Part I

Getting Started with Windows Vista

Chapter 1

Microsoft Windows Vista: Windows for the 21st Century
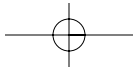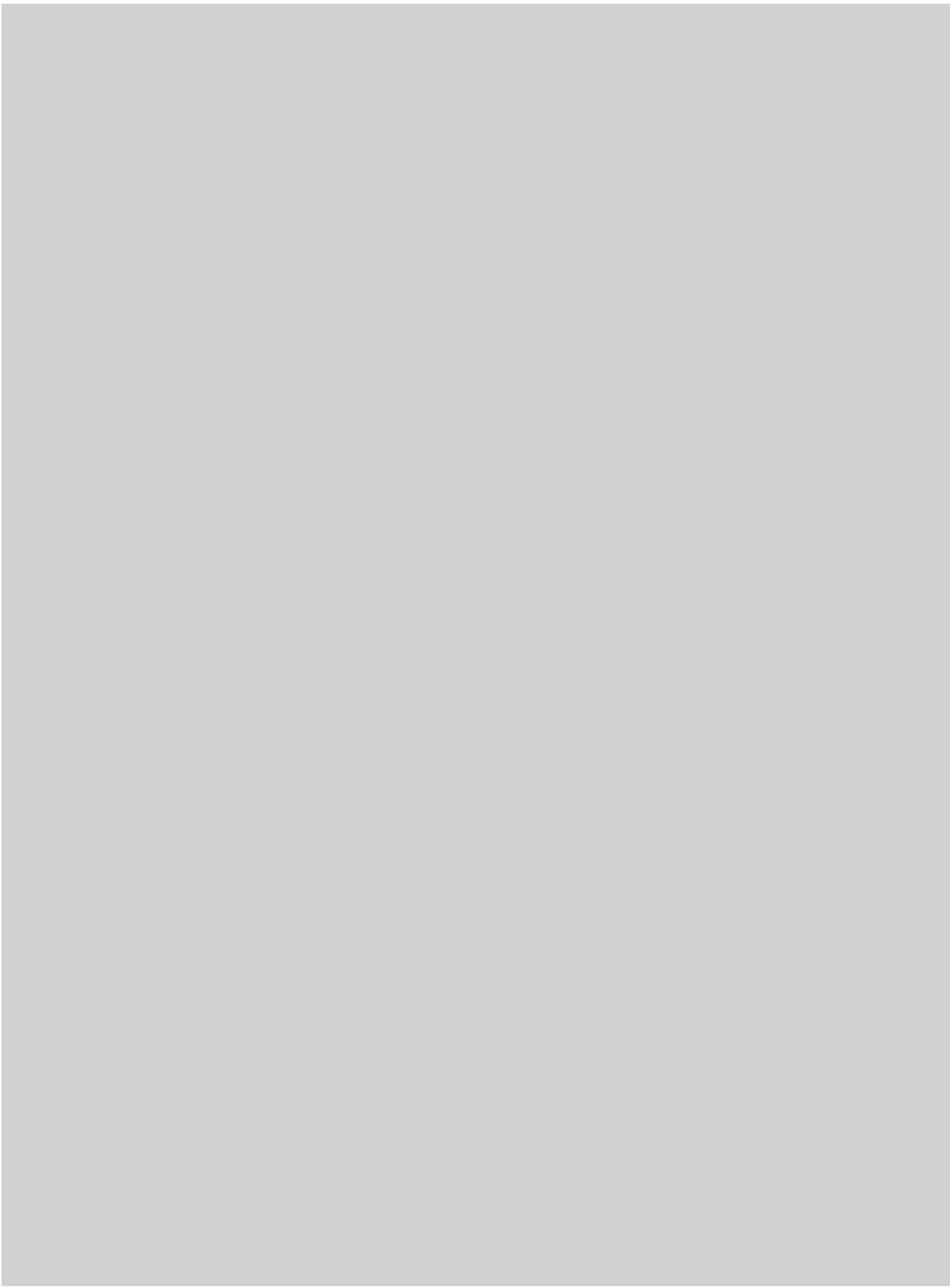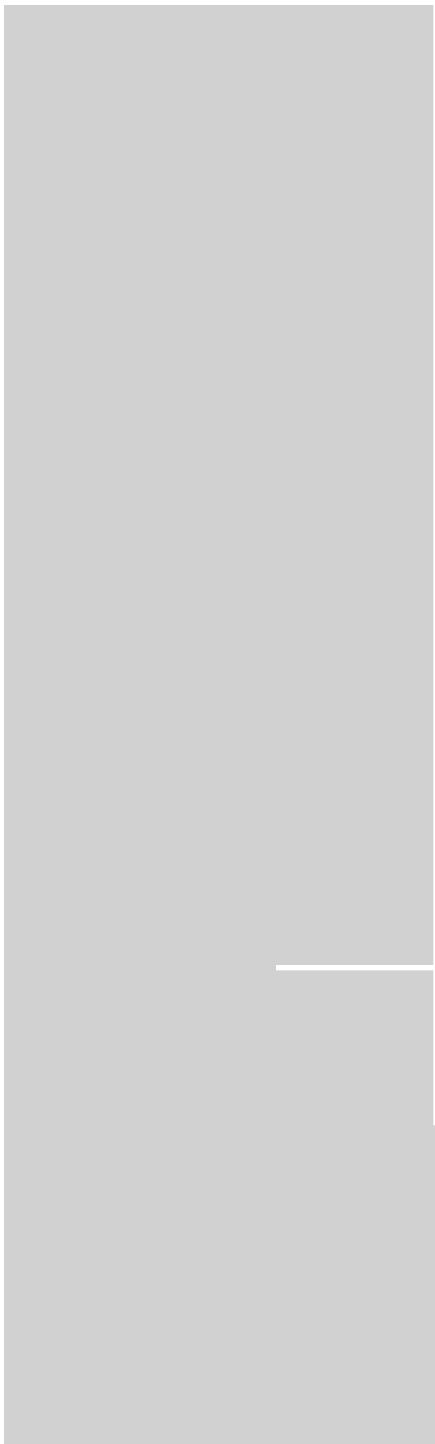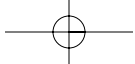
If you've been around a while, you know that the advent of the Windows operating system revolutionized the PC desktop. (Of course, Macs had a look and feel similar to Windows long before, although Macintosh and Windows users should remember that Xerox Parc preceded them both.) It was more than ten years before Windows went through a major change with Windows 95 (cue the Rolling Stones' *Start Me Up!*). Win95 represented a significant departure from the Windows of old. In the next six years Microsoft brought us Windows 98, Millennium, 2000, and XP as updates to Windows 95. Now, another 10+ years have passed and another significant change is before us (see "The Windows Family Tree" sidebar if you can't get enough of this stuff). You thought Microsoft was late again, but they're right on time, every decade.

Big changes in operating systems often follow big changes in hardware. Windows Vista exists, in part, to take advantage of new processors as well as abundant RAM and disk space. It also has been designed to place Microsoft at the center of the convergence of media and entertainment systems with desktop and portable computers, as well as to expand Microsoft's hegemony into Web-based services. Millions of people want to rip CDs and vinyl to disk and stream music and digital photos around the house while they wirelessly browse the Web and blog about their day. (Half the words in that sentence meant nothing in the context of Win95 and earlier.)

Is Windows Vista a big deal or just another upgrade? Let's see.

Figure 1-1 shows part of the Windows Vista desktop and the taskbar. Notice the new Welcome Center, and the fact that the word "Start" is gone.

In the next chapter, we'll take a closer look at each of the elements of the new interface. For now, let's just say the look isn't radically different from XP but hints at the changes we'll work through together in this book.

As you ask yourself, "Is Vista for me?," here are some of the features that may interest you (see `www.microsoft.com/windowsvista/` for other ideas):

- **Security enhancements** — Microsoft heeded the hue and cry over Windows' vulnerabilities to attack. Ironically, Microsoft's efforts to improve security have also irked some users and competing security companies.
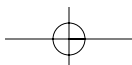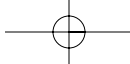
- **Improved search functions** — You'll soon see that the capability to search is available in places you've never seen it before, with new, advanced options.

- **Simplified and expanded options for listing documents** — See and sort files in brand-new ways within Windows Explorer.

- **More options for playing media files** — Both Media Player and Media Center play the same music and video files, plus DVDs.

- **New and improved applications** — Stay in touch using Windows Contact, Windows Calendar, and Windows Mail (a mild update to Outlook Express). Enjoy and edit photos using Windows Photo Gallery. Be dazzled by the included games.

Keep in mind that not every feature noted above is in every edition of Windows (more to come on that). We'll expand on each of these areas and more throughout the book.
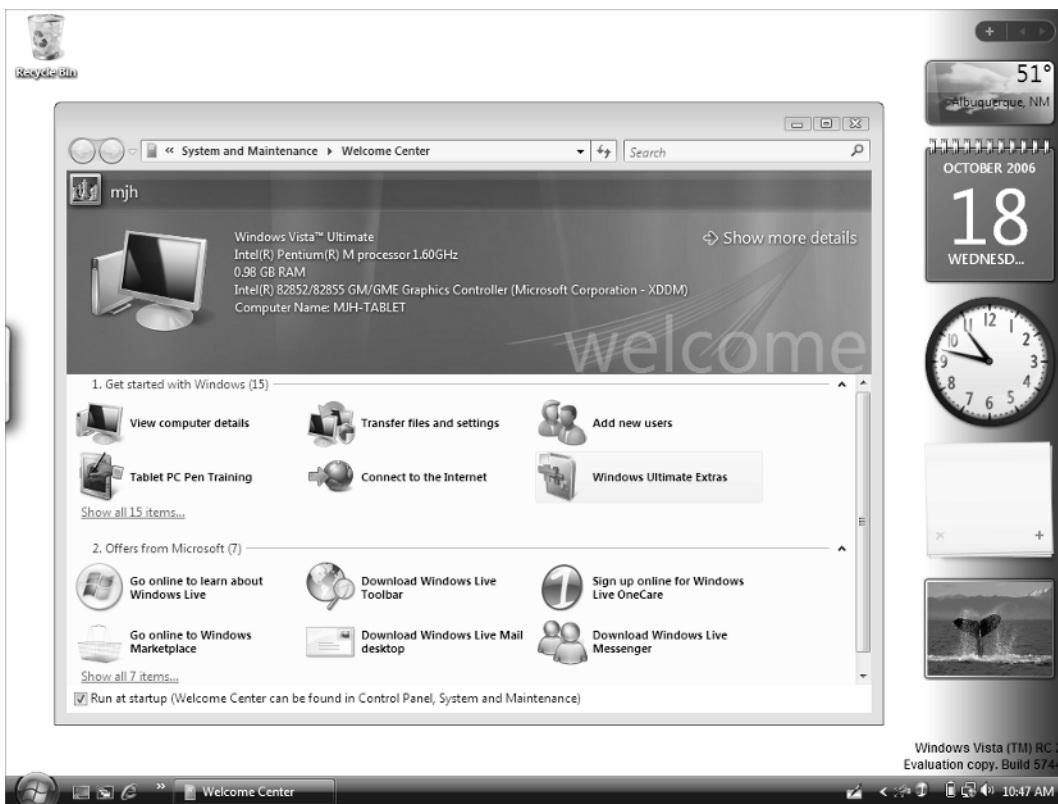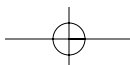

Figure 1-1: Windows Vista's desktop, taskbar, and Welcome Center

The Windows Family Tree

Let's ignore the contributions of all the other operating systems and restrict ourselves to the kin we admit to.

Microsoft DOS	The dawn of time, at least for Microsoft. A nongraphical text and command-line operating system. Much of DOS lives on in some form in Windows: folders ("directories") and files, including filename extensions. (I'm not saying Microsoft DOS was the first or best at anything — just that it popularized, even engrained, many ways of doing things.)
Microsoft Windows pre-Win 95	Brought multitasking, a graphical interface, windows, and the mouse into wide use on PCs, especially with Win 3.1 and Windows for Workgroups (WfWg).
Microsoft Windows 95	*Start Me Up!* Brought us the Start menu and the taskbar. The Web's influence appears now, especially in simplified operations such as Forward and Back, and icons as links.
Microsoft Windows post-95, pre-Vista	Start a fight over whether there were any innovations in Windows ME or Windows 2000. Windows XP was, at least, more stable and more media savvy. Then the world held its breath for five or six years.
Microsoft Windows Vista	Like XP to 3.1 or XP to ME? You decide.

Which Windows Vista? Five Options (Or Is It One?)

As you see in the sidebar, way back with Win3.1 there were different "flavors" of Windows available (3.1 versus WfWg). Underlying these flavors or "editions" is Microsoft's apparent belief that there are two major camps of users: home users and office users — more precisely, individuals and IT managers (though not to couch it as us versus them). Part of the logic is that what works for one person at home with a PC or two doesn't necessarily work for one person or department responsible for 100, or 1,000, machines.

Large business users and the technical staff that supports them need more powerful tools for maintaining numerous systems over a wider area than home users, so it makes sense for the business version of an OS to have extras.

Conversely, Microsoft sometimes gives the home user features it leaves out of the business version, as if "we know you business people don't have time for fun." Or is it "We know you bosses hate for your employees to have fun"?
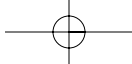
Microsoft lists the "editions" of Windows Vista this way: Home Basic, Home Premium, Business, Enterprise, and Ultimate. You see the clear tracks of home versus business, but there is at least one misleading aspect to this: the home user will have no use for Enterprise, but he or she may want Ultimate (a hybrid of Home Premium and Enterprise).

Windows Worldwide

Most readers in the United States will never see these additional variations:

- **Starter 2007** — In some areas of the world, one can buy a computer and Windows under a kind of installment plan, sort of like prepaid wireless. This edition has limited support for multitasking and none for networking, though it will connect to the Internet. Starter will run with less RAM than other editions (385 MB) and with lower graphics requirements.

- **European Union versions** — The EU has been very tough with Microsoft regarding antitrust matters. As a result, as with XP, the EU requires versions that do not include Media Player and some other multimedia support: Home Basic "N" and Business "N" (No Media Player). I assume citizens of the EU can download Media Player on their own.

  More recently, Microsoft has made other concessions to the EU that may also affect the U.S. editions; I'll note these where appropriate.

Every edition has a core set of features, including some, but not all, of the new look and feel (the GUI, or graphical user interface). The new Start menu, the fast searching capabilities, the new look of Windows Explorer, and the new version of Internet Explorer are included in all editions of Vista. Still, there are differences (see also Table 1-1):

- **Home Basic** constitutes the core set of features, with only some of the new interface's features and limited support for multimedia. It is tempting to compare it to XP Home, but I think it will prove more disappointing than that for many, because it lacks some of the graphical features that are most talked about. You can expect this version to be preinstalled on new discount desktop computers.

- **Home Premium** is effectively the upgrade for Windows XP Media Center and XP Tablet editions combined, incorporating new options for viewing media, as well as support for handwriting and speech. Home Premium offers all of the new aspects called *Aero Glass*, with semi-transparent windows and animated effects (some of this is absent from Home Basic). Some people dismiss many visual effects as eye candy and will turn them off; others find those effects cool. This will be a good choice for most home users.

- **Business** has some features Microsoft assumes matter more to business users than to home users. For example, some backup features present in Business are missing from Home Basic and Home Premium. Why would anyone want fewer backup options? A small business with limited in-house support might want this version.
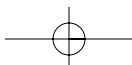
- **Enterprise** features Subsystem for Unix-based Applications and Multi-Lingual User Interface. It is probably aimed more at IT/IS departments (Information Technology/Information Services) than small businesses.

- **Ultimate**. The name says it all. When you're standing in line at the store with Home Basic behind someone who is buying Ultimate, will you feel embarrassed? Ultimate includes everything in Home Premium and Enterprise. It may be more than you *need* for individual use but it has everything you *want*.

  Microsoft promises "Ultimate Extras" but has so far only said these will include "cutting-edge programs, innovative services, and unique publications."

Don't let my flippant tone insult you if, in fact, Home Basic is appropriate for you. Still, if price is not a major factor, why buy less than everything? This isn't like buying a house 10 times larger than you need. It's more like choosing between an empty notebook binder and one with dividers and paper — is it unreasonable to want the latter?

On the other hand, as you will see in more detail later, Windows Vista demands a lot of your hardware, and those demands are somewhat greater in the Ultimate edition than in Home Basic. There is a good chance that some of Ultimate's features simply won't be available on older or less powerful machines. On one test machine, although Ultimate installed OK, the options for Aero — transparency among them — did not appear until I replaced the graphics card.

Cross Reference
You can buy a new computer with Windows Vista preinstalled or you can upgrade an existing system. Don't spend extra money before you read Chapter 3, where we'll examine both of those options in greater detail.

Table 1-1: Windows Vista Features

Feature	Basic	Premium	Business	Enterprise	Ultimate
Aero interface enhancements	X	X	X	X	
Internet Explorer 7	X	X	X	X	X
ReadyBoost	X	X	X	X	X
ReadyDrive	X	X	X	X	X
Search enhancements	X	X	X	X	X
Sidebar and gadgets	X	X	X	X	X
SuperFetch	X	X	X	X	X
Windows Explorer enhancements	X	X	X	X	X

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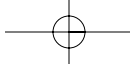
8　**Part I:** Getting Started with Windows Vista

Table 1-1: Windows Vista Features *(Continued)*

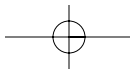| Feature	Basic	Premium	Business	Enterprise	Ultimate
Security Features (see Chapter 4)					
Backup — basic files and folders	X	X	X	X	X
BitLocker Drive Encryption		X	X		
CompletePC image backup		X	X	X	
Defender	X	X	X	X	X
Encrypting File System		X	X		
Family Safety Settings & Parental Controls	X	X		X	
Firewall	X	X	X	X	X
Previous Versions (aka Shadow Copies)			X	X	X
System Restore	X	X	X	X	X
Media and Internet Applications (see Chapters 14–17)					
Calendar	X	X	X	X	X
DVD Maker	X		X		
Fax and Scan			X		
Mail	X	X	X	X	X
Media Center	X		X		
Media Player 11	X	X	X	X	X
Movie Maker	X		X		
Photo Gallery	X	X		X	
Premium Games	X		X		
Laptop & Tablet PC Features (see Chapter 18)					
Mobility Center	X	X	X	X	
Presentation settings	X		X		
SideShow	X		X		
Speech Recognition	X		X		
Sync Center/Offline Files	X	X	X	X	
Tablet PC & Touch Support	X	X	X	X	
Business and Enterprise Features					
Connect to Domain	X	X	X	X	
Group Policy		X	X	X	
Meeting Space (formerly NetMeeting)	(join only)	X	X	X	X

Table 1-1: Windows Vista Features *(Continued)*

Feature	Basic	Premium	Business	Enterprise	Ultimate
Multi-Lingual User Interface (MUI)		X	X		
Network Projection	X	X	X	X	
Remote Desktop		X	X	X	
Subsystem for Unix-based Applications (SUA)		X	X		
Web-server IIS 7		X	X	X	
Ultimate Extras (unknown)			X		

The More You Pay, the More It's Worth

As shown in Table 1-2, the full price for some editions of Windows Vista may come as a shock to some. Consider that many people will get Windows Vista preinstalled and included in the price of a computer. Many more will qualify for upgrade prices. Finally, you use the operating system for hours on end every single day for years; what's that worth?

Table 1-2: U.S. List Prices for Vista

Windows Vista Home Basic	
Windows Vista Home Basic *Full*	$199.00
Windows Vista Home Basic *Full* (additional license only, no disc)	$179.00
Windows Vista Home Basic *Upgrade*	$99.95
Windows Vista Home Basic *Upgrade* (additional license only)	$89.95
Windows Vista Home Premium	
Windows Vista Home Premium *Full*	$239.00
Windows Vista Home Premium *Full* (additional license only)	$215.00
Windows Vista Home Premium *Upgrade*	$159.00
Windows Vista Home Premium *Upgrade* (additional license only)	$143.00
Windows Vista Business	
Windows Vista Business *Full*	$299.00
Windows Vista Business *Full* (additional license only)	$269.00
Windows Vista Business *Upgrade*	$199.00
Windows Vista Business *Upgrade* (additional license only)	$179.00

Continued

Table 1-2: U.S. List Prices for Vista *(Continued)*

Windows Vista Ultimate	
Windows Vista Ultimate *Full*	$399.00
Windows Vista Ultimate *Full* (additional license only)	$359.00
Windows Vista Ultimate *Upgrade*	$259.00
Windows Vista Ultimate *Upgrade* (additional license only)	$233.00

"Full" is the price you pay if you do not qualify for an upgrade. An additional license refers to the cost of a second copy (presumably to upgrade another machine you own) when you have already paid the full price or for a qualifying upgrade.

Windows Anytime Upgrade

To address the inevitable issue of feature envy and upgrade fever, Microsoft will make it possible to upgrade through a function called Windows Anytime Upgrade. Therefore, if you want to step up from Home Basic to Home Premium or Ultimate, or from Business to Ultimate, you should be able to do so without buying a completely new installation disk.

New Hardware Support or Demands

Let's consider some of the hardware requirements that may determine which version you can run or whether you will be able to get everything out of a particular version. Keep in mind that you might buy a version but not get all its features due to hardware limitations.

As you look at new computers, you will see two levels of certification: Windows Vista Capable and Windows Vista Premium Ready (the higher certification). A "capable" machine meets minimum standards, whereas a "premium machine" should enable all of Windows Vista features and provide better performance. I have listed the requirements for these standards in each hardware category. Even if the machine you buy or have isn't certified, compare that machine to these requirements.

The Central Processing Unit (CPU)

The main processor is the brain of your computer. It is the hardware that executes the commands that underlie every computer operation. CPUs have been growing more powerful throughout the evolution of computers. Your cell phone or MP3 player may have a processor more powerful than the earliest PCs; it surely has much more memory.

Two companies in particular compete to make CPUs that run Windows: Intel and AMD. Both have recently announced more powerful CPUs.

- **Windows Vista Capable** — 800 MHz
- **Windows Vista Premium Ready** — 1 GHz
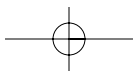
32-BIT VERSUS 64-BIT SYSTEMS

The current generation of systems is built around 32-bit processing, which describes more than just the CPU. Think of 32-bit as the width of a pathway through the system, within the CPU and between the CPU and some components such as RAM. The next generation is built around 64 bits. Anyone can tell you that 64 is better than 32, except in waist size.

Windows Vista will work with 32-bit systems and work quite well. There is actually a separate 64-bit version of each of the Windows Vista editions noted above; your system will automatically install the appropriate version (both are included on each DVD). If you're buying for the future and have the money, consider buying a 64-bit system. Most of us — I include myself here, more than just rhetorically — will do fine with the 32-bit version.

DUAL-CORE PROCESSORS AND MULTIPLE CPUS

A single processor can be *dual core* (or even multicore), describing increased capacity to process instructions simultaneously. Basically, a dual-core chip can be thought of as two CPUs in one.
Your motherboard also may support more than one separate CPU — not dual core, but two chips — which is another way of increasing computing power.

All these features: 32-bit versus 64-bit, dual- or multicore, and multiple CPUs require an operating system that can support them. Windows Vista can.

The Video Subsystem

Your computer's graphics card is a part of a *video subsystem*, which includes the GPU (graphical processing unit), a specialized chip that takes graphics-related tasks off the CPU, freeing it for deeper thinking. The video subsystem should have its own video RAM. However, many less expensive or older systems use the CPU and main RAM instead. Watch out for the term *shared memory*; this implies the video subsystem does not have its own RAM. You should have at least 128 MB of video RAM.

- ■ **Windows Vista Capable** — DirectX 9; 64 MB video RAM

- ■ **Windows Vista Premium Ready** — A Windows Vista Display Driver Model (WDDM) driver, Pixel Shader 2.0, 32 bits per pixel; 128 MB video RAM (more for higher resolutions or multiple monitors)

Cross Reference

The power of a computer's existing graphics card will be the deal-breaker for many people who wish to upgrade. Older or less expensive systems will be underpowered by Windows Vista's standards. In some cases, Windows Vista may refuse to install; in others, some cool features, such as window transparency, will not work. Buy stock in graphics card manufacturers now.

DIRECTX 10

DirectX 10 is the software side of the video subsystem. The functions within DX10 handle most of the action onscreen. Windows Vista works with DirectX 9 but shines with DX10. Will your graphics card support it? Of course, games and other software will be rewritten to exploit new features of DX10.
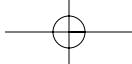
Windows Vista also supports OpenGL, a non-Microsoft standard. Your current graphics card should support DirectX 9 or later.

RAM and Hard Drive

Memory (that is, RAM, or random access memory) is the workspace of the computer. It's where programs and data reside as you work with them.

What kind of RAM chips or modules you have is determined by your particular system. The minimum RAM required is 512 MB. Suffice it to say, you can't have too much. (Well, the Home versions do have a cap most users won't exceed: Home Basic uses up to 8 GB of RAM; Home Premium uses up to 16 GB; the other flavors use whatever you give them.)

- **Windows Vista Capable** — 512 MB
- **Windows Vista Premium Ready** — 1 GB

Cross Reference

You'll learn more about RAM in Chapter 3.

Similarly, you can't have too much storage space. Windows Vista demands a lot of it. It also expects fast disk storage — a spin rate of 7,200 RPM (revolutions per minute) versus older 5,400 RPM drives — plus a big built-in cache (temporary storage that smoothes out transfers between disks and much faster RAM). The newer SATA drives have faster transfer rates than older IDE/ATA drives. Larger drives often have larger caches (16 MB versus 8 MB, or less, for smaller drives).

- **Windows Vista Capable** — 20 GB (15 GB free); CD.
- **Windows Vista Premium Ready** — 40 GB (15 GB free); DVD.

Windows Vista will work with upcoming *hybrid drives* that have flash memory on board. (Think of a device with a spinning disk plus something like a flash drive incorporated.) This feature is called *ReadyDrive* by Microsoft. This is effectively a larger and faster cache, further reducing disk access.

One definite innovation that you can easily take advantage of is called *ReadyBoost.* If you plug in a high-speed, high-capacity (1 GB or more) USB flash drive, Windows Vista can use it for swapping memory. (It will ask you automatically if you want to do this.) Normally, memory swapping goes to the hard drive. When you switch from one active program to another, the hesitation you experience is, in part, due to swapping. If the USB drive is faster than the hard drive, this may speed up swapping. I didn't actually notice a speed difference in my tests, but it seemed to work — at least there were no error messages.

Note

See `www.microsoft.com/technet/windowsvista/evaluate/hardware/vistarpc.mspx` for links to specific processor models (CPUs and GPUs).
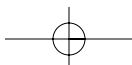
Warning and Disclaimer

Windows Vista was released to the public just as this book went to press. In the past year, a number of features have come and gone and reappeared again in beta. Furthermore, Microsoft changes the name of various functions periodically. If I mention a feature that you can't find in your system, its name may have changed, it may be specific to an edition you don't have, it may not appear due to hardware differences, or it may turn up later in a Service Pack.

Summary

This chapter has taken a brief look at what brought us to Windows Vista — both its history and new developments in hardware. In particular, note the following highlights:

- Windows Vista extends a long line of development in operating systems by Microsoft.
- Windows Vista will come in various editions, or versions. The Ultimate version contains all the features, provided that your hardware supports them.
- Hardware requirements will be high (more on this in Chapter 3).

Before installing Windows Vista, you should examine more of what it offers. In the next chapter, you'll begin to work with the new interface.