

BOOKS

Life Is About More Than 'Being Digital'

But author brings 'bits' to a level all readers can understand

By **Simson L. Garfinkel**

READING "Being Digital" is like spending a week with Nicholas Negroponte, the high-profile director of the MIT Media Laboratory.

For nearly 30 years, Mr. Negroponte has wowed generals and the heads of world industry with his vision of the future — a future in which computers are ubiquitous, intelligent, and faithful personalized servants.

Now, in this collection of essays based on Negroponte's column in WIRE Magazine, the master of technological speculation shares some of his magic and insight with the rest of us. It's a seductive, captivating vision that makes for fascinating reading by all — no computer experience required.

Negroponte's thesis is simple, but powerful. Before the computer, many people believed our economy and society were based on the movement of atoms. That's all changing. The post-information age, Negroponte writes, is about the movement of bits.

A bit is the smallest, most fundamental unit of information. Think of it as a 1 or 0, yes or no, wrong or right. Put two of them together, and you've got four possibilities: 00, 01, 10 and 11. These bits could represent the numbers 0, 1, 2 and 3, or they could be the directions north, south, east, and west. It doesn't matter: Bits are bits.

Bits can be stored on a computer, sent over a telephone, or even transmitted through the air. Bits can represent books, music, human speech, movies, or practically anything else that matters. Bits are in everybody's future; they are the future, Negroponte writes.

Bits can be sent at high speed and stored, then played back in "real time." In the future, we might download the music for a movie in just a few seconds to a hand-held player, then take the music out to the beach. It will be cheaper than renting a videotape, and we won't have to take the tape back to the store the next day.

Bits can also be transmitted slowly and cheaply during the night. The following morning, each of us could wake up to find our own personalized newspaper, freshly printed on reusable plastic or displayed on a screen that's built into our kitchen table.

The most powerful bits are the ones that contain information about others. "These bits may be the decoding algorithm that lets you see some strange or encrypted signal when combined with the bar code from a box of corn flakes. The bits may be from one of a dozen sound tracks that enable you to watch a foreign movie in your own language. The bits may be the control data for a knob that allows you to change X-



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rated to R-rated to PG-rated material (or the reverse). Today's TV set lets you control brightness, volume, and channel. Tomorrow's will allow you to vary sex, violence, and political leaning," Negroponte writes.

Unfortunately, there's a bit missing from "Being Digital": an appreciation of that which separates us from the machines that process our digital information. Life isn't simply about data and efficiency, although one might think otherwise after reading "Being Digital."

For example, Negroponte decries the late 20th-century game of telephone tag. "Ironically, this is often done for exchanges, which themselves require no synchrony whatsoever, and could just as well be handled by non-real-time message passing," he says.

Negroponte's solution is answering machines that always answer your telephone, whether you are home or not. Your caller would then have the option of leaving you voice mail or causing

your telephone to ring.

This ignores the fact that some people actually like speaking with each other, rather than leaving prerecorded messages on tapes or memory chips.

Even scarier is Negroponte's failure to consider the potential for negative social impact of the new digital technology. "By the time you have my address, my marital status, my age, my income, my car brand, my purchases, my drinking habits, and my taxes, you have me — a demographic unit of one," he writes.

Some people might be frightened to have such detailed information about themselves stored on a computer. For Negroponte, it is liberating: It lets the computer give him highly detailed, personalized information.

Indeed, the MIT Media Lab director says that he is an optimist, and in his book he never considers that information might be misused.

"Being Digital" devotes exactly one half of one sentence to the question of electronic privacy; the other half of the sentence is devoted to "intellectual-property abuse" — the danger that big companies might have their digitized information stolen.

This sort of big-money bias underlies many of the essays in "Being Digital." Big companies are good, regulation is bad, and despite the evidence to the contrary, big companies won't use their power to snuff out the small ones that are frequently the source of innovation.

Negroponte fails to cite counterexamples, but instead asserts that corporations, like information, must be free.

These attitudes aren't terribly surprising, considering that the Media Lab is the child of corporate moneybanks as much as databanks. Negroponte should have provided his readers with a full disclosure, or at least a disclaimer.

Despite these failings, "Being Digital" is the finest, most understandable explanation of the digital revolution to date. Even better, Negroponte does it without jargon or plugging products.

"Being Digital" is an evangelical and visionary work, written by one of this planet's masters of media.

■ *Simson L. Garfinkel is a freelance writer who specializes in science and technology.*

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