## Future-proofing your business

# THE BIGGER THEY ARE ...

maddog examines why students should use free and open source technologies when learning the basics of computing.

### BY JON 'MADDOG' HALL

This is a landmark year for me: 40 years in computing (almost all of it using "open source"), 29 years using Unix, and 15 years using Linux (or GNU/Linux to some people). Most of those 15 years I have spent talking and writing articles about using free software. In fact, I have been using the same program to do my text editing for a quarter century because it steadily improves and is available on many systems.

One of my discussion points for free software is always "longevity." I have pointed out to many people that the software industry is a relatively young industry and that, in a lot of cases we are not only putting our collective eggs into one basket, but we appear to be using genetically modified chickens with a lock on the hen house door. If a disaster comes, we might not be able to reproduce our "chickens."

Free software, however, has much in common with free-range chickens – gradual improvement by cross-breeding, open sharing of blood lines, and free and open exchange of results. From time to time, we might lose a chicken to a wild animal, but the overall improvement of the chickens goes on.

### Future-Proofing

A lot of people have laughed at me. They say that they buy their software only from very large companies and that these companies will be around forever. For these customers, I explain that I have seen and often worked for very large companies that no longer exist or are no longer in the same line of business as when I was acquainted wi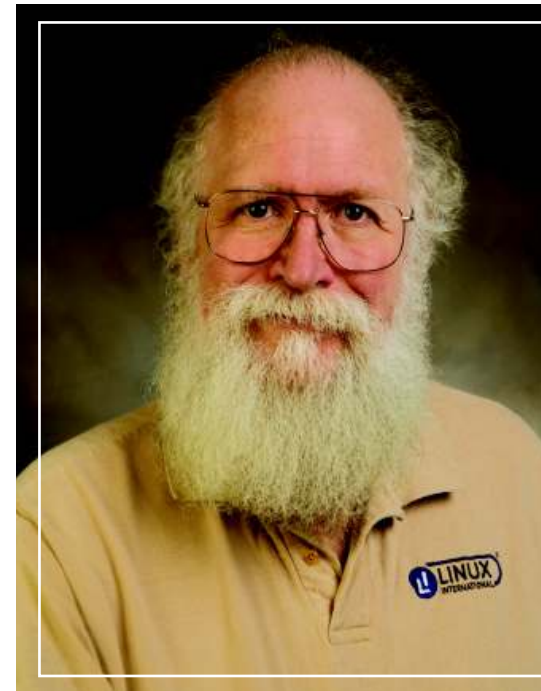th them, such as Apollo, Wang, Data General, Digital Equipment Corporation. Although it is true that some of these companies were bought by other companies (e.g., the recent acquisition by Oracle of Sun Microsystems), whether products and entire product lines survived was the decision of the purchasing company, not the customers using the products.

By purchasing closed-source technologies, these customers lost control of their software. In this day and age, that means the customers have lost control of their business or government.

The latest round of financial collapses offers the example of Nortel. As recently as five years ago, Nortel was a high-flier, one of the largest communications companies in the world. Now Nortel struggles to remain a business. I feel sorry for the thousands of people laid off by Nortel, many of whom tried to do their jobs in an efficient way. I feel sorry for the people that bought Nortel technologies, with no guarantee that the company that buys Nortel's assets will continue to use the same technologies; it is very likely that the purchasing company will transition Nortel's customers to that company's own technologies.

Recently a letter in a trade magazine asked the question: "What will happen to my Nortel training and certification in the future?" I am sure the answer was not what the student wanted to hear.

Years ago I was standing behind a young man wearing the sweatshirt of a prestigious university in New England. I asked him what he was studying, and he said Information Systems. Unfamiliar with that curriculum, I asked whether he was studying compiler theory, or operating system design, or even data structures. He told me he was studying WordStar and SuperCalc.

Compare this education to that I received 40 years ago. I learned the basics of computer science, which included a fair amount of electronics. Even though I concentrated in the software area, I did learn enough about hardware to understand issues of timing, clock delays, why various instruction types took longer to execute than others, and how physical movement of disk heads and tape reels would slow the processing of information. This was a study of fundamentals that has allowed me to build on my university education over the past 40 years.

Some time ago I wrote a blog entry about how some colleges and universities train people in the use of products instead of base-level technologies. I asked the question: "What happens when the products change or the company drops a product line?" I received a fair amount of criticism for my invasion of academic freedom. Yet the current international economic situation demonstrates a need for future-proofing the education and training we offer our students.

I urge institutions of learning to use free and open source software as a tool for training in the basics of any computer curriculum.

A final note: I stopped shaving in 1969, which makes another 40th anniversary for me. ■