

2004 PC Purchasing Recommendations

Infrastructure Strategies

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FOCAL POINT

Although technical specifications are not as critical to the PC procurement process as they once were, organizations must still take care to neither underconfigure nor overconfigure systems. These recommendations provide guidelines for general PC procurement through 1H04.

CONTEXT

The pace of hardware change in the PC industry is about to accelerate again as new architectural elements enter the mix. At the same time, corporate buyers are striving to maintain the greatest levels of product consistency possible. This is resulting in a need to carefully balance the configurations for new PC hardware.

As we have noted previously, companies need to review and set consistent standards for the specifications of PCs they are purchasing. Selecting the right mix of specifications ensures that organizations get the maximum benefit from their purchasing dollar. We recommend a new standard be set each year for desktops and notebook systems with a six-month review to catch minor changes and a price check every three months. Every attempt should be made to keep the base standard as consistent as possible for the full 12 months to minimize the number of images that need to be supported. As a reflection of typical industry cycles, desktop specifications should be set in the June/July time frame, and notebook specifications should be set in the December/January period.

These recommendations are for typical mainstream office deployments and are designed to meet the following three primary criteria:

- To ensure long-term availability with maximum consistency
- To provide an appropriate level of performance and capability for typical office usage during the next three years
- To provide maximum opportunity for mainstream pricing options and cross-vendor availability

These guidelines do not cover every aspect of system selection and form only one component of the vendor and product selection process. As noted previously, these guidelines are for typical mainstream information worker deployments. Buyers must understand how the specific needs within their user population might affect these recommendations and adjust accordingly, using these specifications as a baseline. In most cases, we have outlined where a specification could be adjusted to improve performance or some other factor if the base configuration is insufficient. We have also included the expected timing for any significant change to the specification during the next two years.

Desktop Systems

Desktop systems remain the mainstay of corporate deployments. For the majority of users, performance and storage requirements have been relatively static for the past several years. However, we expect that an increased focus on security, automated administration, advanced group

META Trend: Windows-based PCs will remain the dominant access device for corporate and consumer users through 2008, though non-traditional desktops (e.g., Linux systems, blade PCs, small form-factor devices, thin clients) will grow to service more than 15% of corporate end users in that period. Increased mobility, improved wireless access, changing lifestyle situations, work needs, and personal preferences will drive a greater variety of devices. By 2007/08, a continued need to balance cost-effectiveness with increased user agility, coupled with a renewed focus on improved user experiences, will increase the importance of end-user platforms.

collaboration, and rich media will drive increased demands. At present, desktops are available in three primary form factors: ATX minitowers, low-profile desktops, and small form factor. Although minitowers provide the greatest flexibility and are the choice of consumers and hobbyists, we believe that the small form factor provides the best package for corporate rollouts. The price premium paid for the smaller packages has decreased to well under \$50 and we frequently see no premium (see Deltas 2405 and 2592, and WCS Deltas 1204 and 1149).

The next major transition of the corporate desktop platform centered around the upcoming "Grantsdale" chipset is expected from the vendors in 2Q04. We recommend customers plan for a transition no earlier than 3Q04 and no later than 1Q05 (see Figure 1).

Notebook Specifications

Notebook selection is more difficult as personal preferences are deeply ingrained. In addition, significant operational variations exist between the various form factors that will affect the selection for any given user population. As with desktops, three primary form factors exist: full-sized desktop replacements, thin and light, and small form factor (also called subnotebooks). For the most part, we recommend companies focus purchasing on the thin-and-light category of devices. Desktop replacement models should be avoided because they typically suffer from other tradeoffs in design and are mostly targeted at consumers and small businesses requiring only basic transportability rather than mobility. Ultralight notebooks are attractive to users with heavy travel demands; however, the lack of embedded optical drives, smaller screens, and typically lower specifications might make the units unsuitable for some applications (see WCS Delta 1224 and Delta 2013). Therefore, we are providing configuration recommendations only for thin-and-light notebooks.

The next major transition of the corporate notebook platform centered on the "Alviso" chipset is expected from the vendors in 4Q04. We recommend customers plan for a transition no earlier than 1Q05 and no later than 3Q05 (see Figure 2).

Bottom Line

Corporate buyers must carefully balance the configurations for end-user devices to ensure that systems provide the greatest utility, longevity, and opportunity for consistency.

Business Impact: Selecting the wrong configurations for end-user systems can drive up costs, while limiting corporate agility.

Figure 1 — Desktop Configuration Recommendations

Processor	<p>Intel Pentium 4 with HT — 2.8GHz</p> <p>Next transition 3Q04 Intel Pentium 4 with HT — 3.0GHz (P4E-Prescott)</p>	<p>In general, we recommend that companies focus processor purchasing toward the upper middle of the Intel family. This provides a good balance between pricing and long-term availability.</p> <p>The Pentium 4 provides a stable reliable platform. Although the effects of hyperthreading are subtle, it does provide an additional boost for foreground operations when significant background processes (such as management or security tools) are running, and there is little or no premium for the option. The current middle of the family is the 2.8GHz speed bin. This should ensure availability through 3Q04. For high-end users, the 3.2GHz P4 HT provides a noticeable extra boost in performance.</p> <p>At present, we do not feel any of the currently available AMD-based corporate systems offer strong enough incentive to deviate from the Intel family for mainstream users. However, for specific large single purchase deals where long-term consistency is not an issue, AMD or Celeron processors can provide acceptable low-cost options.</p>
Chipset	<p>Intel 865G</p> <p>Next transition 3Q04 Intel 915G "Grantsdale"</p>	<p>The Intel 865G chipset is part of the Intel Stable Image Platform program and provides the greatest consistency with continued availability through YE04. This chipset recommendation holds for all but the very highest-end desktop performance requirements, where the Intel 875P would be substituted.</p>
Memory	<p>512MB DDR333</p> <p>Next transition 3Q05 512MB DDR2</p>	<p>Few applications or user environments would currently show much benefit from increasing memory beyond 512MB. There is little difference in price between DDR333 and DDR266 memory at this point, so we recommend buyers select the faster memory. For performance-hungry systems, buyers should install two matched banks (i.e., two 256MB DIMMS) of DDR400 memory. If DDR400 is unavailable or too expensive, still select two banks to ensure dual channel support for memory access.</p>
Hard drive	<p>80GB S-ATA</p> <p>No upcoming transition</p>	<p>Although serial ATA drives are preferred, a competitive 7200RPM parallel ATA drive is also acceptable. At this point, 80GB is the smallest drive in common availability and will ensure a long consistent availability. Larger amounts of local storage should be avoided because they create issues with corporate data and backup.</p>
Graphics	<p>Intel Extreme Graphics 2 (Embedded 865G graphics)</p> <p>Next transition 3Q04 Intel Extreme Graphics 3 (Embedded 915G graphics)</p>	<p>Graphics provided on the 865G are more than capable of handling all common business graphics tasks at any resolution currently offered within business environments. Although a DVI connector would be preferable, at this point, too much of a premium is being required and not enough selection exists among the vendors.</p>
Optical	<p>CD</p> <p>No upcoming transition expected</p>	<p>Although combination drives (combined CD-RW/DVD) provide greater flexibility, they are still too expensive and not really required for the vast majority of users. A CD or DVD writer might be appropriate for some users, but we recommend limiting deployment because they pose an additional software complexity, security, and management issues.</p>
Networking	<p>Intel 10/100/1000</p> <p>No upcoming transition expected</p>	<p>The 865G chipset includes support for a 10/100/1000 Mbps Ethernet adapter.</p>
Extras	<p>Speakers/audio connections</p> <p>No upcoming transition expected</p>	<p>Increasingly, users will need to access rich media content requiring some audio output. Inexpensive or integrated speakers are an acceptable option for most corporate desktops. However, in open environments, an easily accessible headphone jack and an inexpensive set of headphones will be essential to maintain peace in the workplace.</p>

Source: META Group

Figure 2 — Notebook Configuration Recommendations

Processor	Intel Pentium M 1.6 GHz (Centrino preferred) Next transition 4Q04 Intel Pentium M 2.0 GHz "Dothan" (Centrino preferred)	The Intel Pentium M included with the Centrino bundle provides the best overall part consistency as well as power efficiency and enough performance for even demanding tasks.
Memory	512MB DDR333 Next transition 1Q05 512 MB DDR2	Few applications or user environments would currently show much benefit from increasing memory beyond 512MB. There is little difference in price between DDR333 and DDR266 memory at this point, so we recommend buyers select the faster memory. Performance-hungry systems should opt for 1GB of memory to improve caching and general overall system performance.
Hard drive	40GB-60GB No transition expected	At this point, 40GB is the most common and best overall price/capacity drive for notebooks. However, user application demands should be accounted for in the decision. Drives larger than 120GB should be avoided, because these are currently unproven in extended day-to-day use.
Chipset	Intel 855GME Next transition 4Q04 Intel "Alviso"	This chipset, part of the Centrino package, provides the greatest consistency and will continue to provide availability through 2Q05.
Wireless	Intel PRO/Wireless 2200B/G Centrino Next transition 4Q04 Intel Centrino a/b/g	Although we believe that eventually dual-band tri-mode a/b/g will be the preferable solution, until these become available, the b/g provides the best interim solution.
Graphics	Intel Extreme Graphics 2 (Embedded 855GME graphics) Next transition 4Q04 Intel Extreme Graphics 3 (Embedded "Alviso" graphics)	The graphics provided on the 855GME are more than capable of handling all common business graphics tasks at any resolution currently offered within business environments. However, in the notebook market, it is common for discrete graphics processors to be used. At this point, any commonly used graphics processor will be sufficient for corporate use, though we recommend either ATI- or nVidia-based processors.
Display	14-inch standard XGA (1024x768) LCD display Next transition 4Q05 15-inch wide screen	Companies should be careful when selecting notebook displays and understand the tradeoffs of higher resolutions (e.g., 1280x1024 or greater). Although these screens look stunning for graphics, text can be too small to read for some users. Additionally, wide screen displays still command too high a premium and, until Longhorn, provide limited benefit for typical applications.
Optical	DVD/CD-RW combo drive Next transition 4Q05 DVD Rewriteable combo drive	This drive provides backup capability through the CD-RW and enables compatibility with the widest variety of disc formats. Although rewriteable DVDs are becoming increasingly common and lower priced, we feel this technology is still not quite ready for mainstream notebook users. However, high-end users might find rewriteable DVDs useful in specific application scenarios.
Backup	External USB hard drive No transition expected	Unlike desktop users, a large portion of notebook users are usually disconnected from corporate network resources and thus have a requirement for a personal backup facility. Although writeable optical can provide such a capability a preferable option is an external USB 2.0-based hard drive. These drives are now available in 20GB-40GB capacities, very small packages, and are lighter than many power supplies.
Extras	Docking station/port replicator, extra battery No transition expected	Generally, we feel that complete powered docking stations are no longer required by most users. However, if work environment and styles dictate the use of a docking station, it should, at a minimum, include the ability to aggregate keyboard, mouse, video, power, and at least 2 USB 2.0 connections.

Source: META Group