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# Successfully managing corporate information environments

Matt Moore\*

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*This article discusses the proliferation of corporate electronic information from the uptake of email, personal productivity software and shared folders. It recognises that such a proliferation creates a subtle drag on organisational effectiveness. It suggests that the judicious use of technology and a tighter managerial focus on critical information might improve this situation.*

## INTRODUCTION

I have worked with corporate information for over a decade and yet there is one thing that never ceases to amaze me. As an employee or a consultant, I will first enter the building that houses the company, government department or charity. The building is generally shiny and impressive, it may even be a tower that dominates the skyline. I am greeted by one or more neatly attired receptionists. I may be offered water or coffee while I wait for my security pass. Then I move into the offices. There may be some papers on desks but I have yet to be confronted with the stench of road kill or piles of rubbish in the aisles. Finally, I sit at a desk, turn on a computer and enter the information systems.

At this point, it is as though I have entered a virtual recreation of a stoned teenager's bedroom:

- there is an intranet but most of the information on it is both unimportant and out-of-date;
- there are shared folders with labels such as "Dave's Folder" and "Project JKTZZ1438920\_DONOTUSE". Where there are folders with comprehensible names (eg "Finance") then they are empty;
- when I look in "Dave's Folder", I find 20 versions of the same document. Admittedly one is labelled "Project23\_Final". But should I use that one or "Project23\_Final\_Final" or "Project23\_Submitted" or one of the others?;
- the company has purchased an expensive document management system, but it could only afford a few licenses and these are jealously guarded by those that have them. Someone can email a document that I need – if he or she can find it and he or she is not on holiday;
- and now that we have mentioned email, apparently some key documents that I need have been emailed around. If only I can find out who did the emailing and which of those people have not deleted them;
- someone mentioned corporate accounts for Yammer and Socialcast that apparently also contain important information – although no one knows how I can sign up for those.

We do not work in the shiny worlds pictured in technology brochures and on corporate websites where an improbably diverse mix of genders, races and ages in smart business suits sit around a laptop pointing at the screen and smiling. Instead our realities are far messier and more chaotic.

Some places are messier than others. Organisations can vary greatly in the quality of their information management. However, confusing and ineffective information practices are rampant. In a 2010 survey carried out by the Association for Information and Image Management (AIIM), 60% of new Enterprise Content Management (ECM) users cite "content chaos" as the trigger for adopting ECM.<sup>1</sup>

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All websites and webpages referred to in this article were viewed 22 July 2011.

<sup>1</sup> Association for Information and Image Management, *State of the ECM Industry 2010* (2010), <http://www.aiim.org/Research/Industry-Watch/ECM-State-of-Industry-2010>.

How did we get here? Put simply, our working environments have been changing dramatically over the last 20 years and managers have rarely paid attention to the implications of these changes. These technological changes have been compounded by organisational developments.

### **CHANGE 1: YOU'VE GOT (LOTS OF) MAIL**

Email began to take hold in the 1990s. Email systems were often set up within organisations purely for internal messaging but then they became extra-organisational communications tools as well. Now it is rare to find an Australian business without an email address.

In 2010, approximately 100 trillion emails were sent worldwide (with 90% of those being spam) and 550 million on-premises corporate email boxes were in action.<sup>2</sup>

Let's be clear, email is an effective and robust communication tool. It does not require very much in the way of technical knowledge to write and send an email or to read one (although not all emails are easy to read or to do something about when read). Email addresses are ubiquitous. Even my technophobic mother has an email address. Unlike the telephone, email is asynchronous. This is convenient if participants are working in different shifts or time zones. Unlike regular mail, email is quick (although this speed means that sometimes the sender may regret a particular email soon after it sent). Additionally, email only requires its user to be connected to a network while sending and receiving, not while reading and writing which makes it very attractive for a mobile workforce. And mobility is increasing with the proliferation of smart devices (first the Blackberry and now the iPhone and the multitude of Android handsets). This technologically advanced hardware may paradoxically drive us to use primitive forms of off-line collaboration.

However, while email is easy to use, it is also a nightmare for organisations to manage. As anyone who has ever tried to reconstruct a conversation from a trail of emails will know, email values convenience over context. It also values the individual owner of an email box over the collective. You can only see what either you have created or what you have been sent, not the interactions of others.<sup>3</sup>

### **CHANGE 2: YES DEAR, I'M STILL AT THE (MICROSOFT) OFFICE**

Word processors, spreadsheets and presentation software were not invented in the 1990s but that was the decade that they went mainstream. Previously the preserve of the Apple Mac ghetto, Microsoft Windows brought the graphical user interface to corporate desktops around the world. Along with Windows, Microsoft also presented users with the (un)holy trinity of Word, Excel and PowerPoint. With these "personal productivity" tools, employees could easily create large numbers of documents – and edit those of others. The resulting documents were not necessarily of a high quality (PowerPoint has been especially vilified in this regard) but the quantities were certainly there. For example, one organisation that I encountered with 200 employees had stockpiled around two million Microsoft Office files (along with sundry PDFs and PST dumps) on its servers since the mid-1990s. That sounds like a large number until you realise that it equates to approximately 15 files per person per week over 15 years. These numbers all add up.

The Microsoft Office suite was designed for individuals working alone, not as a collaborative work tool. However our work is increasingly collaborative in nature. The solution that many people have found is to pair the format control of Office with the distribution power of email. Office documents do offer some version control and tracking of changes but often documents are edited by multiple users in parallel and the resulting swarm of different document versions with their differently coloured amendments can fly around organisations at high speed.

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<sup>2</sup> Royal Pingdom, *Internet 2010 in Numbers* (2011), <http://www.royal.pingdom.com/2011/01/12/internet-2010-in-numbers>; Radicati Group, "The Radicati Group Inc Releases 'Email Statistics Report, 2010-2014'" (Press Release, 19 April 2010), <http://www.radicati.com/?p=5290>; Radicati Group, "The Radicati Group Inc Releases 'On-Premises Email and Collaboration Market 2010-2014' Study" (Press Release, 20 December 2010) <http://www.radicati.com/?p=6231>.

<sup>3</sup> Carr A, "Open Thread: The End of Email?" (2010), <http://www.fastcompany.com/1661288/the-end-of-email>; Schwartz T, "Breaking the Email Addiction" (2010) <http://blogs.hbr.org/schwartz/2010/06/breaking-the-email-addiction.html>; Association for Information and Image Management, *Email Management: The Good, the Bad and the Ugly* (2009), <http://www.aiim.org/Research/Industry-Watch/Email-Management>; Moore M, "Peak Email – A Fairy Story" (2008), <http://www.slideshare.net/engineerswithoutfears/peak-email>.

### CHANGE 3: THE FOLDER DEFAULT

Microsoft Windows also proliferated the information management model that has dominated work for the past decade: the folder. In some respects, the folder is a very powerful organisational tool. We need some way of organising the thousands of documents that we work with, just as computers have needed to place data in a particular location on magnetic disk. The folder is a convenient way of doing this and replicates an existing, familiar metaphor of physical information management (the card folder that stores sheets of paper on desks or in filing cabinets). We use folders on the local drives of our machines to create personal taxonomies and filing systems. We then use shared folders to create collective taxonomies. Folders are a very flexible and simple organisation tool but again that very flexibility and simplicity causes problems.

Some folder structures work well for individuals but not for groups. “Dave’s Folder” is not a useful term if you do not know who Dave is or what he is responsible for. There is an inherent tension here because work is carried out by named individuals with identities. However, businesses grow and gain economies of scale through the development of impersonal, collective systems. Dave may want “his” folder but the organisation may need an information structure that is not dependent on Dave. Newer systems that combine formalised, collective taxonomies with the folksonomies of individuals can start to manage these tensions but shared folders cannot.

Shared folder structures can lead to other problems:

- groups often do not have visibility or even access to each other’s folders so many documents are duplicated. This can add to version control problems. For the organisation mentioned previously with two million documents, 20-40% of those documents were duplicates (depending on whether you counted exact or close versions);
- folders are generally stored on a specific physical server in an office. If you are outside that office, then access to those folders can be painfully slow for small files (eg a simple PDF) and impossible for videos or engineering drawings. Your speed is determined by the slowest point in the network between you and the server;
- search engines can be configured to crawl folders but files stored in folders may have poor metadata attached to them. In some cases, the multiple duplicates make the stream of search results extremely confusing.

### INFORMATION CARBOLOAD

These changes tend to creep up on managers within organisations and organisations only realise that they have an information management problem when the problem is a severe one. In understanding this problem, it may be illuminating to consider a similar problem that occurs in our personal lives. We are told that we have an obesity epidemic almost as frequently as we are told that we are suffering from information overload. And yet for the majority of the population, obesity is not the result of a single, catastrophic event. Rather, it is the result of a combination of doing what comes naturally, failing to understand that our environment has changed and an unwillingness to confront bad habits. There is some evidence that human beings are “hard-wired” to stock up on high energy foods. Our ancestors lived precarious, uncertain (and highly active) lives so this was a good idea. Thanks to technological and social progress, we in the developed world have much greater access to sugary and fatty food while many of us no longer exert ourselves much physically in our work. So we put on weight until we cannot get into our clothes or our nearest and dearest start making not-so-subtle hints. Then we go to a gym. For some of us, our own will power is not enough and if we can afford to, we hire a personal trainer (or we rely on our nearest and dearest to nag us).

For organisations, a similar set of changes has happened. We no longer live in a world of information scarcity but rather information abundance. We can create and share with others in a multitude of media. However, coping with this abundance requires a level of discipline and organisation that coping with scarcity did not. We have developed unhelpful habits that we need to collectively replace. If we fail to do so then we limit our ability to work effectively. In some cases, this poor information management may end catastrophically (eg in a court case or a bankruptcy) but mostly it will just make the daily grind more difficult than it needs to be.

In my role as an information management consultant, I often feel like a personal trainer (without the tan and sportswear, mind you). The people I work with are intelligent and know what they have to do. They just need someone to help them sort out what to do first and then to encourage them to do it. Repeatedly.

## THERE IS AN APP FOR THAT

Many people are looking for the perfect technology that will solve these issues for them. One chief executive officer recently told me that he would only be interested in an information management tool that required no human involvement or intervention. In effect, he wanted a “miracle cure”. Now the weight loss market is full of miracle cures – and they are all bogus. A healthy diet and exercise are at the core of weight loss. However, there are plenty of technologies that can assist you with those goals, for example, gym equipment and a set of scales. When it comes to managing our information better, we need to thoroughly understand the strengths and limitations of the technologies we can use. However, we cannot expect them to do the work for us.

Most of the heavy lifting will have to be done by a collection of technologies known as ECM. While many of the vendors in this space claim that their tools do everything, they often have disparate (and visible) origins such as:

- records management systems that came from the need to manage paper and electronic records;
- document management systems with a focus on document version control and lifecycle management;
- web content management tools for publishing content on the internet as HTML;
- digital media management software to manage images, video and audio;
- collaboration software to enable synchronous and asynchronous teamwork around content;
- search software to find these materials.

While the first decade of the millennium saw a serious consolidation of the ECM market into five main vendors (OpenText, EMC Documentum, IBM, Oracle and Microsoft), this has not necessarily led to marketplace simplification. One Australian organisation was planning a corporate-wide ECM program. One division used an old version of a product that had been acquired by a major vendor. The vendor was invited in to pitch for the business. However, the vendor was unable to present a coherent roadmap for the numerous other products that it had also acquired and so did not get the business. In effect, the vendor was unable to answer the question “who are you?”

Recently there has been a heartening shift in public discussion from references to ECM *technologies* to ECM *strategies*. Technology is still a critical enabler but organisations have to look at a broader range of factors to be successful. One example of this shift is the ECM3 Maturity Model (available at <http://www.ecm3.org> under a Creative Commons license). ECM3 was jointly initiated by Wipro, the Real Story Group, Hartman Communicatie and Smigiel Consulting Group. It is now part of the MIKE2.0 open methodology. The ECM3 model asks organisations to rate their ECM maturity on a five-point scale (unmanaged, incipient, formative, operational and pro-active) against 13 different dimensions (see Table 1). Most of these are not IT-related.

**TABLE 1 The ECM3 Maturity Model**

MATURITY DIMENSION	EXPLANATION
<b>Human Dimensions</b>	
1. Business expertise	Employee and executive education and understanding of core ECM precepts
2. IT expertise	Ability to properly take advantage of incumbent and new systems
3. Process	Extent to which enterprise has analysed its content-oriented business processes
4. Alignment	Extent of effective Business – IT collaboration, understanding, and synchronisation

**TABLE 1** *continued*

MATURITY DIMENSION	EXPLANATION
<b>Information Dimensions</b>	
5. Content/metadata	Extent to which enterprise has analysed its content and metadata
6. Depth	Completeness of content lifecycle management
7. Governance	Extent of policies and procedures addressing information management
8. Re-use	Extent of realisation of content re-use opportunities
9. Findability	Ability to find the right content at the right time
<b>Systems Dimensions</b>	
10. Scope	Relevant range of ECM functional capabilities (DM, BPM, DAM, etc) adopted
11. Breadth	Evolution from departmental to enterprise-wide management systems, where necessary
12. Security	Extent to which actual content access reflects enterprise entitlements
13. Usability	Application fitness to purpose

Source: ECM3

I have found the ECM3 model to be a useful tool in helping organisations understand the range of issues that they need to explore to improve their information management. It is not perfect, you often need to dig deep into a particular category, and an organisation may have widely varying maturity levels in those sub-components. For example, an organisation may have a top-of the-range search engine that has been well-implemented initially but does not have an ongoing search analytics and improvement program. However, the spread of accessible frameworks such ECM3 (and the AIIM ECM roadmap) are to be encouraged.

## YOU CANNOT MANAGE EVERYTHING

Even if you use technology productively, an unfortunate fact soon becomes clear. Most organisations simply do not have the resources to manage all the information that they receive or that their staff produces. This is not the end of the world because all this information is not necessarily worth managing. The exact sequence of events whereby I invited my colleague Dave to lunch on Wednesday did not turn out to be that important. However, the budgets that I produced in the morning and the customer documentation that I wrote in the afternoon were important (to different people). One set of information needs to be kept and one does not.

The first stage here is to understand exactly what kind of information your organisation uses and to create some kind of map around it.<sup>4</sup> This may take the form of a spreadsheet or database inventory, a process map or a network diagram created using a tool such as NetDraw.<sup>5</sup> The exact form that this map takes is partly driven by its intent (is it listing assets or demonstrating the relationship between them?) but also by the culture of the organisation (engineers love diagrams while lawyers tend to prefer words). In one case, a marketing organisation developed its map as a game of snakes and ladders. The ladders were people and systems that helped you out, the snakes were the risks to be avoided.

If you talk to the IT department, it can generally tell you about systems and data but the department may not understand the actual business use and context around it. The best way to develop

<sup>4</sup> Davenport TH, *Information Ecology* (Oxford University Press, 1997); Standards Australia, *Knowledge Management*, AS 5037-2005 (2nd ed, 2005).

<sup>5</sup> Lee J, "Help! Process Maps, Social Network Maps, Concept Maps, Knowledge Maps – When to Use What", *KMWorld 2004* (28 October 2004).

these maps is with the involvement of representatives from many parts of your organisation: different functions, business units and geographies. Such maps should draw on existing descriptions of the business but often this is the first time that different groups have explicitly compared how they work and the supporting information and knowledge. It can highlight unexpected overlaps (“You use this data as well? We thought that it was just us?”) and points of divergence (“What! You develop your products using a different process – Why?”; “Well, we tried your way and it was much less effective”).

Once you have your map or inventory, you can undertake a process of identifying more and less critical information. This process is not without its difficulties. For each function, business unit or geography, the information produced and worked with is obviously the most critical. However, while the loss of some information would present an existential risk to an organisation, the loss may simply be an inconvenience. And just because information is not heavily used, that does not mean that it is not critical. For example, share price information can be sourced externally quite cheaply but many different groups (marketing, sales, production and finance) might need access to documents that describe the relationship between the organisation and its key accounts/stakeholders.

Once you have prioritised your information, you can then decide what you do with it. Does it stay floating around email inboxes as Word documents? Are multiple versions scattered across different shared drives? Or does it require more careful management?

## **CONCLUSION**

Organisations have let their information environments proliferate wildly over the last 15 years. Managers have been focused on their day-to-day pressures and largely ignored the creeping digitisation of work and the proliferation of content. This article has outlined some of the technological causes behind this and explored two elements of a possible solution – ECM strategies and information mapping with prioritisation. In their different ways, these two elements make the information challenges of an organisation more visible and tangible to senior managers. Our old technologies have conspired to hide both our information and the issues that we have in managing it. Our email boxes have been closely guarded. Our Office documents have been locked away in an opaque maze of shared folders. Our future will offer collective visibility of our critical information. Perhaps then our virtual corporate environments will match the best of physical environments in which we work.