

Will Desktop Virtualization and the Rise of Netbooks Kill the PC?

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By Jeff Vance

It's a question the many in the tech industry are asking: Will Desktop Virtualization and the Rise of Netbooks Kill the PC?

The short answer is no. Laptops and PCs will have their place for some time to come, though in a role that will only get more and more limited as time goes on.

The long answer is yes – although the longer answer demands a deeper explanation. This isn't a zero-sum game. PCs will have their place. The question is where and how big that place will be.

Netbooks, smartphones and other constrained devices are already starting to erode the market share of laptops and PCs. As desktop virtualization enables processing and storage burdens to move away from stand-alone devices, the enterprise will encounter fewer and fewer situations where its end users absolutely need full-blown PCs.

Q3 2008 was the first quarter during which laptop shipments topped those of desktops, 38.6 million units shipped vs. 38.5 million. According to market-research firm iSuppli, the laptop numbers were inflated because netbooks were lumped into this category. Shipments of netbooks topped 13.2 million in 2008.

Research firm DisplaySearch, meanwhile, believes that netbooks will grow at more than 65% year-over-year to more than 27 million units in 2009, while the traditional notebook PC market will expand at just 3% to 133 million units during the same timeframe.

Regional Notebook and Netbook Growth Forecast by Region: 2008-2012 (CAGR – Compound Annual Growth Rate)

Market Segment	APAC	EMEA	Greater China	Japan	Latin America	North America	WW
Netbooks (5.0" – 10.2")	29.4%	26.9%	50.7%	2.6%	28.6%	12.6%	25.4%
Notebook PC (10.4" – 20.0")	17.7%	7.5%	24.2%	4.2%	31.9%	4.6%	10.9%
Combined	19.5%	10.7%	27.1%	4.0%	31.3%	5.4%	13.0%

Source: DisplaySearch

iSuppli warns, though, that the recession is inflating netbook numbers, with buyers focusing disproportionately on cost. Netbooks are generally priced below \$600, with the cheapest versions costing less than \$400. Once the recovery kicks in, iSuppli believes netbook growth will slow.

However, there are some wild cards to consider. First, wireless carriers are excited about netbooks as yet another way to boost the data-side of their businesses. DisplaySearch notes that telecom providers in many regions are already subsidizing the cost of netbooks if they're bundled with data plans.

Second, as users are forced to adjust to netbooks as an alternative to laptops, new use cases will invariably emerge.

Third, the rise of netbooks dovetails perfectly with the mainstreaming of desktop virtualization.

How Does Microsoft Fit into the Equation?

For the time being, one of the drawbacks with the sub-\$400 netbooks is that they don't have the horsepower for the newest Windows OS. Even the souped-up more expensive models reportedly had issues with Vista, which is why XP is the default Windows choice for now.

Don't expect Microsoft to be content with its XP foothold, though. Already, early beta testers of Windows 7, which was coded to be slimmed down for more constrained devices, claim that it works well on the netbook platform, at least on the \$400+ models.

Microsoft claims to have captured 96% of the netbook market in recent months, although those numbers appear to discount low-end models. According to IDC, Microsoft still has a hefty 76% market share, with Linux claiming the other 24%.

However, hardware manufacturers are planning to release netbooks that will be powered by mobile device chips, mostly from ARM. These devices are intended as platforms for Google's Android OS, as well as for Linux.

These mobile-chip powered devices also could open the door to carriers, who could subsidize the devices and try to freeze Microsoft out – or at least limit Microsoft's ability to dominate the market.

It's still too early to predict how this market will shake out, but it already looks as if netbooks themselves will split into two segments: a high-end, dominated by Microsoft, with the devices treated as pared-down laptops; and a low-end, dominated by Linux, Google, and others, with the devices functioning more as souped-up handhelds – think handhelds with usable keyboards and bigger screens.

Will Desktop Virtualization Heighten the Appeal of Netbooks?

As virtualization moves beyond the server to the desktop, IT has a greater range of options when it comes to client devices. Desktop virtualization vendors originally touted thin terminals, because they're cheap and they remove many of the IT headaches that come with managing desktops.

However, thin terminals are just a single use case and aren't appropriate for many types of knowledge work. Moreover, many analysts believe that desktop virtualization is being oversold and will only be appropriate in certain situations.

“Centralized virtual desktop will largely be a tactical solution, and we don't believe it will penetrate more than 10% of the environment,” said Michael Rose, an analyst with IDC.

Rose noted several obstacles to the widespread adoption of the hosted virtual desktop model: performance issues associated with client-server computing, mobility, scalability and application compatibility issues, to name only a few.

Rose went on to explain that while IDC believes virtual desktops run in a hosted manner will have a limited appeal, this doesn't mean IDC is skeptical about desktop virtualization in general.

The real action, he believes, will be with virtualization on the clients. “The future is pushing virtualization infrastructure to the edge device. So, I have virtualized servers hosting desktop environments. I also have virtualized client devices hosting virtual desktops at the edge,” he said.

Enterprise-class virtual desktops at the edge aren't technically feasible yet. In the meantime, the recession is making thin clients look good.

Saving Money through Legacy Devices

From a pure cost standpoint, there may be an even better – and cheaper – option than thin clients, one currently mothballed in the warehouse.

J. Wolfgang Goerlich is the network operations and security manager for a financial company in Michigan. “Because of the recession, our organization needs to extend the lifecycle of all of our desktops. Unless the device is broken, we don't replace it,” Goerlich said.

The desktop lifecycle has been pushed to five years or more. However, when a PC goes down, Goerlich is often able to tide that user over with a legacy device set up as a thin client. Without desktop virtualization, this wouldn't have been possible.

Already, Goerlich's organization is saving approximately \$10,000 annually for hardware maintenance, \$24,000 for power and cooling and \$35,000 per year for software and licensing. The question for Goerlich's organization then becomes what device to deploy when a legacy thin client isn't enough. PCs are expensive. True thin clients give IT one more device to manage, since many have proprietary and unusual operating systems. Besides, they're not portable.

“The key factor is what delivers the best user experience at the lowest price-point,” Goerlich said. “Netbooks are a good option.”

Michael Rose at IDC is looking beyond the form factor of the end device to the variables that will make them cheaper and more flexible.

“As [VDI – virtual desktop infrastructure] platforms mature, organizations will become more sophisticated in how they manage virtual desktop infrastructures,” he said. “Management flexibility along with the increased availability of client-side hypervisor technology, which we'll probably see in the next 12 to 18 months, will make IT managers think beyond server-based environments.”

Goerlich pointed to the rise of cloud computing as another variable boosting the appeal of netbooks.

“Today, I can accomplish things with a netbook and a browser that only a couple of years ago would have required a Windows client and four to five servers.” An economic recovery may indeed slow the growth of netbooks. In the meantime, expect them to gain even more traction as IT managers continue to cope with shrinking budgets.