Surfing For Information

"I know I asked for ice, but this is ridiculous." Legend has it that John Astor uttered this quip while sitting in the bar of the Titanic. That kind of over-supply is nothing new to those of us hunched in front of computer screens. What threatens to sink us, however, is information. The currency of business in an information age, information floods in through phone lines and mail slots, collecting into pools of unopened envelopes, unread copies, stacks of videos, and gigabytes of unexamined data.

Our new computer tools were supposed to help us manage the flood; instead, they raised the tide higher. The headaches of junk mail fibercrud pale beside the anxieties triggered by vivid multimedia cybercrud, served up on optical disks and communication links. "Information overload" has become a fixture on the business landscape. My bookshelf is stacked with several books offering overload cures, but I can't find the time to skim, much less read, them.

Still, I am an optimist. If information is a wave about to engulf us, the solution is to surf. It's no good trying to manage 21st-century information overload with 19th-century intellectual skills. More important than the ability to recall specific information, the skill to prize in the in-

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formation age is the knack of making connections between seemingly unrelated information.

Information surfers will be generalists, people who can tease knowledge and understanding out of large information flows. They will be pattern finders, applying new intellectual skills and working with radically more powerful information tools. Specialists won't be totally obsolete, but the nature of their work will change radically.

As exotic as information surfing sounds, it is not without precedent. Our world has faced information overload on

other occasions, and each time the invention of new information tools gave rise to new intellectual skills, in turn. The emergence of a print culture soon after 1500 is but the most famous example in an intellectual history spanning several millennia. In the mid-1400s, memory was prized as the scholar's most important intellectual tool, and literacy was but an exotic and secondary skill. But within a century of Gutenberg's invention of movable type, literacy was synonymous with scholarship, and the formal arts of memory began a long slide into obscurity. This represented nothing less than a shift from the use of the brain as storage to processor of print-based information.

The interaction of burgeoning information, new tools, and intellectual skills has also created new business niches. The invention of double-entry bookkeeping by a Franciscan monk was the technological edge that allowed 15th-century Florentine merchant families to build their financial empires. The 21st-century equivalent of double-entry bookkeeping could be chaos theory—a new branch of mathematics that allows meaningful patterns to be discerned in seemingly incomprehensible, hopelessly complex, chaotic data.

The intersection of tool and skill can also change the very fabric of society. Capitalistic excesses by a papal representative led Martin Luther to tack his complaints to a church door in 1517. The printing press made it possible to spread his message across Europe, transforming Luther's argument with the local bishopric into the Protestant Reformation. VCRs are a tool of revolution in Poland today, and the weapons used to engineer the Shah's fall included audio cassettes smuggled into Iran. We can only

guess when the computer itself will become a medium of radical social change.

The experience of earlier revolutions should remind us that the information surfers' world will not emerge overnight. I am sure that more than a few medieval scribes developed a literacy itch long before the books existed to satisfy it. Similarly, many knowledge workers today exhibit information-surfing instincts, but have nothing to surf with. One sign of this instinct is the apparent rise in the number of alliterates—individuals who can read, but choose not to.

Educators are troubled by this rise, but I wonder whether the alliteracy trend merely reflects a rational choice among the broad media offerings available. We lament the apparent passivity of our "television society," yet the same couch potatoes who watch shows like "Dallas" also purchase VCRs, Nintendo games, and even PCs. TV watchers are passive only because the medium allows for no other response, and the idle channel-changing we all engage in could be the sign of slumbering information-surfing instincts.

It is possible to find a few would-be information surfers waiting impatiently for the wave to roll in. Users of on-line information services are likely candidates. So are hypermedia fans and CD-ROM purchasers. The problem is that information services remain slow and primitive, hypermedia is just getting started, and CD-ROM remains a maddeningly awkward technology.

Still, information-surfing instincts can have practical value even before an appropriate infrastructure arrives. Just as Exxon's sluggish bureaucracy was outrun by a creeping oil slick, many corporations are learning that traditional management structures simply cannot cope with events in an information overloaded, interrupt-driven world. Economist Peter Drucker suggests that the result may be a new form of organization, information-based and organized around small high-performance teams of knowledge professionals. Information-surfing organizations are more likely to resemble symphony orchestras than they are General Motors.

The earliest business opportunities to emerge may be those that serve the information surfers themselves. Dow-Quest from Dow-Jones may be the first example. Built around two connection machines and a nationwide telecommunications network, DowQuest is capable of "information broadcasting"—piping high volumes of information into a user's site in real time. It is an information fire hose in a world of on-line drinking straws. The only hitch is on the receiving end: The user has to figure out how to handle the flow.

This will take some time to work out, but it's easy to imagine a world in which the incoming datastream is monitored by corporate "infobots" that analyze content, make connections, and distribute information and secondary judgments to human information surfers.

Information surfing may become a reality first in the financial world. Indeed, portions of the global financial marketplace already are inhabited by information surfers, trading electronically across multiple time zones. The bulk of our money supply is represented not by cash in vaults, but by electrons tunneling down wires and bouncing off satellites. Several futures-trading exchanges have announced plans to eliminate face-to-face trading in the "futures pits" in favor of computerized transactions. Instead of shouting at each other, traders will sit at terminals. Once traders begin to rely on computers to execute trades, they inevitably will explore what other roles, such as researcher and spotter, the computer can play.

Each successive information innovation has yielded a fresh source of information anxiety. No matter how quickly information surfing becomes a reality, we are certain to remain one step behind our burgeoning information flows. But this may be the least of our worries. The ultimate information anxiety will stem from the discovery that our new tools have not only created more information than ever, but have made it autonomous as well. Imagine a world where our information systems are so busy conversing with each other that the information surfers are unable to get a word in edgewise! The havoc wreaked by computerized trading programs during the 1987 stock market crash may give us a hint of what such a future might be like. It's enough to make even John Astor think twice before asking for another drink. ■