

Hardware Platform Market Predictions for 2002

The year 2002 will be another year of turmoil in the hardware market, so expect consolidation and price pressure. Technology will be less of a demand driver than perceived value.

Key hardware predictions for 2002 include the following:

- In 2002, end of life cycle issues, rather than technology innovations, will be the major reason for upgrading PCs (0.9 probability).
- In 2002, the focus on disaster recovery and better storage use will propel storage software revenue growth (0.8 probability).
- By the third quarter of 2002, integrated wireless personal digital assistants (PDAs) will appear, supporting packet services with reasonable coverage, color screens, two days of battery life under normal use and solid push-based enterprise e-mail (0.7 probability).
- By the end of 2002, 75 percent of U.S. enterprises will have piloted, or deployed, wireless LAN infrastructure (0.7 probability).
- In 2002, Intel-based servers will eclipse RISC-based servers in revenue terms, for the first time (0.7 probability).
- The threat of further consolidation in the PC market will force Intel to encourage the creation of a future Tier 1 vendor (0.6 probability).

Turmoil, increasing competition from other vendors and other platforms, downward price and margin pressure and little perceived need to upgrade to new technology have been common threads across all hardware platforms in 2001. The economic downturn has shrunk IT budgets and affected consumer spending. Expect more of the same in 2002, increasing the threat of consolidation through failures and acquisition. Integrated solutions, manageability and value will be stronger drivers than technology in many market segments. For vendors, flexibility will be key in successfully navigating the transition through downturn to upturn.

Handhelds: Expect Major Price Declines and Consolidation

The year 2002 promises to be a tumultuous year in the handheld PC market (see "Handheld PC Market Predictions for 2002," HARD-WW-DP-0171). More than 20 vendors are vying for market share, each producing Pocket PC devices, but unable to offer much differentiation because of Microsoft's tight reference specifications. A new generation of enhanced phones that combine PDA functionality with a mobile phone will provide further competition. The weak economy and the lack of mature applications will

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result in significant price erosion. Current Pocket PC devices cost between \$450 and \$630, with an average selling price of about \$570. By the end of 2002, the average selling price will be about \$370.

Wireless e-mail will become the most important application area. Windows CE devices are most-appropriate for processor- or I/O-intensive duties, such as multimedia and heavyweight applications, while DragonBall-based Palm OS devices will remain viable for lightweight enterprise applications and mainstream organizer functions.

Vendors of handheld devices should be concerned about proliferating competition in a weak economy. It is vital to focus on compelling industrial design at competitive prices. Good enterprise applications, along with strong solution partners, will be key to survival. By year-end 2002, Handspring and Palm will merge to reduce their cutthroat competition, reduce costs and improve shareholder value (0.6 probability).

Notebooks: Value and Wireless are the Major Growth Drivers

In 2002, vendors must focus their efforts on creating value in notebooks and avoiding “feature creep.” Ease of purchase, availability and support will be the key differentiators, rather than speeds and feeds (see “Notebook Market Predictions for 2002,” COM-15-0779).

As 802.11b infrastructure will continue to be built throughout 2002, enterprises are planning, piloting and implementing installations. Commercial notebook vendors must make 802.11b support a mainstream standard. At the same time, vendors have recognized wireless LANs as a key means of stimulating growth in the home market. By offering low-cost, effortless home installations, vendors hope to get follow-on sales of home audio or digital image systems.

Enterprises are advised to buy 802.11b on their current notebooks because the capability is likely to be required within the notebook’s life time.

Desktop PCs: Technology Takes a Back Seat in 2002

The year 2001 has been, to say the least, a difficult one for PC vendors. The worldwide PC market is expected to decline for the first time since 1986. Revenue growth in 2002 is expected to decline by 18 percent, or 6.8 percent in unit terms. There is no compelling new technology to force users into early upgrades. Instead, the replacements are being made on the basis of end-of-life issues.

Poor PC market conditions are expected to continue throughout 2002, threatening the survival of many PC vendors. This consolidation is even affecting the Tier 1 original equipment manufacturers.

Intel’s margins, already under attack because of declining PC demand, would be seriously threatened by consolidation of the Tier 1 vendors. Instead of negotiating from a position of strength, using both pricing and allocation to maintain control of a host of PC vendors, Intel could be at the mercy of the largest one or two survivors. As a result, we believe that Intel will find its best interests served by supporting and promoting a new Tier 1 vendor to maintain its “divide and conquer” strategy in the PC market (see “Desktop PC Market Predictions for 2002,” HARD-WW-DP-0170).

Storage: Profound Changes Expected Across Most Areas

As with the rest of the IT industry, storage demand has slowed dramatically because of continuing worldwide economic pressures. Storage vendors should expect reduced demand through at least the first half of 2002. Only the storage management market will grow. Increased awareness of the need for

disaster recovery, exacerbated by the Sept. 11 tragedy, has caused a demand for networked backup products.

New backup management tools and disaster recovery planning services will highlight the holes in company data protection strategies, driving new networked backup purchases. In addition, because storage frequently represents the largest component of the enterprise computing budget, there is growing need for information about how the resource is being used and by whom.

Vendors need to help customers identify their capacity management issues, creating a demand for storage resource management tools. Enterprises need to work with these vendors to identify the holes in their current data protection strategies (see "Storage Predictions for 2002," HARD-WW-DP-0173).

Servers: Open Standards Lowering Barriers to Entry

As in all other segments of the hardware market, the server market will see significant upheaval in 2002. Shrinking margins, alternative platforms and changing architectures will continue to put pressure on server vendors to re-examine their product portfolios, move toward a services model and invest in strong marketing (see "Server Market Predictions for 2002," HARD-WW-DP-0172).

In 2002, Intel-based servers, which have already exceeded RISC-based servers in unit shipments, will also pull ahead in revenue. Linux will take share from Novell NetWare and, to a lesser degree, Windows. Open standards in hardware and operating systems will lower the barriers to entry to the server market. At the same time, server appliances, especially caching servers, will provide low-cost ease-of-use and capabilities benefits to users, while forcing traditional server vendors into a more-defensive stance.

Mainframes: Challenges from Unix on the Horizon

With 85 percent of all installed mainframe power, IBM continues to dominate the mainframe market. However, with much of IBM's mainframe line offering more performance than most enterprises can use and a total cost of ownership (TCO) that is not attractive below 60 MIPS, Unix is becoming an attractive alternative. IBM's challenges are to market mainframe value, to provide affordable hardware and software pricing and to muster a strong response to the Unix challenge (see "IBM Mainframe Platforms Predictions for 2002," DF-14-9806).

The three main non-IBM mainframe vendors (Bull, Fujitsu Siemens Computers and Unisys) have shrinking but profitable mainframe businesses. Each still depends on proprietary systems that are being threatened by the declining skills base and the lack of support by independent software vendors. Alternative platforms are causing defections at the low-end of performance. All these vendors are planning to move to standardized chips across their whole range of processors and toward hybrid structures that combine proprietary mainframe operating systems with Unix or Windows NT/2000. All are expected to remain viable through 2006 (see "Non-IBM Mainframe Platforms Predictions for 2002," DF-14-9807).

Thin Clients: TCO Concerns Drive Growth in 2002

Thin-client deployments will increase 35 percent in 2002, driven by a TCO focus to cope with shrinking budgets. There is also an increased awareness of the need for data security and continuous operations, particularly in financial institutions and federal government sectors. The declining price of thin-client devices has also contributed to this growth, as well as growing resentment of Microsoft's upgrade policies (see "Thin-Client Predictions for 2002," COM-15-0003).

Most thin-client deployments are tactical deployments for a particular department or application. Thin clients are not suitable as an across-the-board substitute for fat clients.

Office Document Output: Four Trends Determine Success

In the output market, four trends will determine which products will be most successful, which solutions should be at the top of enterprises fix-it lists, and which vendors will thrive in 2002 (see "Office Document Output Predictions for 2002: Output Awakens to Digital and Color Potential," HARD-WW-DP-0175).

1. The U.S. office copier market will finally finish its 10-year transition to digital print engines, thus leveling the playing field for vendors; a complete digital copier line will no longer differentiate your enterprise; it is simply a prerequisite for doing business in this space.
2. The difference between leading and lagging vendors is not merely the availability of a printing option for digital copiers, but how well the copier/printer solution is integrated into a complete document output solution. Corporate and enterprise users of networked digital copier/printers are recognizing additional cost benefits from centralized service and billing. Small and midsize businesses are particularly attracted to the combined functionality of printing, copying, faxing and, more recently, scanning that the digital revolution has enabled.
3. Output management will commoditize in 2002, vendors will push scanning as a mainstream solution in the office, but will be largely unsuccessful.
4. The adoption of color printing in the office will get a significant boost as vendors introduce faster color devices at new lower price points.

Vendors are advised to focus on operational efficiencies for survival. Products need to stress value, functionality and appropriate fit to user needs, rather than technology. Service and targeted solutions will be critical. Strong industrial design will be a differentiator on client platforms in 2002. Strategic and operational flexibility will be a key ingredient of success.

Users need to examine the viability of their hardware suppliers. Even within the viable vendors, it will be important to pay close attention to technology and product road maps. With the current flux in server market architectures, not all the competing technologies will survive. No one wants to support an orphaned platform.

Features

"Handheld PC Market Predictions for 2002" (HARD-WW-DP-0171). Expect a tumultuous year. **By Ken Dulaney and Todd Kort**

"Notebook Market Predictions for 2002" (COM-15-0779). Value takes the lead over features. **By Leslie Fiering and Mark Margevicius**

"Desktop PC Market Predictions for 2002" (HARD-WW-DP-0170) Many PC vendors will fight for survival. **By Charles Smulders and Mark Margevicius**

"Storage Market Predictions for 2002" (HARD-WW-DP-0173). Worldwide storage markets to experience profound and lasting changes. **By Roger W. Cox, Mary Craig, Carolyn DiCenzo, John Monroe, James Opfer, Pushan Rinnen and Fara Yale**

“Server Market Predictions for 2002” (HARD-WW-DP-0172). Entry barriers are lowered. **By Jeffrey Hewitt and Leslie Fiering**

“IBM Mainframe Platforms Predictions for 2002” (DF-14-9806). IBM continues to dominate the mainframe market accounting for 85 percent of installed mainframe power. **By Josh Krischer**

“Non-IBM Mainframe Platforms Predictions for 2002” (DF-14-9807). Major non-IBM mainframe vendors will all continue to make significant announcements in 2002. **By Josh Krischer**

“Thin-Client Predictions for 2002” (COM-15-0003). Deployments will increase 35 percent in 2002. **By Peter Lowber**

“Office Document Predictions for 2002: Output Awakens to Digital and Color Potential” (HARD-WW-DP-0175). Four key trends will determine which products and services will be most successful in 2002. **By Peter Grant, Don Dixon and Andrew Johnson**