

# Information Overload

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## INTRODUCTION

Even though the complex phenomenon of information overload (IO) often remains unrecognized (Badke, 2010) and is qualified to be a modern-day myth (Tidline, 1999), it is a major impediment to efficiently using information in the business world, academia and the professions both in the case of print and online (digital) documents, IO is one of the perhaps best known ‘information pathologies’ (Bawden & Robinson, 2009), thus it signalizes the existence of a dark side of information. Nonetheless, the technological and social approaches to mitigating its syndromes, i.e. the ‘bright side’ of information is also worth of attention (Koltay, 2017). This encyclopedia entry will examine both sides by describing the history, the diversity of concepts, types and sources of the multifaceted phenomenon of information overload and the ways of coping with it.

## BACKGROUND: THE CONCEPT OF INFORMATION OVERLOAD

Information overload can be defined as a state in which not all inputs can be processed and utilized for varied reasons (Nelson, 1994). In other words, it occurs when potentially useful information received by someone becomes a hindrance (Bawden & Robinson, 2009), be it persons or organizations (Jackson & Farzaneh, 2012). Appearing in academia, the business world and everyday life, it affects both individuals and systems (Nelson, 1994). Information overload situations appear in activities, related to information retrieval and the organization of information, in decision and communication processes (Eppler & Mengis, 2004).

The main factors of IO are the following ones:

- The volume of information supply (the quantity of information);
- Information processing capacity;
- Information-processing requirements;
- Time requirements for processing information (available versus invested time);
- Subjective (personal) factors.

Some definitions also mention dysfunctional consequences of being overloaded that may be qualified as symptoms (effects), which are mainly related to the loss of control over information, frequently leading to suboptimal decisions, and higher time requirements for information handling, causing time delays (Eppler & Mengis, 2004). It is also associated with the feeling of being overwhelmed. In some cases, these effects can lead to a loss of job satisfaction and even damages to personal relationships or someone’s own health (Bawden & Robinson, 2009). Results of an empirical examination show that the perception of IO exist among varied age groups (Benselin & Ragsdell, 2016).

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However, though paradoxically, information overload can provide satisfaction, because mastering it gives to many people the feeling that they are in control of something (David Johnson, 2014).

## THE HISTORY OF INFORMATION OVERLOAD

While complaints about an overabundance of books date back at least as far as the sixteenth century, Ecclesiastes, one of books of the Tanakh (Hebrew Bible) originally written c. 450-180 BCE, might be the first writing to comment on the “proliferation of information as a detriment to effectiveness and efficiency” (Bawden & Robinson, 2009, p. 183).

George Simmel, a turn-of-the-century sociologist has been identified as the first commentator, who recognized the concept in its modern sense (Wurman, 2001). About the first writers mentioning information overload, there are contradictory opinions, whether it was Richard L. Meier, an American urban scholar in 1962, or the social scientist Bertram M. Gross (also from the United States) in 1964. In any case, the concept itself became a generally accepted problem in the late 1950s and early 1960s (Bawden & Robinson, 2009). In the 1970s and 1980s the focus was on IO related to the quantity of journal articles and consumer choice. Later attention shifted to email overload. Attention to IO has increased with the appearance of the Internet and World Wide Web, then with wiki systems, weblogs and mobile communications (Benselin & Ragsdell, 2016).

## THE TYPES AND NATURE OF INFORMATION OVERLOAD

We can experience information overload

- in academia, impacting researchers, faculty and students;
- in business environments, impacting decision makers and other employees, as well as customers;
- in everyday life, impacting the general public (Butcher, 1998).

We can differentiate between objective and subjective IO, where the former is based on the characteristics of information, such as its amount and complexity that influence processing time. Subjective IO refers to feelings that individuals have, when confronted with information (Ji, Ha, & Sypher, 2014).

It is also necessary to tell apart the macro level of IO from its micro level. The macro level is of quantitative nature, i.e. is related to the limits of physical storage and processing capacities that present an obstacle to information access. IO at the micro level mainly depends not on the quantity of information, but is determined by its characteristics is a qualitative phenomenon. This kind of overload is essentially a failure to filter information, (Davis, 2011). Due to its qualitative nature, it also can be termed *cognitive*, *sensory*, *communication*, or *knowledge* overload (Eppler & Mengis, 2004). Some of these will appear in this encyclopedia entry in order to illustrate the diverse approaches to IO. Diversity and novelty also characterizes *data overload* that appeared in answer to the growing interest in different kinds of data and their importance, reflecting the excess of data and the similarity between data and information.

If speaking about information overload (including data overload) as an issue for professionals, we can see that it concerns varied fields. A review of literature, using the Web of Science database for the period from 1990 to 2017 found 2,469 publications on IO. The leading subject area of these publications was computer science with 56%, while the literature in engineering produced 20.5%. Other areas

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