a pieces-coming-apart-at-high-speed vibe, when in fact virtualization's pieces are all coming together. "Imploding" doesn't work either. We've had maybe five years of fast growth, but now it's mainstream and ready for the lion's share of apps. We've passed the point where the natural expectation for new servers is that they may be virtualized.

The best default assumption now is that they will be virtualized. Yes, there are still exceptions, but they're quickly growing fewer and further between. Whereas five years ago, many IT managers were still routinely skeptical about virtualizing production workloads, for most it's now just a matter of when and how, not if.

Beyond the straightforward consolidation and infrastructure rationalization that powered virtualization's first wave of mainstream adoption, in 2010 many data centers will be well into their second wave. Many others will be entering it. In recent discussions, CIOs have routinely lauded the ability to leverage virtualization into high-value attributes like high availability and disaster tolerance. Recent improvements in both processors and virtualization software are bringing in use cases previously considered "hard to virtualize"-for example, communications and database servers.

And those have already virtualized their servers will now start virtualizing their desktops. Millions of desktops are in need of updating, especially those that skipped Windows Vista. In rolling out [Windows 7](#), IT departments will ask themselves whether they really want to get into yet another round of distributed management. Desktop virtualization technology is now far superior to what was available just three

years back; it will see significant new uptake among large enterprises.

Cloud and as-a-service computing Cloud computing, in all of its X as a Service forms (where X = software, infrastructure, platform, storage, or whathaveyou), is not the way a majority of IT will be done this year, or next, or the one after that. But don't let its definitional and standards battles, ornery nay-sayers, or "seems interesting, but we're not exactly sure how we'll use it" status fool you.



That's exactly where virtualization was, just five years ago. These "early days" issues will work themselves out in short order. Software as a Service has already gone mainstream, with many well-known examples such as Salesforce.com, Google Apps, and Zoho. The infrastructure and platform-as-a-service senses of cloud are less widely accepted, but only for now. They too have enthusiastic customers.

Cloud is the way that start-ups now allocate a lot of their IT infrastructure, rather than building their own data centers. That approach will seep into enterprises as well, gradually at first, but gaining steam. Beyond the usual poster kid providers—Amazon Web Services, GoGrid, Google, Rackspace, and Terremark—Microsoft has arrived with Azure for developers; so too have IBM, HP, and others for specific use cases such as testing.

Whereas virtualization simplifies and improves the computing resources that you have to provide, cloud computing radically simplifies by having someone else provide resources and capabilities as an on-demand service. Given the economic advantages of a centralized, network-delivered service, cloud will mature and grow rapidly.

New Processors: Intel has already gotten off the mark with over two dozen new CPU SKUs. At 32nm. Didn't we just go through the whole 45nm roll-out? Not literally, but it sure seems like it—and yet here we are, getting a full wave of the next fabrication generation. Oh, you wanted server rather than desktop/laptop chips? The much-updated "Nehalem" generation of 2009 not quite enough? Ok, the 8-core, multi-threaded "Nehalem-EX" is just around the corner. Its design for performance, I/O, virtualization, and availability enters it seriously into the Big Iron battle among scale-

up architectures.

Intel's also going to get the next generation ("Tukwila") of its Even Bigger Iron processor, Itanium, out the door. Not to be outdone, IBM's POWER7 generation is expected this year, complete with its own raft of Wow! feeds, speeds, and specifications. Oh, yeah, a new z11 mainframe generation is rumored. Did I miss anyone? Probably.

New Systems: Where there are new processor generations, new system generations are right behind. Dell, HP, IBM, Sun, and everyone else in the x86 server market is going to offer a way to get Nehalem-EX into the hands of virtualization-hungry data centers. HP will naturally have new Itanium-based servers driven by Tukwila, as may Itanium's other supporters. IBM's definitely going to have a new generation of Power Systems sporting POWER7, and a new System z for the z11 processor.

Long story short, the market's going to be awash in amazingly powerful, many-core, many-thread, virtualization- and workload-optimized systems. In 2010, it will be rare to get a new system product briefing and think "yeah yeah, a minor, incremental update." All the vendors are aiming for "Wow! That's amazing! I want one! I mean...I want a lot of 'em!"

Oh, and those are just compute elements. I didn't yet mention the wholesale shift in storage toward highly intelligent, highly virtualized arrays, or the revolution that Flash-based solid state disks (SSDs) have become. Nor have we talked about the rapid convergence of servers, storage, and networking. Oh, well. No time now.

New Vendors: IT vendors are rapidly consolidating and verticalizing their operations. Who sells what, to whom, is much in flux. For example, Cisco Systems doesn't just sell networking; it also sells servers and collaboration tools. Oracle will be a server and storage company, in addition to applications and middleware. EMC has been transforming into a management and security company, in addition to the storage and information management it previously provided.

IBM and HP are nearly everything companies; their ongoing stream of acquisitions makes them even-more-of-everything companies. Dell is adding major in-house services. Microsoft's adding a cloud. Oh, yeah, Amazon and Google are becoming IT

providers. Fancy that. VMware has become a tier-one platform and management company. On and on. If the vendors themselves are not new, their position in the market and their ambitions certainly are.

New Applications: Every few years, a new class of applications comes on-line. The historical ERP and CRM waves are good examples. Social networks, mobile everything, and pervasive computing are current examples.

Social networks just a consumer/personal thing, you say? Then why am I being briefed on system management tools integrated with Twitter? Mobile everything has been a decade coming but continues to accelerate as the devices--whether [iPhone](#), BlackBerry, Palm Pre, Android, Windows Mobile, or all the rest--become smarter and cheaper, and as mobile broadband infrastructure improves. Finally, pervasive computing--the idea of sensors and actuators spread throughout our homes, stores, [cars](#), roads, buildings, factories, and other places, all intelligently coordinated--has been coming (slowly) for a decade.

But the technology of RFID, digital surveillance, wide-area and mesh networks, and intelligent sensors have greatly matured, causing organizations to consider new opportunities for optimizing complex macro-systems like roadways, supply chains, and power grids. IBM's "Smarter Planet" phrasing nicely captures this.

I've really just brushed the surface of the changes that are rapidly occurring in IT. None are ex nihilo new; instead they accelerate and deepen technologies, trends, and initiatives that IT's been working on for some time. A combination of product cycle timing and economic downturn dampened the pace of 2008 and 2009. This year benefits. It's going to be a wild ride, with everything bursting forth. Should we call that riding the tiger? Riding a rocket sled? Whatever metaphor you prefer, hang on tight. This year is going to be a fast, aggressive--and fun--ride.



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