OF LOVE AND SOFTWARE **By** Richard Drake

It's my intention to focus on technology in the much simplified sense of computers and communications, hardware and software. I'll gladly leave to other people biotech, nanotech and the many other 'techs' that have profound ethical implications. I'm interested in software people: people who sell it, people who buy it – and the rest of the people of an increasingly small planet that such astounding technology affects.

And, let me say right from the start, I'm interested in *your* insights on software and ethics. Starting by commenting or suggesting topics of interest using our most basic technology, email, leading in the future to the most environmentally friendly online discussion you've ever experienced.

Even simplified, it's a massive subject that I want to think about in three dimensions: past and future; inside and outside; people and stuff.

That implies looking more deeply at the people on the inside. People

'THE PEOPLE IN THIS SOFTWARE DEVELOPMENT GROUP LOVED EACH OTHER'

like a talented young Englishman and programmer called Tim Berners-Lee. In 1990 Tim had the bright idea of inventing three new things: a uniform resource locator, a hypertext transport protocol and a hypertext markup language. Or as we techies were bound to put it before long: URL, HTTP and HTML.

Ring any bells? These three beautifully separated pieces of technology remain the foundational building blocks of the World Wide Web – a snappy moniker Berners-Lee also came up with right from the start. To give him credit, Tim's always been aware of the massive social implications. On the other hand, in 1990 would he really have predicted that sixteen years later a company based on a mere Web search engine, Google, would pay $1.6bn for the eighteen-month-old YouTube? And that this is by now a trifling amount to the still very young new owners?

It's well worth noting that Tim has made next to nothing, relatively speaking, from his own massive contribution to humanity. We talked about that very thing, had an ironical laugh about it, the one time we met, at Tim's office these days as head of the World Wide Web Consortium at MIT in Boston.

Ah, money. When I talk about 'people and stuff', on the outside, I mean the thorny issues of society and money. What are the ethics of the staggering disproportion of the rewards? Now that really *is* a subject.

And that immediately brings to mind the amazing new ecosystems of open-source software, a movement that Tim's been an enthusiastic supporter of from the very start. (And we really do call them ecosystems, any real-world treehuggers out there. The analogies can mislead, but they surely repay further, er, meditation.)

We want to take a long, hard look at the new ethics of open-source development and the remarkable international communities they engender. It's truly an inspiring story. And anyone using the Web is already benefiting, every day. The vast majority of web servers in the world, from where text, audio and video files come, via good old HTTP, are based on a free, open source program called Apache, programmed

entirely by volunteers from across the globe. (Well, initially by volunteers. Open source is now big business. But that's also for the future.)

I want to start though not with ethics but with love. Here's a small extract from one of the most remarkable pieces so far recorded in the history of software. (The paper, from the American Association of Computing Machinery's History of Programming Languages conference of 1993, can be found on the Web at http://gagne.homedns.org/~tgagne/contrib/EarlyHistoryST.html – note in passing that in that ungainly URL Tim's other two inventions are mentioned at top and tail.)

This paragraph is from a man whose name is even less well known than Berners-Lee, and even more foundationally important to everything we enjoy today: Alan Kay. Kay is talking about the Learning Research Group he led at Xerox's famous Palo Alto Research Center (PARC) in the 1970s, whose vision of a 'Dynabook' gave rise to a host of the innovations we now take for granted, to the ubiquitous personal and notebook computers, with inbuilt networking, pointing device and overlapping windows interface.

By the end of 1975 I felt that we were losing our balance – that the 'Dynabook for children' idea was slowly dimming out – or perhaps starting to be overwhelmed by professional needs. In January 1976, I took the whole group to Pajaro Dunes for a three-day offsite to bring up the issues and try to reset the compass. It was called 'Let's Burn Our Disk Packs'. There were no shouting matches, the group liked (I would go so far to say: loved) each other too much for that.

Yes, you read that right. The people in this software development group loved each other. That was how the world was changed for ever, for the better. But they had hit a key crisis point: *We were troubled. I used the old aphorism that 'no biological organism can live in its own waste products' to plead for a really fresh start… One thing we all did agree on was that the current Smalltalk's power did not match our various levels of aspiration. I thought we needed something different, as I did not see how OOP [Object-Oriented Programming] by itself was going to solve our end-user problems… I think Dan felt that a better Smalltalk could be the vehicle for the different system I wanted, but could not describe clearly. The meeting was not a disaster, and we went back to PARC still friends and colleagues, but the absolute cohesiveness of the first four years never regelled.*

That's a wonderful, honest account of a problem that every software developer knows all about. A problem that, when it is not dealt with in honesty and love, leads to all kinds of ethical compromises.

For the moment, though, let's simply note that, even though the group chose not to take Alan Kay's radical route in 1976, when three years later the founder of Apple, Steve Jobs, was allowed, with some colleagues, to take a look at the top-secret system the group had produced, it changed for ever the way that Apple and then Microsoft and IBM would think about user interfaces, personal computers and the software needed to create them.

The future was, at that point, shaped by love. We want more of that today. Of which more next time.

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