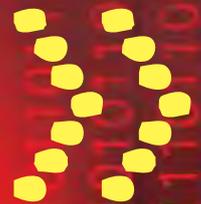


# EDRMS Users' Information-Seeking Behaviour: Managerial and Training Challenges For Records Managers

Drawing on findings of their field study on the information-seeking behaviour of 40 Electronic Document & Records Management System (EDRMS) users in 4 organisations using different EDRMS – published in the last 3 issues of *IQ* – the authors here set out to alert records managers to the managerial and training challenges they need to consider to better serve their EDRMS users.

BY PAULINE SINGH, ARMA, PROFESSOR JANE E. KLOBAS, AND PROFESSOR KAREN ANDERSON



The off-the-shelf systems that dominate the EDRMS market emphasise organisation and control of records for accountability, evidentiary, regulatory compliance, business decision making, and archival purposes.

They use techniques described in the records management (RM) literature (McLeod & Hare, 2005; Shepherd & Yeo, 2003) and the records management standard, ISO 15489 (International Organization for Standardization, 2002a, 2002b).

Most of these systems, like Tower Software's TRIM Context and Open Text's recently acquired Hummingbird, began as systems for indexing paper documents at a time when classification and registration of documents was the domain of professional records managers in the 1980s and 1990s.

However, EDRMS are no longer the sole domain of professional records managers. Knowledge workers throughout the organisation now use information and communication technologies to create electronic records and register them in the EDRMS, and they use the EDRMS to retrieve them (Miller, 2006).

EDRMS, then, are no longer the back-office systems they once were, but systems that people throughout an organisation are expected to use (Kittmer, 2005). The people who prepare records are required to enter them in the EDRMS, adding at least some basic descriptive metadata such as title, author and creation date so that the record can be managed throughout its life span and retrieved by others.

Because such a high proportion of organisational records are now in electronic form, 'ordinary' members of the organisation (and not just records managers) use them as they search for documents and information to support their day-to-day operational activities. Yet, perhaps because of their history as systems originally developed for use by records managers, we know very little about how organisational users interact with EDRMS.

How do they actually use the EDRMS to search for records? Do they understand metadata and classification schemes and use them effectively? How do other factors such as training, Individual Information Seeking Style (IISS), task and the time available for searching affect how they use the system?

We explored these questions by looking at how users search for and retrieve information from EDRMS. We reported answers to these questions in our article (2007a) titled 'Information seeking behaviour of electronic records management systems (EDRMS) users: implications for records management practices' (Singh, Klobas, & Anderson, 2007a).

In the earlier article we described how we drew on observations of information seeking behavior (ISB) in other fields to learn how users search for information using EDRMS. We also presented the results of interviews and observations of 40 users in 4 different organisations using 4 different implementations of EDRMS.

In this article we focus on the managerial and training challenges associated with ensuring that EDRMS support operational activities. What do records managers need to get right to ensure that EDRMS meet the day-to-day operational needs of users throughout the organisation as well as ensure compliance of the EDRMS for evidentiary and regulatory purposes?

## BACKGROUND TO OUR RESEARCH

Forty EDRMS users in 4 different organisations participated in our study. We interviewed them in their offices, asking them about how they used the EDRMS, what training they had

## Story Snapshot

- Inconsistent record titling creates search problems
- Classification scheme training is a must
- Online training works if assessments are built in

received, their understanding of the classification scheme, and how time affected their information seeking.

We also asked them to demonstrate two searches they had recently conducted with the EDRMS, one simple and one complex, and to talk us through the process they followed as they conducted the searches. (This latter technique is known as protocol analysis). In addition, we interviewed the RM responsible for management of the EDRMS in each organisation.

All 4 of the organisations that participated in the study had qualified RM professionals and support records staff; recordkeeping policies and procedures; an established approach to classification of the organisation's records such as a taxonomy, thesaurus, or classification scheme; and a retention and disposal schedule that authorises the disposition of records in accordance with legislation affecting the organisation.

The organisations each used a different EDRMS (two used different versions of the same system), but in all cases, the EDRMS was used to manage electronic documents and integrated with a suite of personal productivity software that included word processing, spreadsheet, presentation, and email applications.

All interviews and protocols were recorded and transcribed. Process flowcharts were developed to summarise the ISB of each EDRMS user. The individual ISB maps were then aggregated to produce an aggregated model of the ISB processes of EDRMS users as presented in Figure 2 of Part 2 of our report published in the February 2008 issue of *IQ*, (p. 51).

Details of the research method and research findings were first published in the *Human IT* online journal (Singh, Klobas, & Anderson, 2007a). This earlier article was subsequently republished in the *IQ* journal by the RMAA with minor modifications. The theoretical framework for the research and expected relationship between these variables and ISB appear in the republished article in Figure 1 in the November 2007 issue of *IQ*, (p. 40).

## MANAGERIAL CHALLENGES

Overall, even though EDRMS have been designed to support formal RM principles and practices, users seem to be able to adapt to this design as they search for information and documents to support their day-to-day work. The challenges appear to be associated more with implementation of the EDRMS.

While other authors have examined implementation from the organisational point of view, our study of user interaction with the EDRMS provides some additional insight into managerial challenges and potential solutions. In this article, we address 4 managerial challenges that RMs need to be aware of, and we suggest how these challenges can be addressed.

These managerial challenges are summarised as: 1) understanding user behaviour in different organisational contexts, 2) creating awareness of classification schemes to

improve search and retrieval, 3) establishing processes for accurate capture of metadata, and 4) providing appropriate training.

### Managerial Challenge 1: Understanding Users

The ISB model presented in Figure 1 illustrates the common ISB processes in searching for information and records in an EDRMS. At several stages, though, different users choose different activities.

For example, some will use shortcuts while others will search by metadata, and among those who search by metadata, some prefer title searches while others prefer to search using other metadata elements.

Our research shows that the exact activities undertaken depend on the implemented EDRMS's functionality and design, a user's IISS, the training they have received, the task they need to perform, and the trade-off between time spent using the EDRMS and the potential to obtain the information from another source.

We also saw that while users could benefit from using classification scheme for information retrieval they rarely do so. The lack of searching using the classification scheme as metadata fields or navigation down a tree view folder structure appears to reflect the failure of organisations to train their users in the classification scheme as a technique for information search and retrieval.

A complex web of factors therefore appears to influence how users search in the EDRMS, and thus the effectiveness and efficiency of their search behavior. The interplay between these influences is likely to vary from one organisation to another.

Thus, although we have been able to produce a model of common processes and activities, the detail of how users interact with the EDRMS in each organisation must be determined by the individual organisation.

We suggest that organisations use the ISB search process model (shown in Figure 2 of Part 2 of our report in *IQ*) as a template to find out how users are searching for and retrieving information in the organisation. We suggest RMs borrow the vocabulary used in describing ISBs for this exercise.

For example, RMs could sample five representative users from across different sections of the organisation. Analysis of their activities should indicate if users are able to use the EDRMS effectively for the tasks they need to perform and identify any aspects of EDRMS use that might be improved through training.

Users could also be encouraged to use the model to diagnose their own ISB. Because each user has their own IISS, their preferred method of searching may not get the best search results out of the EDRMS.

Periodic assessment of a user's search behavior will identify when search is dominated by preference and habit rather than the most appropriate techniques for formulating search strategies to retrieve the records they require.

### Managerial Challenge 2: Creating Awareness of Classification Schemes Implemented

All 4 organisations studied had implemented classification schemes in their EDRMS, but only one made users aware of the scheme and none of the organisations promoted it as a search and retrieval tool. Thus, users relied heavily on searching using metadata fields, but this is not always the most effective or efficient search method.

The challenge for EDRMS professionals is to design

implementations of classification schemes that are easy for end-users to understand and use as recommended in an earlier article (Singh, Klobas, & Anderson, 2007a, p. 176). We address promotion and training for use of a classification scheme as a separate challenge and discuss this in MC4d.

### Managerial Challenge 3: Establishing processes for Accurate Capture of Metadata

Poor record titling and other inconsistencies in the capture of metadata created the greatest difficulty for users searching the EDRMS. They complained in particular about inconsistent or meaningless record titling and the use of non-standard abbreviation.

One user could not find the record she registered a few months ago because she had used abbreviations. The following quotes highlight difficulties in searching caused by poor titling.

"Difficult searches are usually where I know a piece of equipment and I know what type of drawing I require, but I don't know a drawing number, and I don't really know precisely what the drawing's been, how the drawing's been named or classified". Senior Draughtsman

"I've put in the word 'valve' but they've actually got 'vves', they've abbreviated valves, so that could be my problem there, why I haven't had a match". Senior Draughtsman

"I realised I had spelled out the title in full when I titled the documents and months later forgot about it and when I used the abbreviations VCR and CTT I can't find them. Now I title all my documents by spelling out the full title plus the abbreviations so that I will find them in future". Senior Currency Officer.

»» "THIS RESEARCH HAS IDENTIFIED 3 DIFFERENT TYPES OF TRAINING THAT NEED TO BE PROVIDED TO EDRMS USERS" ««

#### • MC3a – Establish processes for accurate metadata capture.

Two organisations in our study used an EDRMS that provided a 'contacts' metadata field to record the names of external organisations. Users could pick an organisation already in the organisation metadata pick list or add a new one.

Allowing users to add to metadata pick lists raises concerns on the quality assurance of metadata values. Users in these organisations reported difficulty finding all records associated with a specific organisation because the person who registered the record had left the contacts field blank or the contact was registered inconsistently in the EDRMS.

For example, there were two entries for one organisation: "ABC Environmental Solutions Pty Ltd" and "ABC". Searches conducted using the pick list for the full name of the organisation did not find records captured using the abbreviated organisation name and vice versa.

Users found only partial information pertaining to the organisation unless they were aware of the double entries for the organisation and thus conducted two searches. In this instance it made information searching not only difficult, but ineffective.

The challenge for EDRMS professionals is to ensure the accurate capture of metadata for such pick lists, to avoid duplication and improve search. For metadata fields such as organisation names, it may be best to import lists from published authorities like company directories.

Alternatively, users should not be allowed to enter metadata into controlled pick lists. They should contact the RM or RM Help Desk to create new entries to the pick lists. This process will ensure quality control checks on metadata pick lists, thereby minimising search problems.

- **MC3b – Enforcing standards for titling records, especially common record types.**

Two of the 4 organisations have standards and guidelines for titling records. However, even in these organisations the problem with poor titling occurred.

We suggest that organisations develop guidelines/standards on document titling if they don't have one in place, and communicate this documentation to users again and again highlighting the difficulties that will result when seeking information if it is not used.

Having reviewed the guidelines the 2 organisations had, we found them to be generic and did not address specific commonly used records like contract variations, invoices, letters, etc.

We recommend creating guidelines for titling common record types used in the organisation then, communicating this standard to all EDRMS users during induction and training of the EDRMS application. We encourage EDRMS professionals to suggest that business units develop additional record titling standards for specific record types created or received by them. The challenge lies in ensuring these standards are communicated to members of the business units regularly. Enforcement of these standards can be done by EDRMS professionals incorporating recurrent monitoring and auditing initiatives into their RM programs.

- **MC3c – Investigating options for automating record titling in the EDRMS.**

An alternate challenge for EDRMS professionals would be to investigate opportunities to automate the record titling process in the EDRMS. This would require pressuring EDRMS vendors to enhance functionalities of their EDRMS to provide this capability or to invest in research on technologies that would enable them to offer such functionality in the future.

#### **Managerial Challenge 4: Providing Training for EDRMS Users.**

This research has identified 3 different types of training that need to be provided to EDRMS users to enable them to efficiently and effectively work with the EDRMS to search and retrieve information.

Once an EDRMS is implemented in the organisation, EDRMS professionals have to invest in training not only during the implementation stage of the EDRMS but also post implementation.

Ongoing training programmes need to be in place to: promote working with classification schemes; assign meaningful titles to information registered into the EDRMS; provide refresher training for user's information seeking skills; and update users' search skills when software upgrades are implemented.

- **MC4a – RM Training**

In order to interact with structured EDRMS users will benefit

from understanding the concepts that lie behind the data entry and search mechanisms. As such, providing users with RM training on the basic concepts of the characteristics of a record, and how the classification scheme works are necessary for users' understanding and working with the EDRMS.

Section 7.2, in ISO 15489-1 outlines the characteristics of a record; records need to be authentic, reliable, have integrity and be useable (International Organization for Standardization, 2002a).

Knowing how to identify records and understanding their importance will encourage users to capture and accurately assign metadata when registering records; meaningfully title records; consciously declare records; and create relationships between records in the EDRMS.

This in turn will assist users with information search and retrieval later from the EDRMS. So the managerial challenge for EDRMS professionals is to ensure users are receiving RM training as stated in Section 6 of ISO 15489-2 (International Organization for Standardization, 2002b). And that users' know what constitutes a record, the benefits in registering records into the EDRMS, and how it needs to be captured into the EDRMS to be meaningful.

- **MC4b – Induction and refresher training on working with the EDRMS**

Training enables users to understand the functionalities of the EDRMS software and use it productively to search and retrieve information. We observed all 4 organisations provided hands-on training for their EDRMS users. However, this training was limited to only searching using the metadata fields and did not include the classification scheme, as shown in Figure 3 in our earlier article (Singh, Klobas, & Anderson, 2007a, p. 156).

Furthermore, the training programmes had little focus on search and retrieval skills compared to other general functionalities on working and using the EDRMS.

Two of these organisations provided short refresher training focusing on specific functionalities in the EDRMS via half-



"Is it under ABC, or ABC Environmental Solutions?" The record titling problem.



hour training sessions. These refresher training courses were scheduled to provide users with opportunities to familiarise themselves again with training provided earlier during their induction.

The records managers acknowledged that there is a lot for users to learn and absorb when they first join the organisation. New starters are subjected to a number of new systems and induction programs in the modern organisation. Hence, the refresher training sessions are organised to provide EDRMS users the opportunity to refresh their skills working with the EDRMS after having settled into their job functions and worked with the EDRMS for a while.

EDRMS have design functionalities that give users fast and efficient ways to retrieve their frequently or previously accessed records. Such design functionalities enable users to save their frequent search criteria, access their recently searched records, and store their favourite records in their 'favourites' folders.

There are also design functionalities that enable refining, sorting, filtering search results in the EDRMS. However, only 7 out of the 30 users provided with this training reported using these functionalities to process their search results or to work more efficiently using the EDRMS. Again this highlights the importance of providing refresher training on working with the EDRMS and assessing users ISB characteristics periodically, to improve their search and retrieval skills.

- **MC4c – EDRMS training when major software upgrades are implemented**

In one of the organisations, a few of the users were trained initially when the EDRMS was implemented 5 years ago. These users did not attend the training sessions offered when major upgrades to the EDRM software were made over the ensuing five year period. These users displayed search techniques that were appropriate for the older versions of the EDRMS but were not aware of the new functionality available for conducting their searches effectively and efficiently.

We would recommend that EDRMS professionals make training mandatory when significant software upgrades are implemented so that users are aware of new functionalities in the system and are working efficiently using the new features in the EDRMS.

- **MC4d – Training and promotion of classification schemes**

As EDRMS practitioners, we have observed that training about the classification scheme helps users to formulate their search strategy by either:

- 1) using the metadata from the classification scheme, or
- 2) navigating and browsing through the classification scheme.

From our observations, we conclude that as part of the EDRMS implementation, EDRMS professionals need to ensure users are made aware of the classification scheme, have an understanding of how the classification scheme in the organisation works and how it is used to classify records stored in the EDRMS.

We suggest training should include explanation of the structure behind the classification scheme, that is, how it works by classification from the broader to the specific topic; and how the classification is structured, e.g., to classify by business function, then by business activity and then by the subject matter or topic, etc.

Given our finding that task drives ISB, we recommend highlighting to users specific keywords in the scheme relevant

to the work of their business unit.

Users need to understand the classification scheme not only for searching for information in the EDRMS but also for deciding where to file records when they register them into it. If they do not have an understanding of the classification scheme, they may misclassify records, leading later to difficulty or failure in information retrieval.

Twenty-eight percent of users in our study stated that the most difficult aspect of registering records into the EDRMS was completing the metadata field to describe where to file the record.

- **MC4e – Automating classification of records**

Another challenge for EDRMS professionals regards alternatives to traditional classification schemes. Instead of manually classifying information in the EDRMS, it may be preferable to use applications that automate the indexing or classification of information registered online.

Available applications include Interwoven's MetaTagger Software, and Autonomy's taxonomy generation. Autonomy's taxonomy generation feature can "automatically and consistently understand and create deep hierarchical contextual taxonomies of information based on conceptual understanding" (Autonomy, 2006a).

Autonomy currently offers ready-made taxonomies in the following disciplines: pharmaceutical taxonomy; defence taxonomy; homeland security taxonomy; enterprise taxonomies: human resources, information technology and sales and marketing (Autonomy, 2006b).

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Such automation promises to reduce human intervention and error, avoid misclassification, and ensure accurate and consistent classification, thus improving information seeking and retrieval from the EDRMS.

These developments challenge EDRMS professionals to evaluate the suitability of implementing these automatic classification options (will they really improve classification and information seeking?) and to persuade EDRMS vendors to incorporate these functionalities in their systems.

## CONCLUSION

Our research provides insight into the ISB search processes of EDRMS users which we hope will assist RMs in reviewing their records management programmes, especially in the area of provision of training to users.

None of the organisations at the time of the study was conducting training using online self-paced training modules for training users on records management concepts or on working with the EDRMS.

However, as practitioners we are aware of the trend to use online training modules increasingly in office environments. Research needs to be conducted to assess the effectiveness of these online training versus face-to-face training on working with the EDRMS.

Personally, we think the online training modules for records management concepts is effective provided it has assessments as part of the module to test the user and report that they have been successful or require to re-do the online training. However, we recommend face-to-face training on usage of the EDRMS. The online training modules on the EDRMS are best used as refresher tools for users to consult if they require assistance.

We would like to leave RMs with this final managerial challenge to chew on - should users' EDRMS accounts be activated if they have not attended both the records management and EDRMS training?

The organisations we studied did not report that RM and EDRMS training is mandatory and none reported not activating users' EDRMS accounts if training was not provided.

Given our observations of how users are searching and retrieving information from the EDRMS, we think RMs should be considering making both aspects of the training mandatory and should not activate EDRMS accounts for users who do not attend the training programmes in place in the organisation. Are you up to this managerial challenge? **iQ**



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