Managing Information and Records

The definitive guide—2013 Edition

Cimtech

Chapter 3

A Guide to the Solution Options for Information and Records Management

● Information and Records Management Best Practice ● IRM Solution Options ● Enterprise Content Management from A to Z ● Designing and Implementing an IRM Solution ● Making the Business Case

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Do you want process efficiencies

?

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Chapter 3

A Guide to the Solution Options for Improved Information and Records Management

3.1 Terms

The information and records management profession uses a number of terms for specialist purposes.

Content

Content is the term used to cover the range of types of information that organisations need to manage. Text, graphics, images, audio, video, etc., are all types of content.

Content has to be organised and aggregated for ease of management. The National Archives' ERMS reference model organised content into a hierarchy of components, records and folders (Fig. 3.1). MoReq2010, addressing a wider European market, creates a slightly different hierarchy of components, records and files or aggregations.

Component

A component is a component part of a document or record. It is the lowest level in the TNA hierarchy. Usually a document comprises a single component but where we have a complex document such as a corporate publication with graphics and tables we might use document management functionality to enable component parts to be updated, versioned and linked into a single document in a streamlined way.

Document

A document is a container that comprises one or more content components and which stands alone as a unit of information. This is level two in the TNA hierarchy. The world of business and government is based around documents such as Office documents, forms and scanned images. Documents can be updated and reissued and hence may need to be subject to version control and other document management functionality. When such documents reach their final state they may be kept as records and protected by records management functionality.

Record

A record is any 'information created, received, and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business' (ISO 15489-1:2001, 3.15). In other words, what we need to keep. It may be a document or any type of data file.

EDRM systems use the term more specifically, they enable documents to be 'declared as records' which means that thereafter they are protected from change.

Folder/file/aggregation

A folder is a group of documents and/or records. This is level 3 in the TNA hierarchy. Traditionally, filing clerks and records managers used paper files as containers to hold multiple related documents together for ease of management. The electronic equivalent is called a 'folder' in the TNA reference model and a 'file' in MoReq2 although MoReq2010 prefers the wider term of aggregation, which it defines as an 'accumulation of related record entities that, when combined, may exist at a level above that of a single record'. An aggregation can be large or small but must share characteristics to be manageable as a whole.

Part/Volume

Paper folders can be divided up into parts when they get too old or too large and electronic folders can (but do not have to be) be divided up in a similar way. TNA called them 'parts'. MoReq and MoReq2 used the term 'volumes'. Volumes were not included in the first issue of MoReq2010 but there are indications that they may be reintroduced if only for backward compatibility.

Publication

A subset of documents will be published as publications. Prior to electronic publishing, manuscripts would be sent to a printer who would typeset the content and create metal plates from which the required number of paper copies would be printed. With electronic publishing the content is marked up using a markup language and rendered using a defined style sheet. Using the same marked-up con-
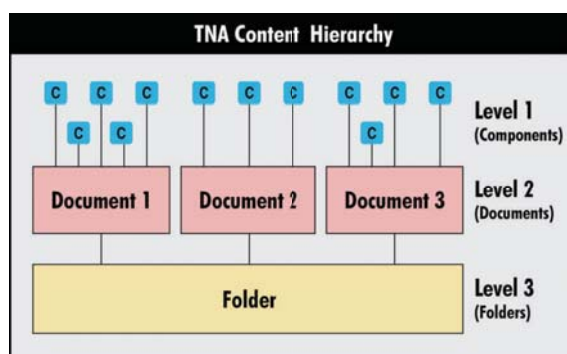

Fig.3.1
The National Archives content hierarchy

tent and different style sheets the electronic publisher can publish the content on paper and via a range of digital channels. With the Internet we are publishing an increasing percentage of our documents so more of us are making use of markup languages and style sheets to ensure we can reuse our content and publish it across a wide range of channels.

Hierarchical classification scheme
- Top level classes (Function)
- 2nd level classes (Activity)
- 3rd level classes (Transaction)

Classification

A classification scheme is a hierarchical structure (Fig. 3.2) designed for an electronic content management and records management system either to create a visible fileplan for information or to apply management and disposal rules that sit behind the visible fileplan. MoReq2010 makes a clear distinction between the classes (that apply the rules) and the aggregations (that create the visible structure). A good classification scheme organises information by functions and activities, rather than organisational structure or subject matter, in order to provide a longer lasting structure and one which maps better to retention schedules.

Metadata

Document and records management systems differ from ordinary fileshare storage primarily by holding, in a database, additional information about the documents and their components, folders/files/aggregations and classes. Metadata is the term used in the computer industry for this additional information. ISO 15489 defines metadata as 'data describing the context, content and structure of records and their management through time'. Metadata can be used to identify content, to find and retrieve it, to organise it, control access to it, assure its integrity and schedule its destruction.

3.2 A Brief History of Enterprise Content Management

3.2.1 The all-paper environment

One hundred years ago all the information which an organisation held—the corporate memory—would have been held on paper or in the brains of its employees. Data was recorded in tables in ledger books (Fig. 3.3) and documents comprised handwritten text on a range of paper sizes. When mainframe computers were first introduced some of the ledgers were replaced by temporary digital storage, but for safekeeping most computer data was also output to paper in the form of bulky computer printouts.
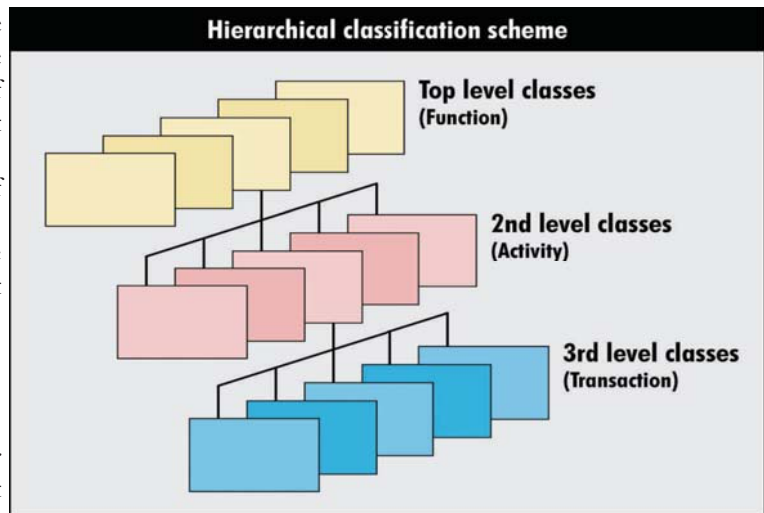
3.2.2 Paper and microfilm

A photographic medium called microfilm had been in existence for many years in niche markets such as banks where cheques were regularly microfilmed. In the 1970s, alongside the rise of the computer, the use of microfilm increased as a way of reducing the space occupied by inactive and archival paper documents and/or records. Paper folders were used while documents were active but, when they became less active, the paper was microfilmed to save space and for preservation purposes. Large volumes of valuable reference documents were also microfilmed and duplicates made and sold as a low-cost form of publishing. There were roll microfilm formats including 16mm and 35 mm (Fig. 3.4 overleaf) and flat or unitised formats including microfiche, microfilm jackets and aperture cards.

Government departments, financial institutions and manufacturing companies all made use of microfilm. Several suppliers also developed computer output microfilm (COM) recorders, which recorded computer data directly onto microfilm. The use of microfilm peaked in the 1980s and billions of documents were recorded onto this medium. Microfilm made a secure archive format and huge collections remain on microfilm today. However, it was never a very easy format to use and was not practical for the management of active documents.
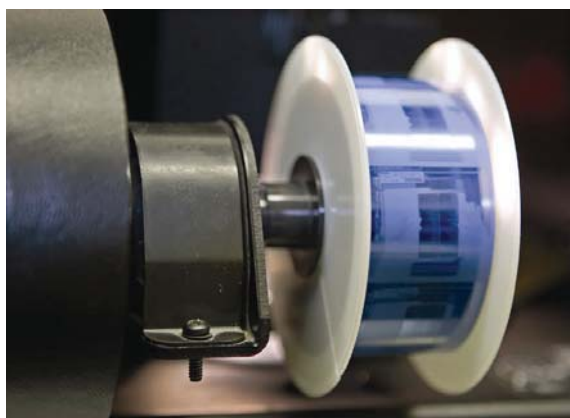
Fig.3.4
35mm roll microfilm in use on a reader

It survives today as a proven medium for archives with low rates of retrieval.

3.2.3 Computers in the office

In the 1960s and 70s medium-to-large organisations had their own mini and mainframe computers but, with some exceptions, they were largely used for data processing rather than document creation. Tools for managing structured data developed to include relational database management systems. Government departments and large commercial organisations started to use computer systems to manage paper records. A database was used to hold the metadata needed to uniquely identify each folder and folder part, to track the location of folders in the registry or out on loan to users and the status of folders as open or closed.

In the 1980s the entry-level cost for computing came down considerably and we saw the introduction of personal computers in the office. Word processing became widespread with staff creating their own documents in electronic format. This was followed by spreadsheets and many other personal productivity applications. As Microsoft achieved dominance in the personal computer world, with its Windows operating software and Office applications, a level of de facto standardisation was achieved and users started to develop ad hoc, hybrid, records management solutions where internally-generated electronic documents were held in electronic folders on shared drives while incoming documents were held in paper folders in shared locations.

3.2.4 Document image processing (DIP)

In the 1980s suppliers began to introduce a range of scanners that could scan paper sizes from size A4 to A0 and create digital images from them which could be stored, retrieved and viewed on a new range of high-resolution PC monitors. Small-scale systems were, in effect, electronic filing cabinets (Fig. 3.5). Active, scalable systems were supplied with workflow management (WFM) software so organisations could scan the incoming post, route the images to designated staff to process, and keep track of the status of each work item on the system.

Systems were often provided with a forms-processing capability so they could capture data from forms, validate it and load it into business administration databases.

3.2.5 Electronic document management (EDM)

In the 1990s a new generation of systems was introduced to manage active, changing digital documents created on Microsoft Office applications and other popular application packages. These electronic document management (EDM) systems managed all the documents in a repository or library and assigned index/metadata to each document to manage the relationships between them and to provide access control. They were provided with check-out and check-in facilities and version control and were widely used in head office applications and by legal firms and pharmaceutical companies. Over time, DIP and EDM systems merged to form integrated systems. The document and data capture subsystems were mainly provided by specialist software providers who designed their capture subsystems to interface with the leading EDM systems.

3.2.6 Text retrieval and search engines

Shortly after organisations started to process text on computer systems, a number of suppliers developed full-text software engines that could take a large library of electronic documents and create an index listing all of the words contained within the documents and every instance where they were held. Similar principles later drove powerful internet search engines such as Google and Yahoo. The EDM suppliers integrated the leading search engines into their corporate solutions.

3.2.7 Collaboration and Business Process Management

In the mid-1990s organisations began to identify a need for electronic tools to support co-operative working. Users did not only need to access information in electronic filing cabinets, they needed tools to help them collaborate to achieve their goals (Fig. 3.6 overleaf).

Fig.3.5
An early document image processing (DIP) system

*Fig.3.6
Functions
provided by
collaboration
software*
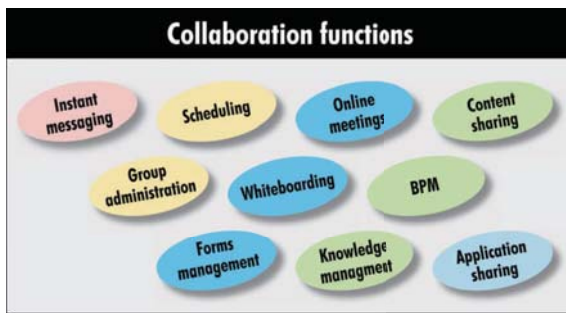
A range of tools began to emerge to support collaborative working. Different tools were developed to support unstructured, ad hoc processes on the one hand, and high-volume, rules-based structured processes on the other. The simplest and most flexible tool to aid collaboration was email. On top of email we saw the development of groupware software which was epitomised by Lotus Notes in the 1990s and which spawned many followers. Over time, groupware has given way to collaboration suites which take full advantage of developments in the ICT infrastructure. The most widely used collaborative software platform is now Microsoft's SharePoint. This was launched in 2001 and has progressively developed and expanded over the years to provide most, if not all, of the elements required in an ECM suite.

The late 1980s and early 1990s saw the launch of a range of workflow management (WFM) software that allowed large organisations to redesign and automate their business processes, to manage change and ensure that their processes better met business objectives. When linked with DIP and EDM software, WFM software led to the complete redesign of functions such as claims processing and loan approval. Workflow management later became branded as Business Process Management or BPM.

3.2.8 Electronic publishing and content management

Almost as soon as word processors were installed in offices, the suppliers went on to develop and market electronic publishing software to both commercial and corporate publishers. The initial benefit of electronic publishing to print publishers was that they could take electronic content, mark it up and then render it to create masters for conventional print publishing, on the one hand, and electronic publishing on the other.

The key to the widespread use of electronic publishing was standards. Initially, all the major suppliers had their own markup languages. In 1969 IBM developed their Generalised Markup Language (GML) and that has developed over time into SGML, HTML and XML.

The arrival of electronic publishing created a specialised demand for content management systems rather than electronic document management sys-

tems. Content management (CM) was the term used to differentiate systems that managed at the content or component level from systems that managed at the document level. CM systems were designed to help organisations exploit, reuse and publish their content components. A CM solution was designed to keep the content separate from the delivery mechanism or the presentation format.

With a DIP or simple EDM system you have no choice about how you view the document: you see either an image of a page in an image viewer or you see the native file presented by the application used to create it. With a CM system the content can be marked up using SGML or XML and then the user defines, using a style sheet, how they want that content to be rendered on one or many delivery media or channels (Fig. 3.7).

One of the key features supported by CM systems is assembly: the ability to assemble a document from all its component content objects or components and render it on screen or on paper or however it is required to be rendered in future. For many years CM was a relatively specialised marketplace supporting large commercial or corporate publishers. The advent of the Internet and the World Wide Web widened the market for CM, or at least for an important subset of CM called Web Content Management.

3.2.9 Web Content Management

In the 1990s interest in the Internet and the World Wide Web grew rapidly and the first generation of Web applications took us all another huge step further towards enterprise content management. The application with the greatest impact for ECM was the World Wide Web, a document-based hypertext system which operates as an overlay to the Internet. It protects users from the need to know where information is physically stored and allows authors and users to set up, manage and navigate

*Fig.3.7
Content
management
system facilities*
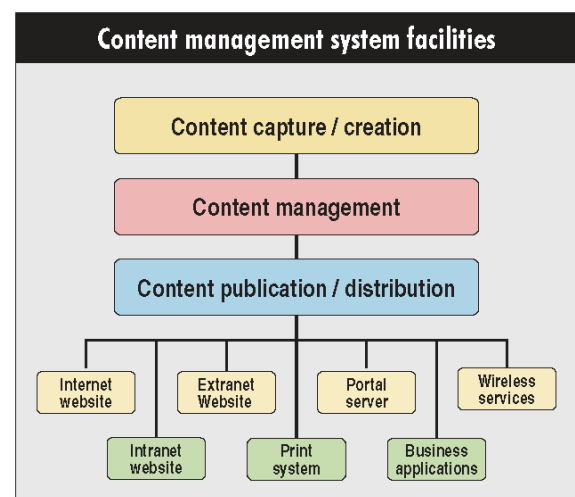
information bases or websites that span different locations, resources and suppliers.

Internet websites grew at a rapid rate and we saw the introduction of corporate intranets and extranets. The power of the Web was obvious, but while it was easy to set up websites and load documents onto them it was less easy to keep the material up to date and maintain all the links as documents were changed or deleted. It was difficult to monitor the quality or consistency of the material published on a website and users got bored with disorganised websites.

This created a demand which was initially met by a specialised type of content management system designed to manage the content on websites and, not surprisingly, this software came to be known as Web Content Management (WCM) software.

To support WCM you needed to manage information at the content and at the document level and to capture existing content, transform existing content and support the creation of new content specifically for the Web. You also needed to create web pages that were reusable, and index and manage them in the repository alongside the content. One of the key functions of a WCM system was to check all the links between pages and content and hence guarantee the integrity of all the links within a specific website.

A core function supported by all WCM systems is web publishing, using workflow to approve, deliver and reformat content for the website. WCM software also monitors the usage made of content and incorporates archiving software for pulling inactive content off a website.

WCM was ideal for managing large editorial websites which involved organisations and commercial publishers creating, organising and publishing their content to a defined audience in an organisation via the intranet or worldwide via the Internet.

The main model for these first generation Web 1.0 applications was the publishing model where organisations could publish a subset of their content on the Web and consumers, other organisations and customers could access this vast amount of content via their standard browser on the desktop. While e-commerce applications were supported the bulk of consumers were cast as passive consumers of content. This is something that has now changed with the advent of Web 2.0 applications (see below).

3.2.10 Electronic records management

In the 1980s many large organisations managed their paper records using records management software and they had a print-to-paper policy whereby all documents deemed to be records had to be printed out and stored in paper folders. From the early 1990s a growing percentage of documents were created electronically and the paper-based RM regimes began to fail. Users were reluctant to print out a copy of all their electronic documents and, increasingly, incoming paper documents were held in paper folders and outgoing digital documents were held in directories on magnetic disk drives.

Records managers looked at the new DIP and EDM systems but there were very few facilities provided for corporate classification, declaration and disposition. A number of the suppliers of RM software for controlling paper records enhanced their systems to manage electronic records as well. In addition, some new suppliers focused on the electronic records management (ERM) market. But there were no standards for best practice in ERM.

In the UK, the 1999 Modernising Government White Paper made it necessary to set standards for the systems that were to hold government records online. The National Archives (TNA) initiated a project to identify functional requirements for ERM in the UK government context and to evaluate available systems against those requirements. The first version of the requirements was published in 1999 and identified three core functional areas for ERM systems:

- Declaration—the ability to capture the document(s) that make up the record and freeze its content so that it cannot be changed thereafter.
- Classification and organisation—support for the structuring and categorisation of records so that all relevant records are brought together for consistent access and lifecycle management.
- Disposition—facilities to support the maintenance of sustainable records over time, to retain only those that should be kept and to manage the controlled disposal of those no longer needed.

In 2002 The National Archives issued a new version of its requirements document with more detailed metadata standards.

Those organisations that did not want active document management facilities could purchase and implement a standalone ERM system. Where companies had already implemented an active EDM system, a growing number of EDM suppliers integrated their products with ERM software to provide integrated document and records management solutions which were referred to as electronic document and records management (EDRM) solutions.

There was a rapid growth in EDRM in government as departments and local authorities sought to provide online services and to capture the records of those services into online systems.

Following the work by TNA, the European Union commissioned and published a more-detailed set of guidelines and requirements called MoReq[1] to assist users in specifying their requirements for an ERM system. Later, the European Union supported the development of an updated version of the MoReq standard—MoReq2 in 2008 and now MoReq2010 which is described in more detail in section (2.4.7 above).

3.2.11 Enterprise content management

After nearly thirty years of evolution we arrived at a situation in 2003 when organisations were looking to implement a single suite or framework of software designed to meet all their content, document and records management and collaboration requirements. The suppliers responded with a series of acquisitions and mergers and new software development that has allowed many of them to develop integrated solutions. Today, there are broadly three types of suppliers serving this market: (i) suppliers of point solutions, (ii) suppliers of EDRM suites that interface with collaborative software, and (iii) suppliers of ECM suites (Fig. 3.8).

- Point Solutions Suppliers in the first category offer one tool and are targeting small to medium-sized customers who need a solution to a specific problem. They will typically offer an archive solution, an electronic document management solution or a web content management (WCM) solution.
- EDRM Suites Suppliers in the second category comprise those who have combined document capture, document management, records management and often business process management (BPM) functions to create an electronic document and records management (EDRM) suite. Such a suite meets all the document and records management requirements of a large organisation that needs to set up a tightly-

controlled records management regime for regulatory compliance. They can usually also be integrated with one or more collaboration suites and web content management (WCM) software.
- ECM suites Suppliers in the third category comprise those who have combined an even wider range of software to create what they refer to as an enterprise content management (ECM) framework. A full ECM framework includes document, content, records, web content and knowledge management and the full range of collaboration tools including BPM tools.

3.2.12 Social networking

Today, some fifteen to twenty years on from the start of the Web 1.0 era of Web content management, a new wave of Internet applications has grown that support a second, fundamentally-different model of content management on the Web; a collaborative or social networking model where most, or at least a significant percentage, of the content to be managed is user-generated rather than editorial, and where one of the key objectives is to support collaboration and reuse of the content.

For those of us in the document and records management world, Steve Bailey[2] produced a useful and thought-provoking guide to the Web 2.0 world and the challenges it poses for corporate information and records management. He referred to a useful attempt by van Harmelen[3] to classify Web 2.0 applications into seven distinct types:

- blogs
- wikis
- social bookmarking
- media sharing services
- social networking systems
- collaborative editing tools
- syndication and notification technologies

In addition to passively publishing content on websites the new applications support the reuse of the content and provide facilities for the content to be reviewed, tagged and linked to other relevant content.

Many of these applications currently are aimed at individual consumers rather than organisations. The take up of Web 2.0 applications has been dramatic with millions of blogs, widespread use of wikis and high levels of usage of applications such as Flickr for the storage of digital photographs, YouTube for the storage of video clips and Facebook for an interactive personal web site.

The greatest issue for the records manager and information security officer is when individuals use these Web 2.0 applications to store and share cor-

Fig.3.8
The types of suppliers

porate information. Because many of these applications are free, staff may use them to share large files with colleagues and to synchronise files between work, home and mobile devices. Clearly, as well as offering great potential this trend also creates risks around records management, information security, data protection and intellectual property rights.

Many organisations have developed policies and procedures to control the use of Web 2.0 applications by staff and have provided in-house or corporately approved substitutes. However, even the approved applications do not usually provide any records management or archiving functionality and the content they contain remains a challenge for corporate records management.

3.2.13 Information and records management on the Cloud

As well as individual use of the Cloud for social networking or collaboration we have corporate use of the Cloud.

We have seen the trend from on-premise applications, to managed applications, to hosted applications and now to Cloud applications. To the user it can look very similar. To the organisation the benefit of the Cloud is firstly in payment profile: 'pay as you go' avoids the need for up-front expenditure, an attractive proposition during a time of cutbacks, and secondly in flexibility: companies only pay for the storage and functionality they use.

Organisations can buy into Cloud services at various levels: infrastructure, platform or software-as-a-service. The government is actively promoting cloud applications for the public sector via its G-cloud frameworks. The Cloud can be used for unstructured as well as structured data: popular Cloud applications include shared storage, office applications and email. ECM and EDRM on the Cloud have arrived more slowly but Microsoft is using its pricing strategy to promote SharePoint on the Cloud in its Office 365 service and many of the large ECM suppliers now offer a Cloud option.

The Cloud is unstoppable but when it comes to putting corporate information on the Cloud there are some serious issues that need to be addressed, including performance service levels, reliability, data protection, intellectual property rights and exit strategy. What level of availability does the service provider guarantee? What level of security is offered to avoid the risk of other organisations or hackers gaining access to your content? If the content includes personal information are the datacentres and the backups all in the European Economic Area or EU-approved country? What happens if the service provider goes out of business? Will there be a chance to export your terabytes of corpo-

rate content and where to and how long will it take?

There are no standards yet that enable documents and data to be easily moved between Cloud applications. MoReq2010 would provide a useful standard for export and import if any of the vendors achieve compliance, but take-up has been slow as of early 2013.

None of these issues is insurmountable but, clearly, more complex service levels and security requirements will not be covered by standard contracts and will increase the cost of the service.

3.2.14 Access everywhere

The advent of tablets and smartphones has changed the way we work. We no longer have to go into the office or back home to check our emails. We can find the weather report, check the state of the roads and find the nearest filling station whilst on the move. We therefore want to be able to read our case files on the way to visit a client and write up our notes on the way back. What we need, and what some ECM / EDRM vendors are starting to supply, is an application (app) that will access content of many types from devices of many types.

ECM and EDRM systems are now offering special plug-ins that enable the reformatting of document types such as spreadsheets and PowerPoint files for smaller screens. With mobile access, users can contribute to corporate discussion threads and micro-blogging sites while travelling. Especially useful is mobile workflow, which enables users to fill in forms, trigger processes and approve documents and decisions without returning to the office.

3.2.15 Records everywhere

As we have seen with the Cloud and social networking, our corporate records are increasingly being generated and stored in many diverse systems and services. Our records may be datasets or videos or 3-D models or CCTV film or X-ray images. And volumes of data are multiplying every year. Big Data is very much a mixed blessing. We have always recognised that attempting to gather all our records into a single corporate ECM system is not necessarily the best solution. Now we are tasked with finding ways to apply records management elsewhere and in other systems.

The information manager of the future will find his or her job will be to identify the corporate records wherever they may be and apply information management principles to them using whatever tools and technologies can be found. For office documents and most operational records ECM or EDRM is still the best solution. For specialist information types or outsourced services the princi-

ples of records protection, retention, digital preservation and disposal might have to be applied in situ or an archiving process set up to gather records into EDRM at the end of their active life.

MoReq2010 modules when completed will define how records management can be embedded in many different types of systems, including email systems and finance systems. The difficulty will be persuading vendors of such systems that compliance gives them competitive advantage. Our duty as purchasers of systems is to demand records management features from every system procurement.

3.3 Reviewing the Solution Options for Information and Records Management

3.3.1 Background

In chapter 2 we have looked at the case for improving your corporate information and records management, what is involved in developing a policy and the best practice guidance available to help you review where you are and where you could make improvements. In chapter 3 so far we have given some definitions and charted the historical development of solutions that enable organisations to manage their information and records more effectively.

In chapter 4 we will review the functions that together make up an enterprise content management solution. In chapter 5 we will look at a methodology for managing an information and records management project and in chapter 6 we will look at how you can make the business case for investment in an information and records management project.

In this section we review the options for information and records management solutions. Before you start planning a project and making a business case you need to take account of where your organisation is with information and records management and consider which solution options are likely to be most appropriate for your organisation.

You will not be able to make a final decision about which option best meets your needs until after you have carried out your information gathering exercise and defined your core objectives—in other words when you have your project set up. However, it is useful to have an overview of the options available to you before you start as it can help you scope your project. If, like many organisations currently, you have significant budget constraints, or your organisation is already committed to a particular solution, e.g. SharePoint, or has already outsourced the IT function, etc., then you can rule out a number of options and focus on the one or two remaining options for you organisation.

The methodology outlined in chapter 5 defines ten stages for an information and records management project:

1. positioning ECM and EDRM systems
2. defining and managing your project
3. information gathering and analysis
4. feasibility study and options review
5. making the business case for the preferred approach
6. defining the statement of requirements (SOR)
7. procuring the solution
8. managing the implementation
9. measuring the results
10. project closure and solution support

In all cases we recommend that you follow stages 1—4 irrespective of which options you have ruled in or out of scope. Even if you do not have a budget for a new system, and hence are going to use existing tools, you should follow Stage 1 and review what functions such systems provide and then consider whether you need them and, if so, how you can meet the requirement with existing tools.

However, depending on which options you have ruled in or out you only need to consider the remaining options in Stage 4.

If you opt to use existing tools, or a solution that has already been procured, then you may not need to go through a formal procurement process but you should still define your requirements in Stage 6 and define the in-house or third-party resources needed to implement the solution so that you can make the business case and ensure your project is adequately resourced.

There are many ways in which the range of solution options available to you today can be divided up. At a high level we can divide them into three options:

- use existing tools
- implement an in-house ECM solution
- outsource ECM

The first option means that procuring a new technology solution is out of scope of your project. Your project must focus on improving information and records management policy and procedures using the systems and software already available. This option is reviewed briefly in section 3.3.2 below.

The second option means that procuring a new solution and implementing it in-house is within the scope of the project. Within this option we make a distinction between Microsoft SharePoint and other ECM solutions. This option is reviewed briefly in section 3.3.3 below.

The third option means that using a new solution is within the scope of the project but, either the organisation has outsourced all its IT applications already, in which case an ECM solution will also be outsourced, or the organisation wishes to outsource ECM specifically. This option is reviewed briefly in section 3.3.4 below.

3.3.2 Information and Records Management Using Existing Tools

This option is adopted by organisations who either do not have a budget to procure a new system or who are not currently convinced of the need for a new system, i.e. they think they can achieve the improvements they are looking for without investing in a new solution. It can also be adopted as an interim strategy by users who want to develop information and records management tools first and improve the organisation of existing information and records, and then move forward to procure a solution as a separate project.

Existing tools usually include one or a number of the following:

- shared network drives and operating software
- email systems
- business administration systems that support content and document management
- intranets
- paper storage

For many users it involves looking closely at how information is currently stored. Digital information may be stored on personal drives, shared drives, in databases, on websites and in email inboxes. Analogue information may be stored on paper in folders held locally or in registries, plus in a range of other formats including microfilm, slides, photographs, video tape, etc.

Most clients Cimtech has worked with focus on improving how electronic documents are stored on shared network drives, ensuring that no valuable information is held unprotected on personal drives that are not backed up and imposing a sustainable structure on shared drives.

Key factors include file naming conventions, preventing records from being overwritten, implementing a classification scheme and retention schedule, handling the migration of existing content, controlling the creation of new folders and planning and controlling deletion.

Many organisations maintain paper records centres, either for archive information or to hold important long-term records that they do not trust to shared drives, however well managed.

Overall, organisations can achieve considerable improvements using existing tools, but if full regulatory compliance is called for then using existing tools can be a very labour-intensive solution. Cimtech recommends this approach to organisations who wish to improve their information and records management and start to migrate their content into a classification scheme in preparation for the implementation of an ECM solution in the future.

Cimtech runs a one day introductory course specifically devoted to 'Information and Records Management Using Existing Tools'[4].

3.3.3 In-house enterprise content management solutions

ECM solutions

If organisations decide that they need a new in-house solution to manage their content and documents as part of an information and records management project then they need to define their requirements, make a business case, go through a procurement process and decide how much support they will need from the software provider and/or third party. This is the second option to be considered.

As outlined in section 3.2 above the market for document and content management solutions has evolved over the last twenty years to the current position where there are, broadly speaking, three types of system on the market—point solutions, electronic document and records management (EDRM) solutions, and enterprise content management (ECM) solutions.

The way to decide between these three categories is to define your requirements in advance. Broadly speaking, if you want to use the solution just in one application or department you may select a point solution. If your prime concern is web content management then you could select a solution dedicated to WCM only. If you are looking to manage your documents across the whole organisation and to define a subset as records and manage them then you could look at an EDRM solution. If you want to manage documents and records and all your web content with one solution, and you want to support collaborative working as well, then you will need a complete ECM suite.

The full range of functions offered by these systems are reviewed in chapter 4. The process you need to go through to gather information and define your requirements and select a solution is reviewed in chapter 5.

Details of ECM products and their suppliers are contained in the relevant sections of the online Cimtech Directory.

Microsoft SharePoint

Microsoft SharePoint is the fastest-growing and best known ECM solution on the market. We deal with it separately here for two reasons.

The first reason is that many organisations will have access to at least some of the SharePoint software through their corporate Microsoft licences. Hence, in one respect, it can be seen to be an existing software tool and they may not need to go through a competitive procurement process to acquire additional SharePoint software. Depending on how the organisation chooses to use SharePoint this makes it a slightly different option. For many organisations SharePoint will be the only solution available.

The point Cimtech would make here, however, is that if a medium-to-large organisation is looking to use SharePoint as their corporate ECM solution, and they wish to implement a tight set of records management procedures consistently across the organisation, then in addition to implementing the software they will need support to configure, develop and integrate the solution over the long term. This would be true with all ECM platforms on the market but SharePoint implementers will also need a number of add-ons to fill in gaps in its functionality. Hence, although they may not need to go to a competitive procurement to acquire the software, organisations should consider going out to procurement for a SharePoint developer to support them in developing, configuring and implementing the solution. They will also need to define their requirements and make the business case for the project.

The second reason is that SharePoint is more than just an ECM solution. Microsoft splits SharePoint 2013 functionality into eight areas:

1. Developer
2. IT Professional
3. Content
4. Insights
5. Search
6. Sites
7. Social
8. Add-ons

Many organisations defined SharePoint as their collaborative environment before they started to look in detail at ECM. Significantly, almost all of the other leading suppliers of ECM solutions have either adopted SharePoint as their preferred collaborative tool or have at least integrated SharePoint with their ECM platform.

SharePoint has gone through a number of versions over the past 12 years. Early versions of SharePoint did not support a full set of records management capabilities and there were some scalability issues. SharePoint 2010 addressed many of these issues. SharePoint 2013 has made only minor changes in the document and records management functionality and Microsoft now with its App Store concept for SharePoint 2013 is actively encouraging the use of add-ons to provide missing functionality.

Today, most small-to-medium size organisations and many large organisations will have selected SharePoint as their ECM platform. Many others will have selected a different ECM platform but will have integrated SharePoint with that ECM solution. We look at the options in more detail in chapters 4 and 5.

If you are in the public sector and are considering the use of SharePoint for information and records management then The National Archives have published a useful guide entitled 'Records management in Sharepoint 2010: implications and issues'[5]. The implications and issues are still true of SharePoint 2013, except that the App Store model makes the use of add-ons more standardised and less likely to present risk to a future migration.

For all organisations that have implemented, or are planning to implement, SharePoint and plan to use it for document and records management then Cimtech offers a one day course 'Information Architecture for SharePoint Document and Records Management'[4].

3.3.4 Outsourced enterprise content management

The third, high-level option is that your organisation opts for an ECM solution (including SharePoint) but opts for an outsourced rather than an in-house solution.

As described in section 3.2 above, the outsourced option covers a number of sub options.

On the one hand, your organisation may have already outsourced the management of your IT infrastructure and/or your corporate IT applications to a third-party supplier. If this is the case then your organisation will simply need to define your business requirements for an ECM solution and the third-party supplier will specify a solution and add it to the range of managed applications. This will simplify the procurement process compared to the standard competitive procurement approach but be aware that it might limit significantly the choice of solution to those which the third-party supplier has experience of supporting.

On the other hand, your organisation might manage its own IT but outsource individual applications to a hosted service or Cloud service. We have discussed some of the risks and issues of Cloud solutions earlier.

There are a number of elements of an ECM solution that are good candidates for outsourcing even if you decide to implement the main ECM software in-house. These include scanning the post in the post room, scanning any back files that you wish to convert into digital images and managing legacy paper files that you do not wish to scan. BPO (Business Processing Outsourcing) suppliers offer post room scanning services, scanning bureaux offer scanning and indexing services and there are a number of companies who offer secure off-site storage of paper records and a range of retrieval options. See the **Cimtech Directory** for listings of suppliers by category.

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