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**INFORMATION OVERLOAD AND ITS IMPACT ON ORGANIZATIONS**

**FLORUTA Constantin-Cristian**

Ministry of National Defence Romania

**Abstract:**

*Information overload is considered as phenomena to which we are exposed to too much information that is of no use. Such exposure to too much information significantly undermines the process of undertaking effective decision making in an organization. Additionally, it subsequently undermines the quality of decision making in any organization, including military organization. This paper critically evaluates the concept of information overload in an organization. Moreover, the analysis will involve the various causes of information overload, the symptoms of information overload, the impacts of information overload and the various strategies that can be deployed in addressing the issues associated with information overload. Additionally, from the analysis recommendations to reduce information overload include having a high level of management control over decision making and employing technology based decision making such as through the use of data mining.*

*Key words: information, overload, implications, decision making*

## **1. Introduction**

Information overload is a subject of immense debate especially nowadays. Can too much information overload a system and cause adverse judgmental decision making? What defence mechanisms do organization have to implement against this abundant flow of information? How much information is too much and how much is just enough? Can an organization function “off the grid” in this interconnected, interrelated and fast running world and still be competitive? The scholars and practitioners are working on finding the right balance or right practical approaches to maintain organization supremacies in this new context. What is commonly agreed is that an organization requires to capture, organize, and disseminate the critical information in a timely and succinct manner to those consumers who needs it, in order to efficiently solve the encounter problems, or to solve the tasks ahead.

Therefore the information is vital for all organizations functionality. However, the nowadays proliferation in the quantity of electronically available information is overwhelming people and network systems, and is making it very difficult for users to find necessary information in the time they have available. This can reduce the overall performance, can hinder learning and innovation, and affect decision making and cost organisations large amounts of resources.

Consequently, in the attempt to be competitive and profitable all organizations needs to be conscious about the possibility of incapacitating the internal decision making processes, or even worse, the potential of endangering its overall roles and functions by information overload, and to methodically cultivate the required organizational “know how” to properly mitigate the associated risks.



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## **2. Understanding information overload**

Information overload (also known as “infobesity”, “infoxication”, information anxiety, and information explosion) is the difficulty in understanding an issue and effectively making decisions when one has too much information about that issue, and is generally associated with the excessive quantity of daily information.

Individuals typically describe information overload as the situation of receiving too much information. Organizational scholars define overload as a state induced when the amount of input to a system exceeds its processing capacity or when information processing capabilities and the information loads encountered are mismatched.

What is not often highlighted is that most of the time perception plays a key role in overload as in this definition: overload is the "perceived inability to maintain a one to one relationship between input and output within a realizable future with an existing repertoire of practices and desires". In order to maintain the overall functionality of an organization, managers need to be proactive, by institutionalizing proper counteract mechanism in order to neutralize or minimize the information overload impact.

Managers need to monitor the organization overall functionality, and to be able to apply corrective measures before a system (individual or organization) is no longer able to efficiently process information and becomes overloaded. Most likely before any system will be overloaded with information some “*symptoms*” will be manifested. Identifying what might be the “*symptoms*” and implementation of a properly calibrated warning system is of paramount importance and it’s a managerial responsibility at all levels.

The human brain is designed to process and retain information in very particular ways, and that doesn’t necessarily change or speed-up in the face of changing technology. Many of us are finding that despite how much knowledge and information we have access to in our modern times, it’s actually harder than ever before to retain it. That makes us slower when it comes to decision making, and it can be a big detriment in the long run.

It costs nothing in most cases to access a range of information, and also for people to forward that information on to others. Therefore, in this new technology focus era, where access to information has exponentially increased for the entire human race, it is harder and harder to make a difference between what information is really needed for achieving a desired end state, or for daily task accomplishment, and what is the “noise” that is overcharging the brain, consuming time and derailing you.

## **3. Information overload causes**

There are, of course, nearly as many causes of information overload as there are bits of information available to us. However, the main cause of information overload is the fact that huge volumes of new information being constantly created, on a daily bases, by literary everyone. As long everyone has access to technology and social media, everyone can produce information. That is further creating the nowadays information chaos, generated the existence of various sources of information, validated or not, as well as by the exponential increase in channels to receive information. Information overload may also be caused as a result of the pressure to create and compete in information provision – leading to a quantity over quality



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effect in news industry which will lead to high volumes of conflicting, contradictory and plain old inaccurate information. All that will generate a high volume of conflicting and contradicting information, which is generating information overload.

Also, the maximizing volume of data can lead to difficulty in handling this data. The increase in the variety of information from different sources can acquire information to be insignificant and irrelevant. Overload can also develop from a lack of time to digest and comprehend the available information. In a business setup, people with access to computers internet and email and other sources can attribute some other causes of information overload such as ease of creation in computers, duplication, and transmission of data across the Internet which increases the available channels of incoming information.

All this together with the lack of a method for comparing and processing different kinds of information contribute to the problem of information overload. Information overload seems definitely connected with the amount, nature of skills and knowledge which are possessed by processing quality and speed and therefore they impact information overload. Apart from the work factors, some studies show that the individual and his or her qualification, attitude, and experience are another significant factor. While earlier studies simply state that a person’s capability to process data is limited, more recent studies include particular limiting factors such as lack of clear structure in groups of information and poor clues as to the relationships between those groups.

The cause of information overload is endless due to the need for information in the decision making business, but generally speaking the causes can be grouped in the following categories, as per figure below.

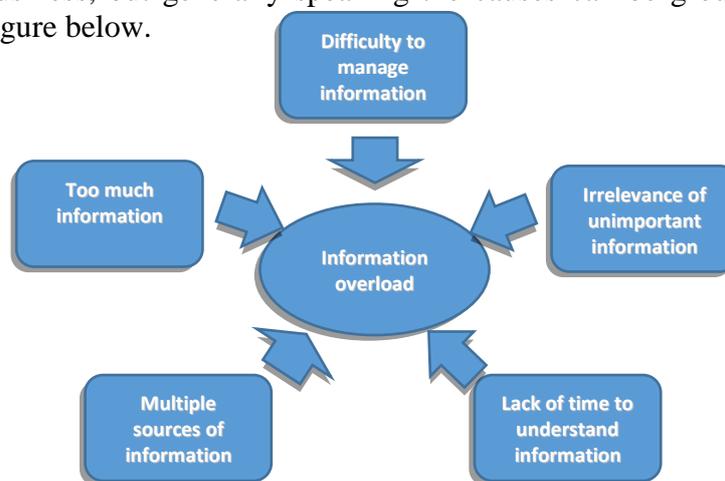


Figure 1. Factors causing information overload

#### **4. Disadvantages of information overload**

Information overload can lead to several disadvantages which are causing the human brain to become less productive, easily get tired and distracted. Furthermore, information overload can lead to a feeling of powerlessness and a sense of being overwhelmed by the assigned tasks (either number of complexity) or by the need of absorbing more information, in the attempt to understand the problem and identify the most efficient solution.

The need for more information will introduce individuals or organization in a vicious data mining process feed by a lot of insecurities: Does the information we are seeking relay exists?



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Where to look for information? Do we already have the information that we are looking for? Do I have access to the repository where the information is stored or to the source of information?

However, this depends on whether the problem lies with the volume, or in the way information is handled. If this isn't tackled, then you will start to get frustrated, or so blasé that you will not perform well. This affects the way you react to your colleagues and starts a vicious circle of unproductivity.

The problem might not be the information, but the information flow within organization. Is the information directed to the proper person? Is there a structure that is dealing with information flow? Do we have the technology required to assist in finding the right information at the right time?

If it's an organizational-wide problem, the easiest solution would appear to be to employ more staff to cope with it, to create the structure that will deal with information management, and to employ the required technology to support the process.

## **5. Information overload symptoms**

Although being informed is never bad, the overstimulation of the brain can have the reverse effects. In other words, instead of becoming smarter, our brain's ability to learn and engage in problem-solving thinking will decrease. Information overload is a real threat nowadays. Therefore, all managers need to monitor their staff and processes in the attempt to timely identify the symptoms of information overload. Information overload symptoms can be as follows:

- *Reduce of decision making capacity.* Decision makers, as all human beings, have fairly limited cognitive processing capacity. Consequently, when information overload occurs, it is likely that a reduction in decision quality will occur;
- *Diminish productivity by impacting the ability to process information.* Too much information will impede the understanding of the problem as well as the capacity to tackle it. Along with weakened decision making, information overload can also lead employees to feel unnecessarily overwhelmed and stressed out. Employees may not even have too much on their plate, but information overload can create the perception they do. This can lead to a lack of engagement, a loss of productivity and a high employee turnover rate when in reality it's entirely avoidable. Too much information, particularly when it's unnecessary or irrelevant, can also confuse employees on their job role and make them unsure of where to focus their attention. Employees who report information overload tend to become frustrated and give up more easily than their non-overloaded counterparts, they need more time to make decisions, and they frequently make mistakes, often because of confusion. They can also have a hard time identifying pertinent goals and how to achieve those, and they tend to waste a lot of time in the workplace.
- *Development of strong compulsion to periodically check information sources (feeling overwhelmed by the need of absorbing more information).* When an organization is dealing with a large volume of information on a daily basis, especially in this rapidly changing environment, the managers will face the tendency to base their decision on the last update available, and that will lead them into a vicious circle of periodically searching for new information, of disregarding the already made decisions, and



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jumping into new conclusions. This working practice might be effective for a short term, but in the long run will prove to be contra productive due to the lack of foundation in the decision making process, due to the fact that will generate frustrations within the team.

## **6. How to mitigate information overload**

There have been many solutions proposed for how to mitigate information overload, but it is difficult to measure the effect. Based on the definition of information overload, simplistically have been identified two general approaches to deal with it:

- either to *reduce the amount of incoming information* (be cautious of how you are exposed to information, and limit information overload by unsubscribing from newsletters and advertisements); and
- *or enhance the ability to process information* – related to information processing where how a person records, moulds, and stores information is crucial.

Nevertheless, by developing the two general direction, have been identified some concise sets of measures that managers have at their disposal in the attempt to minimize the impact of information overload on the organizations, such as:

- *Manage your time* – One of the major problem that we face is the lack of time to cover all the required tasks. Unfortunately we cannot extend the time, but what is within our power is to choose what to do with the time available. You can decide which things are worth investing and which are not. You can choose to either be focused on things that matter or allow yourself to be swept away in a sea of distraction. Therefore “time prioritization” will help to avoid the information overload. Managers needs to be able to established what is “Important and Urgent”, what is “Important but Not Urgent”, what is “Not Important but Urgent”, and what is “Not Important and Not Urgent”. Splitting task based on the aforementioned categories will avoid the overload, by identifying what needs to be done now, and what can be postponed for later.
- *Organize the information in accordance to the organization’s needs and purpose* – Information is commonly organized within an Enterprise’s repositories with classification systems designed within a conceptual framework. These frameworks allow information to be consistently classified to make it easier for users to know where to look for various types of documents and records. This framework is translated into a hierarchy of descriptive categories that form the taxonomic schema used to control the classification process.
- *Use only evaluated and validated sources in order to avoid errors in decisions* – Once you have a clear idea of your information objectives, you can make a deliberate decision about what sources you will use. Which reports, newspapers, magazines, journals, news services and television programmes do you need to look at regularly? Once you know your priorities you can often rationalise the sources you need, rather than being swamped by a mountain of paper you can never get through. Can you use media summaries or industry updates? Getting the information you need more efficiently is well worth the cost of a subscription. Aim to read things your competitors aren’t likely to see – get a broad perspective. Source evaluation is the



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- process of critically evaluating information in relation to a given purpose in order to determine if it is appropriate for the intended use. Common source evaluation criteria include: purpose and intended audience, authority and credibility, accuracy and reliability, currency and timeliness, and or bias.
- *Filter the information that you seek* – You have to be ruthless in getting rid of surplus information. Get yourself off mailing lists, use assistants to filter your messages, and use e-mail filtering software. From there, filtering is in its essence a process of scanning everything to judge according to your information objectives whether it's worth reading or dealing with in more detail. Those things that pass are read or put aside for your reading time, the rest go in the bin. If you're still getting too much to read, you need to go back to your objectives and refine them until you only get all the most important information that you have time for. Using metrics like trustworthiness, conciseness, accuracy, etc. to gauge the reliability of an information source. If you're offered data from multiple sources, you can use metrics and various standards to filter out the sources you don't want. This is frightening at first because there's an unspoken fear lurking behind the scenes. “What if I miss something important?” Implementing this strategy takes a little bit of faith. If you miss something and you're alerted to that fact, refine your filtering criteria so you catch the information that matters, then continue. Read and listen only to the information you consider useful for today or if it enriches your knowledge. Otherwise, ignore irrelevant information like news, gossips, talk-shows, etc.
  - *Automatization of data mining* – in order to be effective an organization needs to employ the proper technology to support the achievement of their goals. Data mining programs, such as dTSearch, are not expensive, but are enhancing users capacity to search thousands of terabytes of structured or unstructured data in matters of minutes, and are offering highlighted hints as results, which will help user to save time.
  - *Train employees in using the existing technology* – proper usage of technology needs to be trained, even if the employee have been use that piece of equipment or similar one. Each organization has its own particularities, and therefore hands on training will expedite the integration program of the newly employed personnel. Therefore, session for induction training for the new comer, periodical training for all personnel with the aim to understand how to properly use the available technologies in their advantage is for everyone benefits. (i.e. train the email usage: what and when to use urgencies, where the “all users” type of information to be store, use notification for information related to the task ahead, etc)
  - *Learning how to search for information* – learning how to build and save queries, how to use Boolean logic in searching are time saving, and increase the filtering out of unwanted information.
  - *Create an information management department* – Information management is a broad term that incorporates policies and procedures for centrally managing and sharing information among different individuals, organizations and/or information systems throughout the information life cycle. Information management is generally an enterprise information system concept, where an organization produces, owns and manages a suite of information. The information can be in the form of physical data (such as papers, documents and books), or digital data assets. Information



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management department deals with the level and control of an organization's governance over its information assets. Information management is typically achieved through purpose-built information management systems and by supporting business processes and guidelines. Moreover, information management department should also focus on how that information is shared and delivered to various recipients, including individuals and different computing devices such as an organization's website, computers, servers, applications and/or mobile devices. The information management department is the heart and blood vessel of any organization. The information management departments is the organizational security in the fight against information overload.

- *Push and pull systems* – Simply put, a push strategy is to push information at a customer, while a pull strategy pulls a customer towards the information. To apply the aforementioned strategies within organizations means to have a central repository where only the information required for daily task completion to be displayed, as well as to have the possibility to send targeted information to different groups or persons that are involved in a task.
- *Delegate* – delegating tasks to the right/relevant teammate or co-worker, rather than taking it on ourselves it is important. Delegation will allow the manager to save time on performing minor tasks, as well as will bust the confidence of the personnel that the task is delegated to.
- *Prioritize* – Information isn't created equal. At any given point a manager may find that one task is more important than another. Sometimes that requires dropping what the manager is currently working on. Other times it might required to say “No” to someone asking for help with something less important. Prioritization never ends.
- *Reject* – Some requests, tasks and people should be ignored. If they're not relevant to the manager work, or not helping someone on your team (or in your network), it's a good idea to quickly delegate “to-dos” to someone else. If it's not a fit and a manager know he/she shouldn't be doing that or that it's someone else's job, finding a way to reject the request outright is a wise idea.
- *Develop proper working practices* – Use company wise page for general announcements, don't pass everything through email. Develop organizational norms for electronic communication either explicit or implicit. The IT department could come up with guidelines specifying the preferred communication channels for different types of information. For example, e-mail could be reduced significantly if group newsletters and announcements were posted on a company intranet or wiki, which pulls in people seeking the information instead of pushing it at them. A rule of thumb: If the information in an e-mail you're about to send, even if potentially important in the future, is not urgent, post rather than push. The IT folks could also replace those irksome confirmation-of-receipt requests from senders with auto-responses from recipients. Such responses would alert senders to your personal schedule for answering e-mail and urge them to phone if something needs attention sooner than you are likely to respond. That could reduce confusion stemming from differences in people's unspoken expectations. If I think of an e-mail as something to be answered within the business day and you think of it as something to be answered upon receipt, ill will and bungled decisions may ensue. If you escalate the contacts—



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instant message, voice mail, a huffy visit to my cubicle—you’ll end up increasing the total volume of information related to a single request.

## **7. Conclusions**

This paper cannot endeavour to be a complete assessment of information overload, related types, contributing factors, or potential solutions. It is certainly not the first to examine issues of information (or even information overload) within an organizational context, nor to re-examine rationality in this area. However, this work exists in the recognition that new perspectives on existing things can be illuminating, and in the hope that perhaps it may serve in such a way.

Additionally, from the analysis recommendations to reduce information overload include having a high level of management control over decision making and employing technology based decision making such as through the use of data mining. Moreover, the establishment of an information management department and implementation of a sound information management policy in all organization, will definitely increase the organizational resilience to information overload.

The best ways of avoiding overload, individually and organ organizationally, appear to lie in a variety of coping strategies, such as filtering, withdrawing, queuing, prioritizing, delegating, training and embracing support technology and know how. Better design of information systems, effective personal information management, and the promotion of digital and media literacies also have a part to play. Overload may perhaps best be overcome by seeking a mindful balance in consuming information and in finding understanding.

It is important to manage with care and effectiveness information of the organization by taking into account the aspects of perception of the value of information. It is only this way organizations will have competing advantages in a knowledge economy.

Discovering the effects of information search, selection, processing, and evaluation in the decision-making process and the occurring biases and limitations is key for our understanding of the decision-making process itself.

In conclusion, this review has some limitations to address. First, I include business-related research only and exclude other research fields (i.e., pedagogy, social networking etc). Second, I searched for the keywords “information overload”, “information management”, “information overload effects”, and “cognitive overload”. There might be other relevant studies on information overload or related topics which do not use these keywords in their titles or abstracts.

In this paper, I have provided some perspective on information overload cause, effects, symptoms that needs to be monitored, and potential mitigation measures at organizational level. The study does not exclude or intend to contradict other views or opinions in this matter, but merely is trying to have a practical approach by rising awareness and providing a toolkit for all managers in fighting “infoxication”.

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