Mac versus PC

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Occasionally there is an office that uses the Mac or a radiology department with a UNIX-based computer, but it seems like 99 percent of medical offices use PCs. Why? Does one machine family have an advantage over another? The answers lie in the history of desktop computing.

ONCE UPON A TIME THERE WAS THE APPLE II

Once upon a time (1977) there was a hobbyist computer that became very popular. It was known as the Apple II. Other desktop computers had come before, but none caught on with the hobbyist or research communities, even though one of those machines was named Apple. The Apple II became a financial and popular success. It wasn't until 1980 that IBM released its first desktop computer for the masses, the IBM-PC, Personal Computer.

Right from the start the Apple and PC were incompatible. They were based on different computer chips: Apple on chips by Motorola and IBM on chips by Intel. Although they both used 5.25-inch floppy disks for storage, each used a format that was incompatible with the other. Both could be programmed in the BASIC language, but each used a different and incompatible dialect. This immediately led to a debate among users as to which machine was better. Most users took sides, not just academically, but religiously. In retrospect, the debate may not have been fired by technical differences, but by biblical proportion: it was Apple Computer (David) versus IBM (Goliath).

Biblical stories are strange and don't always come out the way you might predict. There was an interesting twist to the analogy. Apple Computer decided not to license its patents for the hardware design or the operating system of the Apple II; David remained proprietary. IBM made its hardware design public and used a third-party operating system which it called PC-DOS. PC-DOS was essentially MS-DOS purchased from a small start-up company near Seattle known as Microsoft. In the spirit of sharing, IBM did not prohibit Microsoft from independently marketing its version of the IBM-PC operating system, MS-DOS. Goliath went public. Within six months compatible copies of the IBM-PC, known as PC clones, complete with the MS-DOS operating system, appeared on the market and deeply undercut the price of the IBM-PC. Notable among the clone manufacturers were Compaq, Gateway, and Dell. The Apple religionists concluded that Goliath got what was deserved, even though the price of the Apple II began to rise.

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While IBM was busy trying to fight off the competition from PC clone manufacturers, Apple was working on making innovative improvements in its product. It had a failure when, in 1983, it released a next generation Apple II computer known as the Lisa, but recovered a year later with the release of the Macintosh Computer. The Lisa was the first personal computer to have a graphical user interface or GUI (pronounced goo-ee) and a pointing device known as a mouse. One used the mouse to move icons on the screen in order to tell the computer what to do instead of typing keyword-based text as one did with PC-/MS-DOS-based computers. The GUI interface was ported to the new Macintosh and color was added. It should be noted that Apple did not invent the GUI interface or the mouse. Both were invented and developed by Xerox.

MACINTOSH'S NICHE—GRAPHICS SUPERIORITY

Apple's proprietary control of Macintosh hardware and software and its emphasis on color graphics gave the Macintosh a niche—graphics superiority—that it has maintained until very recently. The Macintosh was widely used by the graphics, illustration, engineering, and entertainment communities. It was expensive when compared to the PC, but its capabilities were worth the price. It still used Motorola chips, which some would argue were faster than the Intel chips used by PC manufacturers. Speed was another reason why the Macintosh was a superior computer for graphics. The PC remained the province of business, perhaps because of its association with the IBM name and perhaps because competition had greatly lowered its price.

The sides of this almost religious war were so drawn that by 1995, when Microsoft released its first true GUI operating system, Windows 95, it made little difference.

In fact, it was often said that Windows 95 was nothing more than Macintosh 84. All rhetoric aside, the Macintosh was in a niche market. The PC, often referred to as the Intel- or Windows-based machine, owned at least 80 percent of the Apple versus PC market. Because the design of the PC was open, some manufacturers specialized on improving the quality of the PC's graphics by developing and marketing graphics interface boards. These circuit boards could be plugged into a PC thereby improving its graphic capabilities if needed. With all the competition the price of the PC came down, and the price of the Macintosh went up. Although Apple continued to improve the speed of the Macintosh and the design of the Macintosh Operating System (MAC OS), it continued to loose additional market share.

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With the Macintosh's decreasing market share, developers of application software concentrated on software for the PC. At one point application software for the Macintosh was estimated at being at least one version behind the application software available for the PC.

MAC AND UNIX

In 2001 Apple introduced an entirely new operating system for the Macintosh called System X (ten) or Mac OS X. This operating system was actually a version of the UNIX operating system with a Macintosh GUI as the main user interface. This allowed the Macintosh not only to run all Macintosh applications but also to run programs written for most versions of UNIX. UNIX and graphics are synonymous with radiology, and so the Macintosh started to appear in radiology departments. Apple also be-

gan lowering the price of the Macintosh hardware; an increase in market share followed.

Those unfamiliar with UNIX need to know that it is an operating system developed at AT&T's Bell Labs in the 1970s for time-sharing systems and is used today by most computer scientists, software developers, and radiological imaging machines. It probably represents a 5 percent market share and is the third great computer religion following PC/Windows and Macintosh. Most of the common applications programs (e.g., Word, Excel, PowerPoint) are not available for use with UNIX. By including UNIX in MAC OS X, the UNIX user gained access to the application programs used by the rest of the computer world, and Apple gained an entire user community.

THE REST OF THE STORY

But the story does not end here. You will recall that since the invention of the first Apple computer, all computers manufactured by Apple have been based on Motorola chips. Apple has announced that it will soon be releasing a Macintosh that will be based on Intel technology. This will mean that Apple will need to release a MAC OS that runs on that Intel-based Macintosh. Will that operating system (David) run on everyday Intel-based PC now running a Microsoft Windows system (Goliath)?

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In today's office environment, does either system—PC or Mac—have an advantage? I don't think so. In today's Internet environment, the interchange of data between the PC and the Mac is no longer a problem. It's your choice. Pick the medical office system that fits your style and meets your needs and then choose the hardware to run it on. But now you also know the rest of the story! ■