

THE
GREATEST INVENTIONS
OF THE
PAST 2,000 YEARS

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Printing

It seems to me, as it will no doubt to many others, that the printing press has changed the world more than any other invention in the past two millennia. But why has such a simple technology had such a huge influence? And why, after five hundred years, has no one invented a superior replacement?

I suspect it is because text is special. It has a unique relationship to the design of the human mind and has played a central role in developing our minds and cultures. It is the third wave of the biggest innovation- the one that started with the coevolution of language, thought, and speech.

Speech allows us to share and compare internal models of the external world, an ability that gave the human species a huge selective advantage. But acoustic vibrations are ephemeral, fading in moments into questions about who said what, when,

Writing, the second wave, was like a blast of supercooled air that froze words in midflight and smacked them onto a stone tablet or a scroll, where they could be examined by anyone, anywhere, anytime. Writing made possible law, contracts, history, narratives, poetry-to say nothing of sacred texts, with their overwhelming influence.

Printing, the third wave, transformed writing into the first mass medium, and the world has never been the same since. In the half-century that followed Gutenberg's 1455 Bible, over a thousand publishers printed over a million books. Suddenly it was

worthwhile, and soon essential, even for ordinary people to learn to read. Nowadays people whose brains have trouble with this trick are at a severe disadvantage, while some with unusual verbal facility can make a living just by arranging words on paper.

Is text merely a temporary expedient, necessitated by our previous inability to record and transmit speech and images? We will soon see. In just a few years, sensors, storage, and bandwidth will be so inexpensive that many people will be unconstrained by technical limitations. This affords a fine opportunity to make bold predictions that can be completely and embarrassingly wrong—as wrong as the predictions that e-mail would never catch on. In that spirit, I predict that voice and video attachments to e-mail—namely, v-mail and vid-mail—will be the next big thing, and that they will create all manner of consternation. At first they will be hailed as more personal and more natural media, thanks to the increased content carried by intonation and exclamations. But soon, I predict, the usual human strivings will give rise to problems.

Many people who previously were forgiven for “liking to hear themselves talk” will be revealed as actually needing to have others hear them talk. Some, especially bosses, will send long soliloquies to hundreds of other people, in the expectation that they will be listened to in full. The wonderful veil of privacy in which a reader considers a text will be rent. We won’t be able to get away with jumping around and skipping whole paragraphs in v-mail and vid-mail, as we can in e-mail. Time and attention will be revealed as the valuable resources they are. Seeing our words in print gives us the satisfying illusion that we are communicating with millions, but most of us (except those bosses) will soon realize that hardly anyone is interested in listening to our pronouncements. Some people will post electronic notices equivalent to the one a friend has on his answering machine: “Leave a message, but please KEEP IT BRIEF.”

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To cope with the social dilemmas spawned by this technology, we will turn, of course, to still more technology. V-mail will be transformed automatically into text, so that we will have a choice of media. Which will we choose? It will depend. For emotional endearments and many narratives, v-mail and vid-mail will be preferred. For simple facts and subtle ideas, however, I think we will choose the glorious invention that created a new kind of privacy-text. That is, until our brains are changed by the selective forces unleashed by the new media.

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