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Comment:

I work as a technology manager for a midwestern land-grant university. In one of our Engineering Mechanics Labs is a scanning electron microscope. The microscope shipped with what was a state of the art for the time Intel Pentium PC running Windows NT 4 (the original, with no service packs). A custom ISA board attached the microscope to the PC. This machine served reliably until 2003, when it finally suffered a motherboard failure.

When looking to replace the system, it was discovered that no manufacturer made current motherboards with an ISA slot. The original manufacturer had been through multiple merges and buyouts, making it impossible to get support from them. Through a peer institution we found a company that made a correct PCI controller board. It was here that we hit the copyright problems.

The original software for the microscope only ran on Windows NT4 Workstation. Microsoft ended support for it, resulting in security issues for the machine. Consequently the machine had to be upgraded to Windows 2000 or XP. However the original software would not work in 2000 or XP. The parent company (Fisher Scientific if I recall correctly) did not produce updated software for the model of microscope. We set out trying to locate the original copyright holder, and ended up back at the parent company. There we were informed that they couldn't give us information, because the status of the copyright was in question. They didn't know if they had it or not. And without a copyright permission, the university could not retain a programmer to try to update the program.

In the end, the lab was forced to take the microscope off the network so it could safely run Windows NT with the old software. In doing so, the microscope is transferring data at 1/6th the speed that it should be as the program can't take advantage of the PCI bus. More, the program is very unstable, causing errors and crashes. This had increased the costs of using the machine by roughly a third. The professor who is stuck does material strength research for the Air Force and DARPA. Yet he is forced to limp by because a 15-year-old program has lost copyrights and can't be replaced without violating US law.

When it comes to software, there should be an abandonment clause. This should allow reverse engineering for the purposes of patching and updating. Otherwise there are dozens of other specialty scientific instruments that are going to run into this.

This sort of problem extends into many scientific software applications. Many older DoS, Windows, and Mac applications are being abandoned in favor of newer technology. However some of the applications are still viable, but can't run on current operating systems. As the public universities move to a 'funded by research' mode, replacing these programs is frequently an obstacle. Being able to legally update an abandoned program could make a significant dent in costs for some smaller and many public institutions.