# In response to the article: "Intellectual property and computer software"

**29 January 1999**

Dear editors,

Reed's article is an important contribution to the subject of intellectual property under the profit system. In his article, Reed refers to the "collision" of computer technology "with existing intellectual property structures." This phenomenon has been an ongoing one in the brief but volatile history of the computer industry. I would like to add a number of points.

Reed refers to the Apple vs. Microsoft suit, which bears reexamination with the advantage of just a few years of hindsight. Imagine what would have happened had the courts ruled in favor of Apple and declared that the "look and feel" of the Mac graphical user interface (the now ubiquitous mouse-based computer systems) was protected by law! Would the vast majority of personal computer users still be fumbling around with the character-based "DOS" interface today? This is but one example of the ongoing antagonism between this technology and the constraints of private property.

(It should be added that the mouse-based graphical user interface was invented neither by either Apple nor Microsoft. It was developed at Xerox's Palo Alto Research Center labs in the early 1970s.)

Other examples show how the concept of intellectual property has been formulated and then applied selectively by the giant software companies themselves in pursuit of their own selfish ends. Since Bill Gates's Microsoft has been the most successful company in this regard I make no apologies that his name will come up often here.

Gates's first well-known business coup was the licensing of Microsoft's DOS operating system for IBM's first entry into the new personal computer market called the "PC." Up until that time there weren't too many operating systems (OSs) available to IBM, and of those available none were written for Intel's new line of 16-bit processors, which IBM was to use in its PC. The most well-known and respected of the existing OSs was "CP/M," produced by a company Digital Research.

Microsoft secured the IBM deal with an operating system that they had just purchased from a man named Tim Paterson. The name of Paterson's OS, "QDOS" for "quick-and-dirty operating system," confessed to the way the software was cobbled together. Paterson had been working on a motherboard that would use Intel's 8086 chip, which, unbeknownst to him, was the same processor that IBM was planning to use in the upcoming PC. Since an OS for the 16-bit chipset didn't yet exist, Paterson had to throw something together to make his hardware run. He borrowed heavily from the existing, 8-bit version of Digital Research's "CP/M", as it was regarded as the standard. Its commands and internal program calls were adapted to 16-bit. While Paterson added a few improvements, particularly with the file allocation system, the final product bore a remarkable resemblance to "CP/M."

IBM was under the gun to release the PC in a hurry, since they were so late entering the minicomputer market, a fact known to Gates. Microsoft bought QDOS for a fixed price, made several changes, and packaged the new product as Microsoft DOS (disk operating system). Gates then demonstrated what is euphemistically known in corporate circles as "business acumen." He did not sell DOS to IMB, as Paterson had sold QDOS to him. Instead, Gates insisted that IBM pay Microsoft royalties on every PC that they sold. Future manufacturers of IBM "clones" had to make the same agreements. Digital Research and Paterson, who were the sources of DOS, were out of the picture.

Gates, by that time, was not a newcomer to this concept of shady acquisition, or "take what's out there and license it as your own." (I'm reminded of a scene in the movie, "The W.C. Handy Story" where a low-life

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associate of Handy's offers him $50 for a song he wrote and hastily has him sign away his future rights to any proceeds. This has always been a notorious practice in the recording industry. )

Gates's first software conquest was providing and licensing a rudimentary operating system for the first microcomputer, the Altair 8000. The computer was announced on the cover of the January 1976 issue of *Popular Science* and it immediately captured the interest of a wide layer of amateur scientists and hobbyists, but it was only a piece of hardware, with potential, but no software to make it do anything. Gates saw it as his opportunity to be the first to write and license the software for it.

During his many hours working as a programmer, Gates and Paul Allen managed to "borrow" (i.e., make use of without paying for) the time on their employers' powerful minicomputers to write a simulator program which would emulate the functioning of the much more limited 8-bit microprocessors that had been recently put on the market. They were able to adapt the simulator to the Altair's specifications that they gleaned from Popular Science. They used the "borrowed" computer time to adapt the widely known (and freely available) Dartmouth BASIC (Beginner's All-Purpose Symbolic Instruction Code) run on the new little Altair. Clever? Yes. Consistent with the concept of intellectual property he would subsequently publicly espouse? Of course not. This, however, was the beginning of the Microsoft Corporation, and the software industry as we know it.

James Brewer

To the editor:

Regarding Kevin Reed's article, "Intellectual property and computer software": The GNU General Public License (GPL) provides an excellent means to simultaneously protect the dignity and rights of the original author of computer software and free the ideas from the constraints of private ownership.

It's not difficult at all, the GPL simply requires that if a person wishes to make a derivative work, they prominently note the original author and changes they have made to the original work. In addition, they must confer the same rights to users of the new work as they themselves received. Namely, the rights to modify and redistribute.

One aspect of Reed's 1993 article should be updated, though the modification only strengthens his argument. Reed states:

"Initial attempts by software companies to obtain patents failed because a computer program's function is reducible to a mathematical algorithm, which is not patentable."

Recent additions to patent laws now allow the patenting of algorithms.

TS

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