

I D C V E N D O R S P O T L I G H T

PCs: Commodity Items or Providing True Differentiating Advantages?

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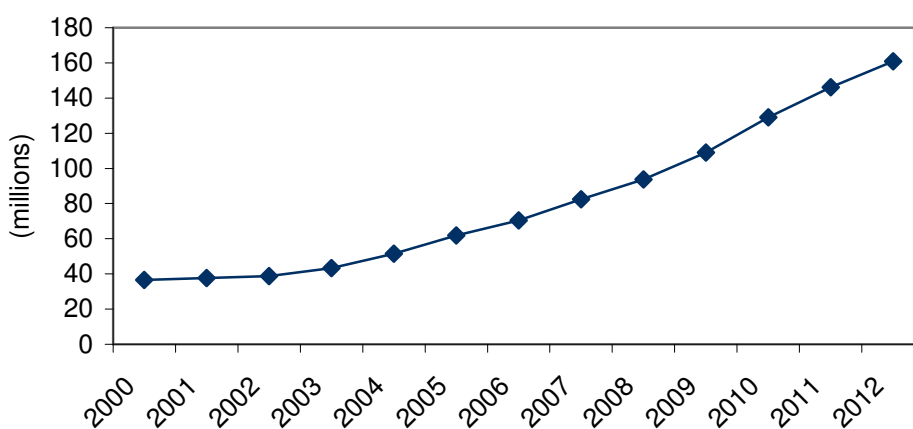
PCs are often misperceived as commodity items that are really indistinguishable from one another, and as such, one should simply buy the cheapest-priced PC available in the market. But this approach could have its flaws, especially when certain technologies built into certain PCs today can assist in making PC management much easier, as well as help the organization be more socially responsible. This paper examines these technologies, their benefits, as well as the role of [Lenovo](#) and [Intel](#) in this strategically important market.

Introduction

An increasing number of PCs are being purchased here in the Asia/Pacific region (see Figure 1), given the requisite role PCs play in nearly any business' operations today. To address this need, PC vendors have been fighting hard to differentiate themselves and provide more value to their customers. While price is one key consideration and battleground, it is by no means the only one, especially since the cost of a PC isn't always contained to the price of the hardware itself. Deploying, maintaining and disposing of the system consume huge amounts of time and money – perhaps many times more than the initial cost of the PC. Electricity and cooling costs are also considerations, especially with government regulations and corporate responsibility rising. As a result, a number of solutions are available that can help save on many IT-related costs and headaches, as well as help support the role of businesses in being more environmentally friendly.

FIGURE 1

Asia/Pacific including Japan PC Shipments, 2000-2012



Source: IDC WW PC Tracker, September 2008

Ongoing Threats to PCs

A comfortable and modern office environment may not seem like a hazardous place for technology equipment at first glance, but the reality is that a number of commonplace scenarios can arise, with a significant impact to the IT equipment, infrastructure, and support staff. Tripping over cables can pull notebooks onto the floor, thus potentially damaging the device – and more importantly, losing the valuable data on the machine. Spilling coffee or other beverages onto the computer could happen as well, among many other seemingly innocent scenarios.

The consequence is not limited to the cost of repairing or replacing the machine, but perhaps more importantly, the downtime of the employee, especially if he or she is a busy executive. To address such situations, a number of PC vendors have developed and built solutions directly into their PCs to help organizations manage such scenarios:

- Disk drives can detect falls and quickly park the drive heads before impact so as to protect the data on the system.
- Keyboards can be designed with drainage to minimize the impact on the electrical component.

Even if there aren't any problems occurring, it is of course the IT department's responsibility to track inventory assets, deploy new software across the user base, and contain threats such as viruses and malware that could spread across the organization's network. In the event that a machine does go down, the IT department oftentimes needs to physically go over to the PC itself to address the problem.

Such an action is not always that easy, especially if the user is on a business trip or simply at another office location. But at least a number of features have been built into certain PCs to help IT departments cope with such situations:

- Some PCs allow users to recover their systems themselves (or even do something as simple as find the correct wireless connection), which helps reduce the need for costly calls to the helpdesk.
- Should a machine become infected with a virus, some solutions can help isolate and contain such a threat. Some hardware-specific solutions can provide access to the troubled area even if the PC's operating system is not functioning, and can also provide access without requiring the additional time to physically go over to the device.

Finally, security is a concern for almost any organization, especially when sensitive data sits on laptops that could get lost or stolen, and thus exposes corporate information to unintended eyes. Rogue employees are another possible threat, who might come into the office with USB thumbdrives or even iPods, but are really using those devices to take confidential data out the office.

And when computers reach their end of life and need to be disposed, it usually isn't enough to simply delete all of the files on the hard drive. Skilled technicians oftentimes have the ability to recover old files from hard drives even after they have been "deleted." In response to this, the PC industry has developed a number of solutions to address such fears:

- Biometrics like fingerprint readers help make sure that the user's data is accessible only when the user is verified.
- Disabling USB drives in the BIOS can help keep employees from taking sensitive files out of the office.
- Data scrubbing solutions can overwrite old data with meaningless ones and zeroes to render any recovery efforts ineffective.

Solutions like these are increasingly becoming available from PC vendors as well as third-party providers. Some of these are built into the PCs themselves, while some are enabled in an aftermarket solution that could require additional costs or installation efforts.

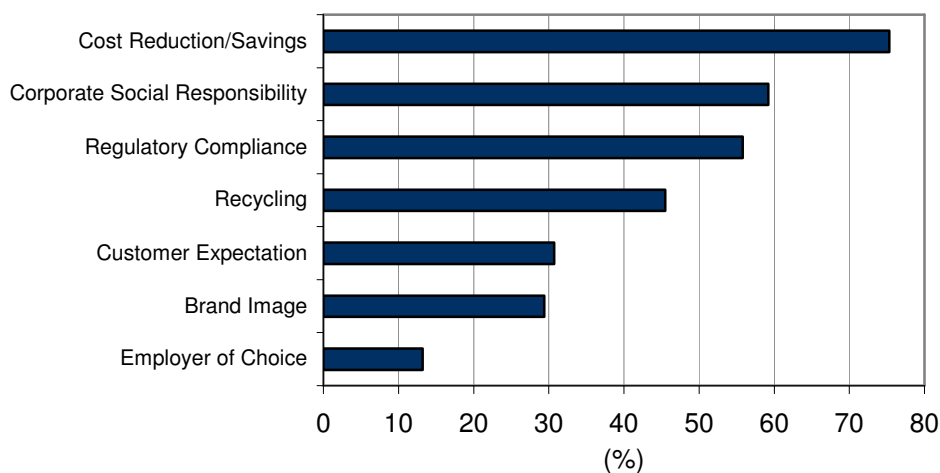
Being Green

Beyond addressing the hazards stated above, some vendors' PCs can help make organizations more environmentally responsible, or "green." Green IT is the design, manufacture, deployment and disposal of IT products and related materials in an environmentally responsible manner. IDC's recent Asia/Pacific Green Poll has identified a number of factors motivating IT managers' decisions to procure eco-friendly technology, as seen in Figure 2.

FIGURE 2

Drivers for Green IT Adoption

Q. Which of the following drivers behind investment in "Green IT" are most important to your organization, either today or in the near future?



n = 453

Source: IDC Asia/Pacific Green Poll, November 2007

To that end, a number of certifications are being used in the industry today to indicate "greenness" and compliance with regulations and standards. But it can also be quite confusing, especially with all of the acronyms involved. An easier way to look at these industry certifications is to group them by category, be it in terms of materials, energy efficiency, or disposal. Some of the more prominent certifications and the areas that they focus on include:

- Electronic Product Environmental Assessment Tool (EPEAT), which is a general tool used to evaluate, compare, and select desktop computers, notebooks, and monitors based on their environmental attributes, and is a U.S. federal government procurement requirement.
- Restriction of Hazardous Substances (RoHS), which specifically looks at the materials used in the products and was implemented in Europe in July 2006. Similar types of guidelines are starting to appear in certain countries in the Asia/Pacific region as well.
- Energy Star, which was created in 1992 by the US Environmental Protection Agency. Its logo promotes energy-efficient products, including not just computers and peripherals but also major appliances, electronics and lighting.

Energy efficiency is a particularly popular factor to consider, especially since it can help reduce operational costs of electricity for the organization. Even beyond caring for the environment, many organizations are now – either via mandate or as a competitive differentiating factor – embracing Corporate Social Responsibility (CSR) initiatives. PC vendors have thus started to boast about their products' green credentials, and organizations can look to these products to support their overall corporate goals, be they financial or altruistic in nature.

Profile of Lenovo and Intel

Lenovo was formed by Lenovo Group's acquisition of the former IBM Personal Computing Division in 2005, with global operations spanning from North Carolina to Beijing to Singapore. Lenovo has consistently been the number one PC vendor in the Asia/Pacific region in the past few years, in large part due to its strong position in China, as seen in Table 1. Its product lines include not only the line of Think-branded commercial products from the IBM acquisition, but also a number of other brands, including its Idea-brand for consumers, as well as a number of China-specific brands.

| TABLE 1 | | | | | | |
|--|--------|--------|--------|--------|--------|--|
| Asia/Pacific including Japan PC Vendor Market Share, 1H06-1Q08 | | | | | | |
| | 1H06 | 2H06 | 1Q07 | 2H07 | 1H08 | |
| Lenovo | 13.3% | 15.8% | 14.3% | 16.7% | 14.9% | |
| HP | 9.6% | 10.3% | 12.4% | 12.7% | 13.4% | |
| Dell | 9.4% | 8.5% | 8.4% | 9.0% | 10.2% | |
| Acer | 4.2% | 4.2% | 4.5% | 5.5% | 6.4% | |
| NEC | 4.8% | 3.9% | 3.9% | 3.4% | 3.6% | |
| Others | 58.7% | 57.3% | 56.4% | 52.7% | 51.5% | |
| Grand Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | |

Source: IDC WW PC Tracker, September 2008

ThinkPads have historically been one of the first product lines in the industry to include additional technologies specifically to help manage PCs, whereas many other products from other vendors were arguably more commoditized at the time. Known as ThinkVantage Technologies, this wide portfolio of software tools from Lenovo include:

- Access Connections: helps users find wireless connections easily
- Rescue and Recovery: allows users to recover their systems to its original state before a virus attack or crash
- Secure Data Disposal: a feature that helps IT managers with scrubbing the disk drive's confidential data

Complementing the ThinkVantage Technologies are also design features such as the Active Protection System, which is Lenovo's technology for quickly parking disk drive heads when it senses that the machine is falling to the ground, as well as magnesium alloy rollcages to protect the notebook upon impact.

Lenovo has also been very aggressive in getting its products certified to meet green standards such as EPEAT, RoHS, and EnergyStar across product lines from desktops to notebooks to monitors, and encompassing everything from product design to supplier selection as well as manufacturing. One example that the vendor is particularly proud of is its ThinkCentre M57 desktop PC, which – with its new power supply and cooling solution – significantly reduces idle power consumption and, therefore, costs, as well as carbon output. In March 2007, Greenpeace rated Lenovo as one of the greenest electronics companies in the world, while the vendor boasts of having the world's first EPEAT gold monitor line, being mercury-free in 2008, and being EnergyStar 4.0 compliant on all notebooks after July 20, 2007.

Lenovo's partner Intel is one of the leading semiconductor vendors in the world, having very successfully built up recognition of its processor names such as Pentium, Centrino, and Core. In 2006, the vendor launched its vPro platform, which built security and manageability features into the chips themselves. By enabling this in the hardware itself rather than purely through software-based solutions, vPro-based PCs provided IT managers with more advantageous and easier maintenance scenarios, including the ability to remotely shut down PCs to save power if needed. Intel has also continued to make its notebook processors more power-efficient, as seen in its recent Centrino 2 launch and 45nm Intel Core microarchitecture, thus allowing PC vendors to build notebooks with longer battery lives as well. Intel's halogen and lead-free manufacturing further helps Centrino 2 meet Energy Star requirements.

Challenges

These vendors have a number of challenges facing them, however. While the industry has well recognized Lenovo's ThinkVantage Technologies to be innovations far ahead of many of its competitors, many of Lenovo's competitors are also now catching up with similar technologies. Lenovo's associations with mainland China may, unfortunately, also spur concerns given controversies seen in other unrelated products from mainland China. Intel's vPro technology sometimes suffers from lack of awareness among IT managers.

Despite these challenges, IDC believes that Lenovo and Intel have been spearheading the industry. While competing technology is starting to become available from other vendors, Lenovo has a long history of integrating such technologies together smoothly. Any concerns about products built in China should also be put to rest, as nearly every PC vendor assembles its notebooks in China today, and Lenovo's long Think heritage continues to maintain its reputation for being one of the most rock-solid products available. And while vPro may still suffer from lack of awareness, IDC believes that the inclusion of such technologies could be a natural migration path for the industry in the long run. Indeed, IDC has found that many organizations are already purchasing vPro-based systems in part to help "futureproof" their investments today.

Conclusion

Computers are an important form of technology that will continue to be critical in everyday business operations, be it in the form of simple communications to deeper customer management or even complex product design. But that also means that threats could arise through even normal day-to-day use.

Regardless if the organization is large or small, IDC believes that it is important for such PC usage scenarios to be considered when planning IT infrastructures. With PC vendors increasingly offering solutions to address possible threats that could arise, it is easy for organizations to

reduce costs and headaches by simply choosing PCs with additional technologies to proactively fight any problems that may arise later. Sometimes this may mean a more expensive PC compared to the more basic offerings out there. But in the grand scheme of things, such a price premium can be easily justified when looking at the entire lifecycle of the PC, which incurs costs to manage it from deployment to disposal.

Moreover, choosing a PC with "green" technologies can help organizations to strengthen marketing messages as a good corporate citizen. In this day and age, saving money on electricity costs may be an even bigger motivating factor. To the extent that Lenovo and Intel can address the challenges that IT managers will face in developing their base of PCs, the vendors have an opportunity for success.

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