Information, communications and overload

It is sometimes interesting to reflect on the fading anxieties that were once associated with new technologies. In the early days of the widespread adoption of the Internet and World Wide Web in the corporate world, there was a tremendous concern about the psychological effects of information overload and their impact on organisational efficiency. The vast amounts of information flooding into individual's inboxes presented a fundamental issue that threatened to impair decision making and cause unnecessary psychological distress. The 1990s Reuter's report *Dying for Information* (1996) for example highlighted a situation in which information was general under-utilised, and where the filtering of information created delays in decision making impairing organisational effectiveness.

The tide of information has not been stemmed in the intervening time; indeed as information and communications platforms have proliferated the underlying problem is if anything worse. Yet these days information overload is usually only discussed in specific decision making contexts. Technology created the problem, but a combination of technology and changing assumptions about our individual responsibilities to information have allowed us to adapt. We have perhaps becomes accustomed to the different challenges that abundant information presents, and more selective about the information to which we attend.

In many ways the anxiety about information overload was never a reflection of the volume of information confronted in day-to-day life and always a question of the organisation and processing of information. There is more information in the average public library than an individual can reasonably accommodate in their life, and yet we do not on the whole feel overwhelmed by that volume, because libraries are organised to enable us to focus on only those parts of the collection that are likely to be relevant to our needs. But the analogy of the library also highlights a key dichotomy in the ways in which we use, approach, and understand information systems in the contemporary age. Unlike tweets, emails, instant messages, calendar invites, app notifications, SMS messages and social media posts, the books on the library shelf do not demand our attention the moment we walk through the door; they sit there quietly waiting for us to approach them. Overload is perhaps as much about the clamour of digital technologies as it is about volume per se. Individuals have perhaps become more accustomed to tuning-out the noise of digital culture. If we encounter a confusing an poorly organised or fussy and badgering information service these days, we tend not to blame technology per se but its implementation.

Writing in 2000 about the potential impact of information overload on business organizations, Edmunds and Morris suggest two emerging approaches to managing information overload: push technology and intelligent agents. The latter has become central to debates around Artificial Intelligence and Machine Learning in information work. Push and pull by contrast are now rather antiquated terms; what was novel about push technology has become so common that it barely warrants special attention. Yet the distinction between push and pull offer a useful analogy which helps unpack the ways in which technology can work with or against our normal social processes. In broad terms push technologies were those that pushing content at users through notifications, feeds or other interactive features such as personalised content. YouTube for example pushes videos at its users by varying that content shown on its homepage on the basis of the user's prior habits. This contrast with the pull of static websites, which wait unobtrusively until a user has a reasonably well defined information need that draws them back to the site.

The idea of push and pull feels a little antiquated, but the distinction it makes between two fundamental ways in which we relate to technology is still very relevant. We tend to think about Information and Communications as well-integrated aspects of contemporary applications, but there is sometimes a conflict between the ways in which we engage with technology as an information tool and the ways that we engage with technology as a communications tool.

Information tools are those technologies that enable us to store, process, and retrieve information whether that is structured information sets as in a database or semi-structured information sets as in a website, collection or articles, or blog. Communications tools are those which enable us to send messages from one place to another, as in email, SMS, video conferencing or app notifications. Before we networked computers together they were overwhelmingly information technologies, used to store, process and retrieve information. As soon as they were networked they became information *and* communications technologies, allowing us to not only store, process and retrieve information but also to send information between two points.

These two functions are often so well integrated that we don't pause to consider the difference; the World Wide Web for example combined and informational function of storing and retrieving web pages and processing requests for those pages with a communicational function of sending copies of web pages to client machines. The applications that we use also seamlessly combine elements of both. Twitter is on the one hand a communication tool allowing tweets to be pushed to followers, and an information tool retaining tweets for subsequent interrogation. Email is predominantly a communications tool but many users of email retain the content as an ad hoc information system. And the convergence has occurred in the opposite direction with the humble communications device of the telephone becoming increasingly an informational device.

So well integrated are the informational and communicational functions of contemporary technology that we rarely pause to think about the different ways in which we interact with them, and the consequences of that interaction. We tend to think of communicational and informational functions as reflecting the same kinds of needs and behaviours. But there is an important disfference: the informational and communications modes of technology imply a different kind or relationship with the user.

Information technologies generally sit there waiting for the user to request something. A library book will wait until the reader pulls it down. A database will wait until the user interrogates it. A website will wait until the user visits it. In each case the service pulls the user to its content because the user has some prior reasonably well defined information need that they hope the service will resolve. Communications technologies will interrupt the user with information that they may need to know. The SMS message or app notification will pop up on their device; the email will arrive in their inbox. In each case the services push information at users on the assumption that the information is needed, often prior to the user being aware of that need, and often when that need is marginal. We expect different things of these two kinds of services: we expect informational resources to be comprehensive and easy to navigate; we expect communicational services to be relevant and timely. When you mix the two these expectations can conflict.

This has come to mind more recently because of the growing adoption of cloud storage solutions for workplace file storage, sharing, and collaboration. These applications – like Box or Google Drive – are often bundled with cloud email services and while ostensible replacing shared drives and to some

extent collaborative systems. They can be wonderfully powerful and comprehensive solutions to certain kinds of problems in storing and sharing information. Nevertheless if badly implemented, they can become confusing and difficult to use. The problem with them is that they often combine two different fundamental functions: a place to store documents, and a place to share and collaborate on documents. The reason that this is a problem is that these two functions each generate noise with respect to the other, making each perhaps less efficient. Putting your collaborative documents in the same service as your stored documents is like combining your filing cabinet and your in-tray – unless well-managed, ongoing correspondence is lost amongst the archive and the archive smothered by da-to-day correspondence.

The same can happen with cloud storage solutions – outdated versions of documents produced as a part of collaboration can make it difficult to find the definitive document of the online document storage system. Cloud storage solutions can become cluttered with information for two reasons: firstly because the volume of information that is produced day-to-day will always outweigh the volume of information that needs to be retained, and secondly because the collaborative functions in which they excel means that responsibility for maintaining the documents is distributed across the organisation. It is of course relatively easy to avoid this by implementing good management processes and practices, but it is far easier and practicable in most instances to thoroughly separate the archive from the day-to-day collaborative space.

September's *Business Information Review:* The 2018 Annual Survey:

This issue sees the publication of 28th BIR Annual Survey. First published in 1990 the BIR Annual Survey is not the longest running continuous research into the changing information and knowledge management profession in the commercial sector. Over that time the survey has changed in scope, focus and methodology from what was an original overview of resources to a more comprehensive focus on emerging trends, technologies and skills in the sector. For the past three years the research has been undertaken by Denise Carter of DCision Consulting.

The 2018 BIR Annual Survey highlights how rapidly the sector is changing, with Artificial Intelligence and Learning Technologies emerging as a key concern amongst senior information and knowledge professionals. As well as the impact of emerging technology, the survey reveals the degree to which the profession has been impacted by the global economy and in particular the spectre of Brexit. Amongst this year's survey highlights:

- While the world economy is experiencing fragile growth the uncertainty around Brexit means a more cautious and pessimistic UK outlook.

- Information teams see their core deliverables as content management, training on information-related databases, and research and analysis. Their role in research analysis is developing further to include providing implications and deductions.

- AI is rapidly impacting the information profession: AI projects described by information teams range from pilot to fully-implemented. Information professionals foresee that new technical and AI solutions will mainly require the enhancement of current skills, rather than the acquisition of new ones.

• Data quality, and trust and confidence in data, are concerns for information professionals; survey participants are clear that the ability to ensure data is of highest quality and integrity is a critical skill for information professionals.

What is clear from the survey is the degree to which the profession, and by extension the economic sectors to which the profession contributes, are both impacted by the flux of a changing economic, political and social outlook, and an emerging technological transition to new ways of working.

September's *Business Information Review:* other papers:

The second paper in September's issues is Peter Benfell's *Mulled Red Lines – one record keeper's thoughts on technological change.* Benfell asks whether we fully appreciate quite how significantly things have shifted over the past decade or two, and explores the ways in which technology has changed records management practices and processes in the workplace. In the paper he writes:

> As a profession we are being challenged by developments in technology which progress normally faster than we are able to keep up. Some of the developments we have to work with do not conform to our past practice and it is up to us to step up and meet these challenges by being certain in our understanding of what records management entails and finding innovative ways to exploit the technologies we are presented with to meet them.

Our third paper explores the value of professional membership to career development, focussing on the role and benefits of the Special Libraries Association (SLA). This is one of a series of articles that will explore the benefits that engagement with professional bodies and associations can bring to early and mid-career professionals. In the paper Claire Laybats talks to Simon Burton, co-founder of SB Resourcing and president elect of SLA Europe, and to Amy O'Donohoe, Customer Care (Collection) Co-Ordinator at Royal Holloway, University of London, about the benefits of professional membership and engagement with professional bodies and associations.

Our fourth paper this issues was contributed by Justene Philip and Manjula S. Salimath from the College of Business at the University of North Texas. Entitled *A Value Proposition for Cyberspace Management in Organizations* explores the risks of cyberattacks, and propose a value creation agenda for organizations that operate in cyberspace. They suggest that a positive contribution towards organisational value arises when organizations effectively manage the risks associated with cyberattacks and continue to attain benefits from cyberspace.

Finally this issue sees the publication of Martin White's *perspectives* column, focussing on research that might bring new perspectives to understanding information in the workplace. Martin White has been in the information business of over 40 years and is Managing Director of Intranet Focus Ltd, which he founded in 1999. In *Perspectives* he surveys research published in other fields that is relevant to information and management.

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References

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