

# Authoring

By Alan Kay

Take some pulverized plant pulp, stir in water, lift out a thin layer with a screen, press and dry, and we have just made paper! A split reed and lampblack in water and tree gum gives us pen and ink. With these we can write "The unexamined life is not worth living", "To be or not to be, that is the question", "E = mc<sup>2</sup>", make a beautiful drawing, compose a fugue, and send them around the world without having to travel with them and long after we have passed away. Perhaps even more wonderful: every child can immediately start to express and augment their fresh new thoughts with pen and paper.

This is a very powerful idea!

Every piece of writing invites comment in writing, because with paper, "authoring is always on". We can and do scribble our reactions and new thoughts in the margins of our favorite books. Some of these eventually may get turned into a book of their own, perhaps supporting the original author's point of view, perhaps dissenting, or perhaps about a completely different idea that got materialized on the spot.

Now, come up with an inexpensive and efficient way to make type, make the ink sticky, and we can multiply these ideas by the million through the printing press. Another very powerful idea! Tom Paine's "Common Sense" was a 40 page pamphlet published anonymously at the author's expense and freely open to being copied. By all accounts, more than 500,000 copies were printed from January to June 1776 for a total population in the colonies of 1.5 million. His words put a shape to the conflict with the British, galvanized enough uniformity of opinion to greet the Declaration of Independence with acclaim and carry through the grand experiment of American democracy.

To get the same coverage for "Common Sense" today would require a printing of perhaps 100 million copies. Our population has outrun our most important medium for transmitting important and complex ideas!

The computer and the Internet require manufacturing technologies and infrastructures far beyond those needed for paper, pens, ink, and the press. We would hope that they can give us back enough more than paper and printing to be worth all the effort.

The dream of personal computing in the 1960s was the dream of making a computer authoring medium for all; especially authoring of the unique "computer stuff", not to just imitate and automate what we can do with paper. The Internet part of this dream was to simultaneously be the press, the post, and the libraries for this new media.

This dream is happening, but slowly, because most computer users are "driving faster and faster into the future, but steering only by looking in the rearview mirror", to use an on

the mark phrase of McLuhan. Most authoring done on personal computers today is just automated paper document creation or automated letters for an automated post office. Worse, the advent of WWW browsers for the Internet disastrously turned users into simple consumers, because the browsers do not permit any kind of balanced authoring for Internet content. That this was allowed to happen is almost beyond belief and has been a terrible setback.

Squeak's ancestry goes back to the ARPA research community who created the Internet, and the Xerox Palo Alto Research Center which created many of our pervasive technologies, such as the personal computer, the windows and mouse user interface, desktop publishing, the Ethernet, and the laser printer. The aim was to make a technology that could be authored by all (including children) in all the dimensions in which computers extend, and to be able to communicate these creations with all.

Squeak is a project by some of the original pioneers of personal computing and networking, joined by enthusiastic more recent colleagues, to get wide spectrum authoring for all back into the mainstream of computing. We hope you enjoy it!