Information anxiety
Fact, fiction or fallacy?

It's not just information overload.
Anxiety is a result of not being able to find
information, existing or otherwise!

By John Girard and Michael Allison

Have you ever wondered what information-related issue creates the most anxiety amongst middle managers? The fact that information overload would be near the top of the list might surprise you.

In advance of 2008, Basex, a knowledge economy research and advisory firm, named information overload as the expected 'problem-of-the-year'. They estimated that over the course of 2008, an estimated $650bn would be lost in the United States due to reduced productivity and throttled innovation. Additionally, their research concluded that as much as eight hours of worker productivity per week would be lost because of this phenomenon.

It is clear that Basex's 'problem-of-the-year' declaration makes information overload a timely and relevant issue, but this should not come as a revelation since many of you have been bombarded with e-mails and articles about it. In fact, a Google search of *information overload* results in a list containing more than 2,000,000 entries. When this search is limited to Google Scholar, the list still contains 224,000 entries.

Despite information overload's characterisation as the usual suspect, recent research suggests overload is just the tip of the iceberg and other information-related issues create more stress for middle managers.

What's worse than info overload?

So what could possibly be worse than information overload? Clearly, many managers seem to be swamped by the quantity of information in their organisations. A KPMG knowledge management study reported that two-thirds of the sample complained of information overload. A second study determined that 38 per cent of the surveyed managers waste a substantial amount of time locating information and that 43 per cent of the managers delayed decisions because of too much information.

A Gartner Research report suggested that a major driver of this problem is distraction, since many managers "dwell on information that is entertaining but not informative, or easily available but not of high quality". A myriad of other studies report similar disturbing findings which appear to be information related.

Over the last four years a series of studies were conducted with a view to determining what information-related challenges concern middle managers. The results are very telling and should serve as a wake-up call for executives and information architects. As it turns out, many middle managers report *access to information* as the number one culprit.

In this case, access to information is not the field of study pertaining to free and open access to information, nor is it about legislation to ensure the public has access to government information. Both of these concepts are very important and require further attention; however, neither is the 'one thing' that will make a big difference in the short term.

We refer to access to information as a component of *information anxiety* described by Richard Wurman two decades ago.

Of course, Wurman was not the first to consider this idea. The broad issue of information or knowledge anxiety and its effects on individuals and organisations has been studied since at least 1605. Possibly the first mention of this challenge was in Sir Francis Bacon's book entitled *The Advancement of Learning* where he wrote "That in spacious knowledge there is much contristation, and that he that increaseth knowledge increaseth anxiety." It is easy to ask yourself when reading this passage just how much has changed over the last quincentenary. Surely, we are not experiencing the same challenges of the Colonial Era when it comes to information and its effects.

Black hole between info and knowledge

It was nearly 400 years until the term information anxiety reemerged in the popular press as the title of Richard Wurman's best-selling book of 1989. Wurman defined *information anxiety* as 'the black hole between data and knowledge', a definition that attracted the attention of many organisational leaders as many were struggling with challenges of organisational memory loss.

Indeed, this phrase inspired the recent academic volume entitled *Building Organizational Knowledge: Will We Know What We Knew* – a rather sad testament to the fact that many organisations are so overwhelmed with their information holdings that they often forget what they once knew. This may clarify, to a degree, how NASA led the way to the moon but has now admitted that they have *forgotten* how to get there. Ironically, shortly after NASA's admission, India launched a space mission to the moon. Some consider this a brutal reminder that it is often easier to learn something than it is to remember it.

According to Wurman, there are five components of information anxiety: not understanding information; feeling overwhelmed by the amount of information to be understood; not knowing if certain information exists; not knowing where to find information; and knowing exactly where to find the information, but not having the key to access it. Other recent knowledge management studies suggest this wider classification is more relevant to the challenges of the 21st century. For example, the authors of Gartner Research's Information Overload Survey concluded there are four information issues affecting competition: siloed information; too much information; unindexed information; and ineffective searching procedures.

As interesting, intuitive and insightful as Wurman's hypothetical notion seemed, there was no empirical evidence to support his hypothesis. As a result, the concept was considered by some to be pure fiction, perhaps building upon Bacon's unsubstantiated claim of four centuries earlier, and relegated to the abyss of business hype.

However, it appears the wise words of Richard Wurman seem to resonate at the natural harmonic frequency of so many organisations across all the countries of the world. Those who are familiar with the engineering concept of a natural harmonic frequency will remember this is the single, repeated frequency that will wreck havoc upon a mechanical structure and was ultimately responsible for the Tacoma Narrows Bridge collapse.

How can info be so destructive?

But how can information be so destructive? To understand this oxymoron, it is necessary to have a better understanding of this complex term. While most researchers use the term 'information', others have examined the issue from additional perspectives; specifically, they have studied information anxiety, a subcategory of information overload, using references to such things as 'written text', 'ideas', 'knowledge', 'data', or even 'things'.

Because there are so many of these terms, categorisation and definition becomes somewhat difficult. Should information anxiety be measured by tangible evidence such as the number of books, or is it more effective to examine the issue through abstract measurement of concepts such as ideas or facts?

Some researchers have concluded that quantity, while an important consideration, is by no means the primary variable when measuring information anxiety. For example, Schick, Gordon and Haka suggested constraining the time to do a particular task to levels below what is required is a factor, while Wurman introduced the concept of information anxiety derived from too little information rather than too much information.

This is important because it differs from conventional wisdom and opens up an additional avenue for analysis, the doubt regarding whether a particular piece of information actually exists.

Additionally, the focus on overload oftentimes leads managers to mistakenly conclude that technology can solve their problems by reducing the overall amount of information, which may only exacerbate a too-little anxiety problem. It is essential to understand the problem is far more complicated and goes beyond the simple issue of quantity.

Given the surprising lack of empirical research, we set off to set the record straight. In the spirit of the television series *Myth Busters*, we wanted to answer the question, once and for all, does Wurman's idea of information anxiety really exist?

To answer this nagging question, our initial project considered the construct of information anxiety and its impact on Canadian government middle managers. The most interesting finding of this project was that the middle managers reported accessing information (a subcomponent of information anxiety) as a far more significant problem than information overload (also a subcomponent of information anxiety).

Information anxiety fact or myth?

One of the conclusions from the study was the correlation between the technical and managerial aspects of the problem,

with specific emphasis on the role of management in resolving the issue. These findings suggest information anxiety is not fiction, but rather a fact of 21st century organisations.

Of course, the narrow scope of the first project demanded further study, especially given the homogeneity of the population under examination (Canadian Public Service middle managers). To continue the exploration, it was necessary to consider different populations.

The second study was set in the United States rather than Canada and it measured the dependent variable of information anxiety in regards to quality improvement high performance team participation. The second study utilised a sample consisting of United States Air Force military personnel located at Luke Air Force Base in Phoenix, Arizona. Finally, the study introduced several additional variables, relationship to productivity, hierarchical position and education level, in the hopes of uncovering ways to mitigate the effects of information anxiety.

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Although there were some similarities in the findings of the two studies, the second project challenged the original findings and suggested that information anxiety might be synonymous with information overload. Though somewhat disappointing, the second study added to the body of knowledge, despite the discovery that our original conclusion about information anxiety might be a fallacy.

After a two-year hiatus, the research recommenced with a project considering mid-level officers of the United States Air Force located in Maxwell Air Force Base in Alabama. The results of this study proved to be very enlightening when compared to these previous studies.

With regards to the changes in the Air Force population, many of the conclusions drawn raise additional questions. Specifically, although the level of information anxiety dropped a statistically significant amount during a two-year span, this may be attributable to many different reasons. The locations of the analysis, Luke AFB versus Maxwell AFB, may have been a significant consideration. In addition, the fact that the Maxwell sample was composed entirely of USAF officers who were much older and possessed a much higher degree of post-secondary education than the primarily enlisted sample at Luke may have caused the drop.

Additionally, the Maxwell sample was comprised of personnel competitively selected to attend an advanced professional military school. The same factors that led to their selection may, in fact, have mitigating effects on the levels of information anxiety they recognise and display.

Similarly, when the results of this study are compared to the first study in order to measure the changes in society as a whole, further questions arise. Why were the levels relatively similar between the first study and third study? One explanation may again rest in the realm of education level. As stated above, the education level of the sample in third study was very high, with a full 100 per cent possessing at least a bachelor's degree. Likewise, the original study also had a high level of post-secondary education, with 75.2 per cent possessing at least a bachelor's degree. This is in contrast to the second study sample which only resulted in 10.6 per cent of respondents possessing a bachelor's degree or higher. This is significant and may point to an area requiring further analysis and study.

So what does all of this mean?
Info anxiety is a fact of life.

Are the two terms – overload and information anxiety – synonymous or are they very different? Well, here is what we know. Information anxiety is an intuitive fact of life in the modern workplace, but to what magnitude? The combined findings of these three studies indicate that information anxiety has remained relatively unchanged across society. There is clear evidence to suggest that certain variables may affect the level of information anxiety, but to what extent is difficult to predict at this point. Understanding these variables could pay huge dividends in the development of approaches to deal with work-related concepts such as stress and job performance.

Addressing overload alone not sound strategy.

Perhaps one of the most important findings is that focusing on information overload alone is not a sound strategy. The focus on overload alone seems to imply a technological solution to reduce the quantity of information, perhaps by eliminating duplicate data. This may ease the size of the problem and may well be a part of the ultimate solution; however, the challenge is more complex and not merely an issue of quantity. Simply reducing the quantity of information will do nothing to eliminate manager's concerns of not knowing where to find information.

All we know for sure: Bacon was right.

At this point, it is not possible to pronounce whether information anxiety is a fact, fiction or fallacy. Clearly, there is some empirical evidence that the construct developed by Wurman has merit; however, the conflicting results of these studies mean that more research is required. Ironically, after more than 400 years of learning we may not be any further forward than when Bacon wrote *That in spacious knowledge there is much contristation, and that he that increaseth knowledge increaseth anxiety.* ∎

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