

SOFTWARE STRUGGLE: DOES THIS STUFF REALLY WORK?

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WHAT'S YOUR OPINION about the reliability of the hardware and software used in today's desktop computers? Most of us with engineering backgrounds use some type of computer in our jobs. If you ask me, there is a definite need for improvement, especially in the software environment.

Sure, the cost of gear is less expensive than any other time in history. And there is more computing bang for the buck on the desktop thanks to Moore's Law, which states that each new chip contains roughly twice as much capacity as its predecessor, and each is released within eighteen to twenty-four months of the previous chip. According to some folks, the amount of today's desktop cpu horsepower is analogous to driving a car from Newark to Denver on a thimbleful of gas. But don't get too excited just yet.

Many critics argue that if operating systems and software applications were like car engines, you would stall every hour and have to replace the engines at least twice a week. The trip to Denver would then take a long time. Some even suggest that if breakthrough application software were analogous to power plants, everyone should start buying their own generators. Okay, so maybe I'm overdramatizing a bit. You must admit, though, that installing and running software these days is not exactly flawless. And I'm sure that some people have considered throwing a plug and play computer out the window. [No pun intended.]

You would think that after so many decades of computing advancements, this stuff would work right out of the box. In many cases it does. But after loading, configuring, unloading and reinstalling some application software programs, it becomes harder to figure out if the hardware doesn't support the software, or the software doesn't support the hardware. Don't bother complaining, either, because your next door neighbor is struggling just the same. Of course hardware vendors like to blame software vendors and vice versa.

Despite the huge success in reliability of software for larger scale computers, the small stuff needs a healthy dose of quality care. Perhaps the reason for this state of affairs is the competitive pressure on vendors to produce more bells and whistles in the code. Many software vendors are eager to push out application programs just to stay ahead and often fail to test the basics. Still, many vendors are attempting to cut production



costs by ignoring the fundamental principles of engineering and quality control. Too bad. Everyone suffers and we all grow less enthusiastic about the next release of technology. The latest downturn in the PC market suggests that many people have lost interest in buying the latest hardware or software upgrade. Can you blame them?

Don't get me wrong. Since I'm also in the business of writing software for desktops, I can empathize with the plight of many vendors. It's challenging to write well-behaved programs that respect other software applications as well as function in a variety of hardware platforms. It's also challenging to keep software costs down when salaries are skyrocketing.

Nevertheless, I can't help but wonder at the caliber of talent writing the code. Due to the IT labor shortage, some vendors may be using individuals who lack the engineering discipline to develop reliable software. There's no doubt that software developers who have formal degrees in computer science and engineering are vital to the success of tomorrow's computing systems, particularly on the desktop. I encourage software professionals to continue expanding their knowledge of formal methods and also urge vendors to hire qualified people.

It wouldn't surprise me if most folks would be willing to have less sophisticated application software in exchange for code that works again and again.

Thank goodness that car engines and power plants aren't made out of today's desktop software applications. Otherwise I might be stuck in a cold, dark house with no reliable means of escape. ■