

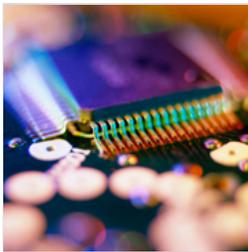
[Tech Watch]

Innovation Ahead

New Intel Core processor architecture offers a major leap forward for notebook PCs.

By Karen D. Schwartz

4/20/2010



Productivity is critical to a business's growth, profits and competitive advantage; and that means giving employees the technology they need to work faster and smarter, wherever they happen to be.

Mobile technology has come a long way in the past several years, providing mobile workers with the tools necessary to remain productive while out of the office. But there is always room for improvement. With the introduction of the new 2010 Intel Core processor family, mobile technology has just taken another major leap that promises to jump-start productivity

— specifically in the areas of performance, speed and security.

Sought-After Productivity

The new Intel Core i3, Core i5 and Core i7 processors represent significant advances in productivity and security while conserving energy consumption and decreasing heat. All have dual CPU cores (the Core i7 can also be quad core), and all include hyper-threading, which enables users to work on multiple tasks simultaneously. That's critical to mobile workers, says Brian Tucker, director of marketing for Intel's Business Client Platforms Division, because a typical employee's day isn't made up of sequential steps, but of multitasking.

The new chips also present a leap in terms of intelligence. For example, the new Intel Turbo Boost Technology, available in the Core i5 and Core i7, automatically adapts to the performance demands of the user, ratcheting up performance when needed and saving on power when not.

The Means for Speed

Then there is raw speed — clock speeds and power consumption range from 1.06 gigahertz and 18 watts on an ultra-low-voltage model, to a rate of up to 3.33GHz with Turbo Boost and 35W on the fastest full-voltage CPU.

For example, Intel vPro Technology, which is now available on systems that feature Core i5 or Core i7 vPro processors, runs business-productivity applications up to 80 percent faster than a three-year-old notebook PC. vPro also runs multiple applications twice as fast and protects confidential data more than three times as fast compared with an older system, according to Intel.

"Overall, Intel Core provides a significant step forward for notebook systems of every sort, from entry-level systems to mobile workstations," says Charles King, president and principal analyst at Pund-IT, a Hayward, Calif., IT consultancy. "That means owners should see a boost in performance in traditional business applications, and also be able to take greater advantage of new multithreaded apps and higher-bandwidth graphics and video processes. And the new processors' improved energy efficiency will be valuable for business users.

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Security has also been improved significantly in the Core i5 and Core i7, which now incorporate the Advanced Encryption Standard. AES accelerates the processing of encryption algorithms. "With this advanced encryption, we get four times the performance improvements when decrypting a large file over systems that don't have these capabilities," Tucker says.



Other security enhancements include hardware-based antitheft technology and remote management tools for monitoring unattended PCs, via the optional vPro system management technology. In addition, the new chips include remote break/fix capabilities with a desktop management console for both wired and wireless notebooks beyond the firewall, even if the operating system is down.

Manufacturers have already started incorporating the new processors, which can bolster the productivity and usability of their mobile devices.

For example, Lenovo has integrated the new Intel Core processors into its Think commercial line, from the ThinkPad Edge notebooks for small and midsize businesses to its highest performance W Series mobile workstations for data- and graphics-intensive work.

Intel's performance enhancements enable new features in Lenovo's notebooks, including extended battery life, optional multitouch screens, ultra-portable thin and light designs, an optional color calibrator, and a digitizer with pen and second display on the new ThinkPad W701ds mobile workstations, according to Tom Butler, Lenovo's worldwide ThinkPad product marketing director.

Going Forward

While enticing, the decision about when to upgrade to the new processors is complicated for many businesses, especially during challenging economic times.

King says he expects executives, sales personnel and other highly mobile employees will be the first to use the new systems, as has been the case with past Core-based migrations. For others, King says entry-level, Core i3-based units could be attractive upgrades for line-of-business workers, while engineers and product designers who need greater horsepower should be first in line for Core i7 systems.

Tucker takes a more aggressive view: "The economic conditions have forced businesses to pull back, but now they are sitting on aging PCs that can no longer perform tasks adequately. ... When you add to the fact that Microsoft Windows 7 is hitting the market, it becomes a good time to refresh your fleet and bring it back to where it would have been if the recession hadn't been a factor."

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