

Technology Paper

Whitebooks: An Imperative Opportunity

Move Toward Mobility

The market for notebook computers is growing rapidly as consumers embrace mobile computing and improved technology facilitates desktop replacement. Gartner predicts worldwide sales for the notebook and desktop computer markets will near parity by 2010¹, with notebook sales comprising 46 percent of the overall PC market. Seagate Technology® and other major hardware vendors believe now is the time for system builders to take advantage of the fast-growing whitebook market, and they are working together to create an ecosystem that will give system builders a competitive edge.

Whitebooks are customizable private-label notebook computers that offer the highest margins to system builders, just as whiteboxes—high-end, customizable PCs—did in the early 1990s. Given the right solutions, system builders can successfully penetrate select markets with mobile offerings that meet specific needs, paired with the trusted support only local resellers can provide.

Today whitebook sales are growing faster than the whitebox market and are forecasted to reach 3.75 million worldwide shipments in 2007²—representing year-over-year growth of approximately 20 percent (see Figure 1).

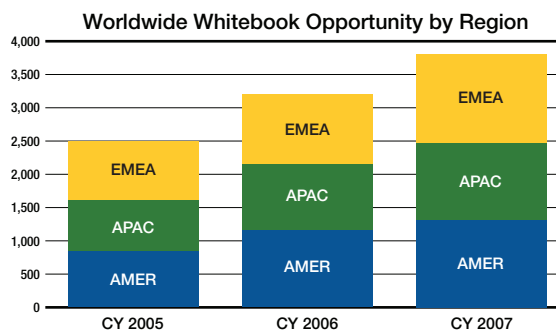


Figure 1. Worldwide whitebook opportunity by region, from Seagate Marketing, August 2006.

¹Gartner Worldwide PC Forecast, June 2006

²Seagate Marketing, August 2006

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While the move toward mobility presents an opportunity for system builders, it also requires them to diversify product offerings, supplementing commoditized desktop systems with high-margin customized notebook computers. Gartner reports that more than 90

percent of desktop computers will sell below US\$1000 in 2007, and by 2010, 90 percent of desktops will sell for less than US\$800 (see Figure 2). Not surprisingly, notebook computer prices are expected to hold up much better over the same period.

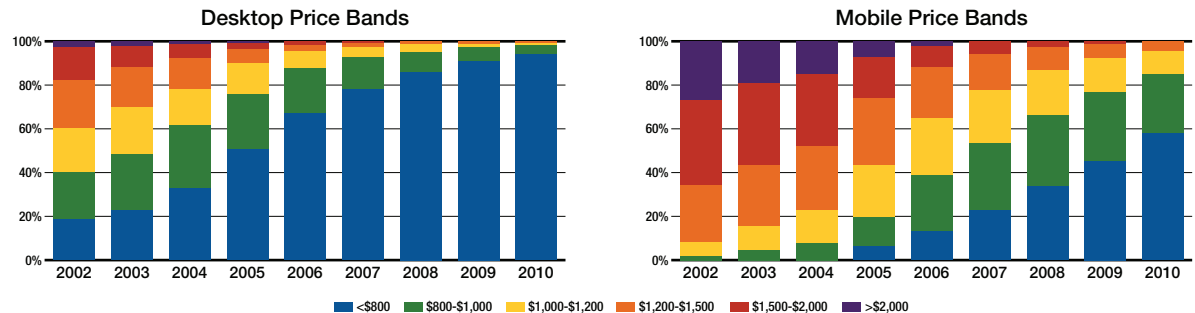


Figure 2. Gartner Worldwide PC Forecast for desktops and notebooks, June 2006.

Verified by Intel

The Verified by Intel program ensures notebooks not only meet Intel's specifications for component interchangeability, but also pass Intel's "mobility vectors" testing, meet Intel's requirements for providing a suitable "out-of-box experience" for the reseller and incorporate the same Intel front-line post-sales support offered on Intel's own product line.

Breaking Barriers, Succeeding in the Whitebook Market

The whitebook market presents a tremendous opportunity for system builders to increase their competitiveness and profitability. However, system builders who offer whitebooks have struggled over the past several years against four major barriers:

- **Availability of components.** Rising demand for laptops, insufficient whitebook infrastructure and recent component shortages have complicated sourcing.
- **Price and profitability.** Branded integrators have the advantage of volume discounts, making it very difficult for system builders to compete in the lower price bands.
- **Warranties and support.** Non-standardized whitebook design made service difficult and warranty support was too complex.
- **Brand.** Without clear brand differentiators, system builders found themselves competing with larger, branded integrators solely on price.

New technology, coordinated programs and assistance from technology suppliers, such as Seagate and Intel, enable system builders to overcome these barriers and succeed in the whitebook market.

Break the Component Availability Barrier

Unlike the whitebox market, the whitebook market was plagued by non-standard components early on. To empower its notebook channel customers, Intel launched the Common Building Blocks (CBB) program in 2005, which streamlines and standardizes the component supply chain for whitebooks.

In addition to the CBB program, Intel has launched the Verified by Intel (VBI) program with the leading barebones suppliers (ASUS, Compal and Quanta) in order to facilitate compatibility and interchangeability of common building blocks as well as putting in place improved quality tests. Under the program, Intel tests and verifies these seven components for adherence to mechanical and electrical specifications: hard disk drives, LCD panels, optical drives, keyboards, batteries, AC adapters and customizable notebook panels. These parts can be easily switched out of chassis from leading notebook barebones manufacturers ASUS, Compal and Quanta, providing whitebooks the same type of part interchangeability available in the desktop market.

System builders selling whitebooks derive several benefits from these efforts:

- Reduced inventory
- Faster customer service
- Simplified component sourcing

Break the Price and Profitability Barrier

Large integrators can create and benefit from economies of scale that make it impossible for system builders to compete directly on price, especially at lower price bands. However, more than 60 percent of notebook sales are greater than US\$1000, providing system builders the opportunity to realize higher margins by upselling faster CPUs, larger hard disk drives, more memory and other customizations. With consistent availability of standardized, interchangeable components made available through Intel's CBB and VBI programs, system builders can cost-effectively custom-configure offerings for vertical markets. System builders can improve margins by offering desirable upsells, such as high-capacity, 7200-RPM drives or new hybrid drives that boost performance with the Microsoft Windows Vista operating system. Drives that feature FDE (full disk encryption) are also a profitable upsell to vertical markets that demand best-in-class data security, such as government, healthcare and financial services.

Break the Warranties and Support Barrier

Local system builders can provide faster service turnaround times than large integrators because of their geography and close relationship with customers, but poor component availability and serviceability kept system builders from capitalizing on those advantages. Now, Seagate, Intel and other component vendors are working together to resolve those issues.

Seagate already offers an industry-leading 5-year limited warranty on its hard drives. And now, as part of the VBI program, Intel assumes technical support and warranty service responsibilities for qualified barebone notebooks on behalf of device manufacturers. For technical support, resellers can call the same number they do today for boxed Intel products.

Other improvements make whitebooks more serviceable. Before Intel CBB standards existed, components required different mounting

hardware and were often much harder to access. Now, most notebook chassis allow access to internals through the back panel instead of under the keyboard.

With these improvements, local system builders now can capitalize on their natural advantage in providing servicing and support:

- Faster on-site service, with spare batteries and barebones in stock.
- Data kept locally, as opposed to being shipped to some far-off facility.
- Value-added upgrades and extended warranties.

Break the Brand Barrier

Although many consumers are accustomed to branded notebooks, an opportunity exists to offer the same highly customized solutions, paired with local service and support that helped system builders succeed with whitebox systems.

System builders can differentiate their mobile solutions by offering customized configurations to vertical markets. For example, government, healthcare and financial sector clients will be interested in full disk encryption that protects sensitive data, while gaming enthusiasts will be interested in innovative redundant array of independent disk (RAID) memory for notebooks.

Moreover, institutional customers—government, healthcare and education—have traditionally focused on overall value rather than brand, and these customers are beginning to require part interchangeability in bids. Most large integrators still sell proprietary batteries and AC adapters, but whitebooks built with parts verified under Intel's CBB program will be able to meet those interchangeability requirements.

Read more about how system builders can win against large integrators by targeting vertical markets in the related Seagate white paper, *Key Strategies for Succeeding in the Whitebook Market*, TP561.

Strategic Importance of Mobile Computing

The desktop replacement trend is still ongoing. As notebooks increase computing performance, boast larger screens and provide ample storage for data and applications, notebooks are not just supplementing desktop systems. Rather,

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To Learn More

- To register for the Seagate Partner Program, visit spp.seagate.com.
- Learn more about the whitebook opportunity at www.whitebookbuilder.com.
- For information on Intel's common building blocks and Verified by Intel programs, visit www.intel.com/go/verifiedbyintel.

notebooks are replacing desktops as mobile workstations.

System builders need to recognize the importance of mobile computing and adjust their strategy accordingly. Mobile offerings emphasize customization and end-to-end solutions, both areas where system builders and local value-added resellers have the potential to outperform large integrators.

Whitebooks are a key element in any end-to-end mobile computing offering, which also includes wireless network setup, installing VPN and firewall software, and ongoing service agreements. By offering their own whitebook computers, system builders will be able to build on trusted relationships with customers and avoid losing account control.

Seagate Supports the Whitebook Market

Seagate is committed to the whitebook market, investing significant research and development resources to create the best possible storage solutions for whitebooks. The Seagate Momentus family of hard drives offers several opportunities that system builders can use to differentiate their whitebooks, depending on the target vertical market:

- The Seagate Momentus 5400.3 drive is the first 2.5-inch notebook hard drive featuring perpendicular recording technology; it offers a 160-GB capacity.

- The Seagate Momentus 5400 FDE.2 drive features hardware-based, 128-bit encryption to protect data from unauthorized access.
- The Seagate Momentus 5400 PSD is a hybrid drive, featuring built-in nonvolatile cache memory that reduces power usage and improves performance, especially with Windows Vista.
- The Seagate Momentus 7200 series of drives features fast 7200-RPM spindle speed that provides maximum performance for intense computing applications.

In addition, Momentus drives are power-efficient and extremely rugged—they are able to withstand 900 Gs of nonoperating shock—so users can take their whitebooks anywhere.

Succeed in Whitebooks With Strong Partners

Seagate and Intel are collaborating on behalf of independent system builders to build supply chains and educate customers so whitebook business can thrive. Through its partner program, Seagate works with system builders to develop the best strategy to integrate high-performance components into whitebooks and become more profitable.

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