The Rich Diversity of Life

BY MICHAEL NORTON

It's a little known fact that Charles Darwin was considered to be somewhat of a failure when he embarked on his famous voyage aboard the H.M.S. Beagle. After proving to be too squeamish for medicine, his well-to-do and respectable family sent him off to study theology, which also proved not to be his forte.

And so Charles was shipped off on a voyage around the world. For a young man in the early 19th century this was similar to being sent to the moon. Although transcontinental seafaring was certainly not a new phenomenon, it was not something to which a typical person could or would want to aspire.

At the time, Darwin's world was still quite provincial. People lived in a rather tight radius. News came slowly from the nether reaches of the world, and the flow of information we take for granted was simply inconceivable. This provincialism had certain intellectual consequences, one of which was the lack of challenges to long accepted notions about life. Even Carl Linnaeus, the inventor of the genus/species classification system, accepted that life had existed in its present form since creation. Why shouldn't he have believed that? The evolutionary process is slow; nothing happens within a generation. All a man would ever see in his lifetime was the forms of life he had always seen. There were rumors and tales of exotic species in far away lands, but nothing could have prepared Charles for the incredible variety of life he would encounter on his voyage.

A SIMILAR VOYAGE

The computer industry has taken a similar voyage and produced an incredible variety of technologies. For example, network computers may not have overtaken the computer world quite to Larry Ellison's satisfaction (or the satisfaction of his shareholders); however, by the end of 1997 enough variants of the thin client concept had emerged to confuse consumers with all the choices available. Currently, Personal Digital Assistants such as Palm Pilot and other handhelds are being touted as possible replacements for laptops in the enterprise. Additionally, Microsoft recently released Auto PC, another computer-like contraption that supposedly will allow you to safely listen to your email while you commute.

The fact is, the innovations that inspired awe and fear just a generation ago are slipping quietly into the mainstream.

Though the great browser debacle is gathering all the attention, a more significant phenomenon is occurring. The browser issue is simply an icicle on the tip of the integration iceberg. The real issue is not the integration of a browser with an operating system but our increasing integration with "the computer." If we accept Sun's premise that "the network is the computer," then each of us becomes increasingly dependent on the computer to work, to play, to live.

For example, as computers proliferated business, those of us who wanted to get ahead bought a PC for the home so that we could catch up on a few extra hours of work each week. This allowed us to leap frog the competition up the corporate ladder. The virtue degraded into vice as we explored every possible angle to integrate our home computer with our office computer, going from remote access to laptops, to laptops with remote access. The consumer computer industry has been all too willing to oblige our addiction, and now we're looking at WebTV and PDAs.

Remember, Java was originally a language for toasters. Increasingly, our appliances, machines, and even our toys are joining the Information Age. A coworker was telling me about Microsoft Barney, a marriage made in hell if there ever was one. The purple seducer dances, speaks, and sings in coordination with CD-ROM software connected via infrared to the PC. Kids love it, and even confirmed Barney haters have to admit that the effect is impressive. It's only a matter of time until Barney reads your email to you. Or, even more likely, some digitized talking head, fully customized to your preferences, will read to you your email, news, scores, stocks or information from whatever other channel you happen to subscribe.

We can breathe a collective sigh of relief now that the predictors of doom and gloom for the post-modern world seem to have been wrong. In fact, 1984 passed us by, so Orwell wasn't quite prophetic. Stanley Kubrick's "2001: A Space Odyssey" seems dated, even considering that three years from now we're projected to have regular, manned interplanetary space flights. The technical marvels of Kubrick's imagination are now mostly commonplace. Inexpensive fingerprint identification units were the darling at last year's Comdex, and retina scans aren't far behind. The video telly with which Dr. Heywood Floyd speaks to his daughter back on earth isn't really of any higher quality than current PC video teleconferencing technologies. The fact is, the innovations that inspired awe and fear just

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THE NEXT FRONTIER

The next frontier for computer hardware and software is, and always has been, in machines — and in networking these machines. It is only our myopic perspective that has made it appear otherwise. Often times, we become locked in to our core competencies and believe that is all there is to computing. That is never the case. The computing world is as diverse as it is expansive. This became obvious during a tech support call a few years ago with a student from M.I.T. Considering the stature of the educational institution, I was understandably curious about the nature of his research. Perhaps he was working on some Artificial Intelligence project or maybe some sophisticated new programming language. At least some exotic new protocol for the network. Actually, it turned out that he was working on something as ordinary as automated control systems — stoplight controllers.

The fact that the cutting edge of computer research would be used for something as mundane as traffic control was disappointing at first. Then it dawned on me that these needs were as important as the business applications most of us assume are the sum total of the computing world. Indeed, such uses have always been at the technological forefront. In fact, the forerunner to the modern PC chip was the 4004, a four-bit microprocessor designed to control traffic lights. The original contractor rejected this design as a failure. To recoup its investment, Intel upgraded the product to eight bits, and the rest is history. *ts*

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