Information Overload

The amount of **information** available to people is growing rapidly, and the rate of scientific publications is growing exponentially. This means that people have to deal with more and more **information** in their everyday life. It is therefore not surprising that many people have experienced what is commonly referred to as **information overload**, with the associated sensation of being swamped. **Information overload** occurs because the degree to which we can effectively process **information** is limited by the finite capacity of human cognition.

Information overload can be defined as "the state of an individual or system in which excessive communication inputs cannot be processed and utilized, leading to breakdown." In the fields of psychology and humancomputer interaction, where most empirical research into **information overload** has been conducted, the concept has traditionally been dealt with as **information** presented at a rate too fast for a person to process. In the context of computer-mediated communication research, **information overload** has been interpreted in the light of two additional complex and interrelated concepts. The first is the delivery of too many communications, which results in individuals receiving more communications than they can easily respond to. This type of **information overload** is referred to as conversational **overload**. The second is **information** entropy, which is the state of incoming messages not being sufficiently organized by topic or content to be easily recognized as significant or as part of a conversation's history.

EARLY RESEARCH ON INFORMATION OVERLOAD

One of the first social scientists to notice the negative effects of **information overload** was the sociologist Georg Simmel (1858–1918), who hypothesized that the **overload** of sensations in the modern urban world caused city dwellers to become jaded and interfered with their ability to react to new situations. The social psychologist Stanley Milgram (1933–1984) later used the concept of **information overload** to explain bystander behavior. In one paper Milgram described how a New York City woman was stabbed to death in public over a 30-minute period while at least thirtyeight people watched from the safety of their apartments but failed to contact the police. Milgram hypothesized that the bystanders' callous behavior was caused by the strategies they had adopted in daily life to cope with **information overload**, an idea that has since been supported to varying degrees by empirical research.

Psychologists have recognized for many years that humans have a limited capacity to store current **information** in memory. Particularly influential in this regard was psychologist George Miller's idea that we can process seven chunks of **information** (plus or minus two), and psychologist Donald Broadbent's filter model of attention (which viewed attention as a limited capacity channel that determined the serial processing of the perceptual system).

Early on, technologists also recognized the need to address people's limited ability to cope with the vast amounts of **information** produced in the modern world. As early as 1945, the engineer Vannevar Bush wrote a landmark paper on the need to build tools to cope with **information overload**; that paper foresaw graphical interfaces on computers and the creation of the World Wide Web. However, while technological advances have helped individuals process more **information** and made it possible (through e-mail, for example) to increase

the size of their personal social networks, it is clear that **information**-processing limits still affect social structures and the nature of community.

INFORMATION OVERLOAD AND ADVANCES IN HUMAN CIVILIZATION

Researchers have linked **information overload** to human evolution, settlement size, and patterns of interaction on the Internet. The link between **information overload** and human evolution is referred to as the social brain hypothesis; it holds that the evolutionary pressure to evolve large brains came from primates' intensely social lifestyle. So important was the careful management of the relationships that held together our ancestors' social groups that evolutionary advantage was given to individuals who were better able to process the **information** required to keep track of the ever-changing nature of social relationships.

The maximum density and geographic spread of a culture's settlements is also linked to the management of **information overload**. For communities to function, individuals have to interact with one another. But interaction involves the strain of dealing with other people, the effort of coping with the products of group activity, such as noise and trash, and the work necessary to make communication possible. As a result, major changes in human settlement densities, such as those associated with the move from agrarianism to urbanism, have only been sustained historically when new assemblages of technological aids to interaction and communication have been developed, such as writing, clay tablets, the telegraph, and so forth.

Information overload also affects the dynamics of social interactions in cyberspace. For example, users of Usenet newsgroups (a large-scale online bulletin board system) are more likely to respond to shorter messages than to long ones when discourse is **overloaded**, and they are more likely to respond with simpler messages. They are also likely to end active participation as the **overloading** of discourse increases. So even as **information overload** is being addressed by new technologies, its impact persists, even into the digital realm.

—*Mieke H. Bomann*

—*Quentin Jones*

Community Newspapers Still Appeal to Readers

SEATTLE (ANS)—Americans complain of free-time starvation and **information overload**, but they're not too busy to keep up with neighborhood news.

The total circulation of community newspapers, defined as general-interest papers published less than four times a week, grew 6 percent between 1996 and 1999 to 48.7 million copies, according to The Editor & Publisher Co., a New York-based firm that tracks the newspaper industry. In that period, 94 community papers were started up.

In contrast, E & P reports, circulation of daily newspapers fell by about 800,000 copies, from 56.9 million in 1996 to 56.2 million in 1999. The number of daily newspapers also dropped, from 1,520 dailies published three years ago to 1,489 in 1998.

Readers pick up community papers for lots of different reasons, analysts say, but the common interest is a desire to connect to their neighborhoods. "These papers may not have the breaking news on Kosovo, but they do have refrigerator news—articles you can cut out and put on your refrigerator that will affect your family. That's still important to a lot of people," says Ken Allen, executive vice president of the National Newspaper Association, which represents some 4,000 general and special-interest newspapers.

Interest in schools and neighborhood planning in particular has soared, said Mary Glick, director of the Center for Community Journalism at the State University of New York at Oswego. "These are the meat and potato

issues people are interested in," and what community newspapers do best, she says.

Daily newspapers, whose circulation has flattened out in recent years, understand the trend toward local news, too. Sections and local editions devoted to city neighborhoods and suburban communities are now standard fare in metropolitan papers. In the past, Glick says, the dailies never considered their smaller cousins much of a threat. Today, she says, they're in "head-to-head" competition that will likely increase.

According to Veronis Suhler & Associates, a New York investment bank that concentrates on the media and communications industry, advertising spending on weekly newspapers is anticipated to grow 8.6 percent to $7.5 billion in 2002. The fact that many of the papers are distributed free of charge has contributed to their popularity with advertisers, says Kevin Lavalla, managing director of the bank.

"There had been for years a perception that freecirculation publications were not effective advertising vehicles, but that perception has changed," Lavalla explains. Free papers can offer advertisers nearly 100 percent penetration of a given market and if they're part of a newspaper group, can offer coverage of a large area.

Although weekly papers can't report breaking news with any timeliness, they shine when it comes to local legwork and story development, says Russ Zabel, an editor in Seattle. "Dailies are spread so thinly. We know the neighborhood lots better and have more contacts. We find out things that the hard-pressed daily reporters can't." […]

George Harmon, associate professor of journalism at the Medill School of Journalism at Northwestern University in Evanston, Ill., says community newspapers are doing a better job than ever. "They've always had to be accurate and balanced and fair because they walk right out of the office and bump into the people they're writing about.

"In the past couple of decades, they've benefited tremendously from advances in technology such as the Macintosh," said Harmon. "On little weeklies, the entrepreneur typically had to worry primarily about production and ad sales rather than editing. Now the legs of the stool are much more even." Nevertheless, scrappy, independent editors like Herriman are getting harder to find. Competition for advertising among weeklies, shoppers and coupon mailers is stiff. Just as their daily counterparts have seen rapid consolidation in chains and media conglomerates, community papers are proving tempting to group owners who can combine production costs to maximize profit.

[…]

Good financial health is essential to a community paper, but so are good reporters. Too many weeklies remain "journalism waiting to happen," notes Harmon. It's not easy finding talented journalists interested in a career at a weekly where the pay is often poor, the responsibilities broad and the excitement limited, insiders say. But it's not impossible.

Mieke H. Bomann

"Busy Readers Find Time for Community Newspapers." American News Services, Article No. 929, May 20, 1999.

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