



# Information Overload, Concept of

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## GLOSSARY

**cultural ADD** The recently observed social variant of Attention Deficit Disorder. The classic form of ADD is thought to be a biologically based condition causing a persistent pattern of difficulties resulting in inattention, hyperactivity, and impulsivity. Cultural ADD attributes the same set of behaviors to the overwhelming speed of information and our increasing culture of distraction.

**data smog** An unexpected and unwelcome new component to the age of information, data smog is an expression for the overwhelming volume of e-mail, voice mail, faxes, junk mail, up-to-the-minute news flashes, and mesmerizing electronic images that we now come into contact with regularly.

**meta-analysis** The study of studies; a method of combining pools of statistics from a wide range of studies and making a comprehensive analysis based on the whole.

**spam** Unsolicited e-mail; the term is derived from a comedy skit by the absurdist troupe Monty Python in which unsuspecting diners are informed that the restaurant menu includes “egg and bacon, egg sausage and bacon, egg and Spam, egg bacon and Spam, egg bacon sausage and Spam, Spam bacon sausage and Spam, Spam egg Spam Spam bacon and Spam” [and so on]. When, in the early 1990s, it was noticed that certain individuals got a kick out of interrupting text-based Net dialogues with useless and irrelevant drivel, the term “spam” seemed apt.

**stat wars** Michael Kinsley’s term for the exhaustive, constant policy arguments fueled by seemingly unlimited amounts of data. Factionalism gets a big boost from the volleys of data, while dialogue and consensus—the marrow of democracy—run thinner and thinner every year.

Just as fat has replaced starvation as the number one dietary concern of the United States, information overload has replaced information scarcity as an important new emotional, social, and political problem.

We have quite suddenly mutated into a radically different culture, a civilization that trades in and survives on stylized communication. And as we enjoy the many fruits of this burgeoning information civilization, we also have to learn to compensate for the new and permanent side effects of what sociologists, in an academic understatement, call a “message dense” society.

*If scientific discovery has not been an unalloyed blessing, if it has conferred on mankind the power not only to create but also to annihilate, it has at the same time provided humanity with a supreme challenge and a supreme testing.*

—John F. Kennedy, 1963

## I. THE SURPRISING TRADEOFFS OF INFORMATION PROLIFERATION

Something marvelous has been happening to humankind—not just in the past three or four years with computers and the Internet, but more broadly in the past several decades. Information is moving faster and becoming more plentiful, and people everywhere are benefiting from this change.

But there is a surprising postscript to this story. When it comes to information, it turns out that one can have too much of a good thing. At a certain level of input, the law of diminishing returns takes effect; the glut of information no longer adds to our quality of life, but instead begins to cultivate stress, confusion, and even ignorance. Information overload threatens our ability to educate ourselves and leaves us more vulnerable as consumers and less cohesive as a society. For most of us, it actually diminishes our control over our own lives, while those already in power find their positions considerably strengthened.

This is not the first time we have been confronted by the unpleasant side effects of abundance. Those of us who live in the United States, the most sophisticated and successful nation on Earth, also routinely find ourselves burdened by problems of excess. Now, for all the

wonders of the information revolution, a menacing cloud of "data smog" has drifted in. In this article, we will explore its unwholesome properties and suggest some healthful remedies to recollect the critical distinction between information and understanding and to demonstrate why you do not have to feel personally overloaded with information to be a victim of the information glut.

Information used to be as rare and precious as gold. It is estimated that one weekday edition of today's *New York Times* contains more information than the average person in 17th-century England was likely to come across in an entire lifetime. Now it is so inexpensive and plentiful that most of it ends up being remaindered and shredded, as if it is worthless garbage. The first great paradox of information glut is that we are becoming so information-rich that we take much of what we have for granted.

Still, the concept of *too much information* seems odd and vaguely inhuman. This is because, in evolutionary-historical terms, this weed in our information landscape has just sprouted—it is only about 50 years old. Until about 50 years ago, more information was almost always a good thing. For nearly 100,000 years leading up to this century, information technology has been an unambiguous virtue as a means of sustaining and developing culture. Information and communications have made us steadily healthier, wealthier, more tolerant. Because of information, we understand more about how to overcome the basic challenges of life. Food is more abundant. Our physical structures are sturdier, more reliable. Our societies are more stable, as we have learned how to make political systems function. Our citizens are freer, thanks to a wide dissemination of information that has empowered the individual. Dangerous superstitions and false notions have been washed away: Communicating quickly with people helps to overcome our fear of them and diminishes the likelihood of conflict.

Then, around the time of the first atomic bomb, something strange happened. We began to produce information much faster than we could process it. This had never happened before. For 100,000 years the three fundamental stages of the communications process—production, distribution, and processing—had been more or less in synch with one another. By and large, over our long history, people have been able to examine and consider information about as quickly as it could be created and circulated. This equipoise lasted through an astonishing range of communications media—the drum, smoke signal, cave painting, horse, town crier, carrier pigeon, newspaper, photograph, telegraph, telephone, radio, and film.

But in the mid-20th century this graceful synchrony was abruptly knocked off track with the introduction of computers, microwave transmissions, television, and satellites. These hyperproduction and hyperdistribution mechanisms surged ahead of human processing ability. In this way, in a very short span of natural history, we have vaulted from a state of information scarcity to one of information surplus—from drought to flood in the geological blink of an eye. In 1850, 4% of U.S. workers handled information for a living; now *most* do, and information processing (as opposed to material goods) now accounts for more than half of the U.S. gross national product. Data have become more plentiful, more speedy (computer processing speed has doubled every two years for the last 30 years), and more dense (from 1965 to 1995, the average network television advertisement decreased from 53.1 seconds to 25.4 seconds and the average television news soundbite decreased from 42.3 seconds to 8.3 seconds; meanwhile, over the same period, the number of ads per network television minute increased from 1.1 to 2.4).

Information has also become a lot cheaper—to produce, to manipulate, to disseminate. All of this has made us information-rich, empowering Americans with the blessings of applied knowledge. It has also, though, unleashed the potential of information gluttony. Just as fat has replaced starvation as this nation's number one dietary concern, information overload has replaced information scarcity as an important new emotional, social, and political problem. With virtually no effort and for relatively little cost, we can capture as much information as we want.

With information production not only increasing, but accelerating, there is no sign that processing will ever catch up. We have quite suddenly mutated into a radically different culture, a civilization that trades in and survives on stylized communication. We no longer hunt or gather; few of us farm or assemble. Instead, we negotiate, we network, we interface. And as we enjoy the many fruits of this burgeoning information civilization, we also have to learn to compensate for the new and permanent side effects of what sociologists, in an academic understatement, call a message-dense society.

Audio buffs have long been familiar with the phrase "signal-to-noise ratio," engineering parlance for measuring the quality of a sound system by comparing the amount of desired audio signal to the amount of unwanted noise leaking through. In the information age, signal-to-noise has also become a useful way to think about social health and stability. How much of the information in our midst is useful, and how much of it gets in the way? What is our signal-to-noise ratio? We