All four organisations studied have implemented functional classification schemes and thesauruses based on the Keyword AAA (Accuracy, Accessibility, and Accountability; KAAA) or the Keyword for Councils (KFC) schemes.

Classification Scheme/Thesaurus

Three of the four organisations have implemented the KAAA thesaurus developed in 1995 by the State Records Office of New South Wales (NSW). The KAAA is a keyword thesaurus of general EDRMS based on the keyword classification method. It covers administrative terminology common to most government organisations and ‘is constructed to reflect an organisation’s business functions and activities as they are documented by records’, (Robinson and Knight n.d.).

KAAA and KFC use a structured hierarchy of keywords, activity, and subject descriptions: keywords are allocated to describe broad business functions; activity descriptors describe business activities; and subject descriptors are used to describe subjects or topics that connect related business transactions (State Records New South Wales, n.d.).

One organisation implemented the KFC, an adaptation from KAAA for local government councils. Similar to the KAAA, the KFC is a thesaurus designed for use in classifying, titling and indexing all council records in all technological environments (State Records New South Wales, n.d.).

The functional KAAA thesaurus is uploaded using the thesaurus modules of the EDRMS in two of these organisations. In the remaining two organisations, the thesaurus is uploaded using a third party software. In one instance the thesaurus is integrated with the EDRMS, and in the other it is not.

None of the RM professionals in the four organisations consider the training of users on the use of the classification scheme as an information retrieval tool to be a requirement, as they had the following perceptions:

1) the classification scheme is a RM tool to group records for destruction, something that users are not interested in knowing about,
2) users only want to know the file number into which they should be filing their information and are not interested in gaining an understanding of the classification scheme,
3) users only search using the metadata fields, not the classification scheme, and
4) users are aware of the Free Text part of the classification scheme, and these are the terms they are likely to use when searching.

Figure 4 explains the search tools users have at their disposal for information seeking in the EDRMS and how the RM professionals use these tools for their RM tasks. It shows how users only have one search and retrieval tool made available to them, namely metadata. In comparison, RM professionals have both metadata and the classification scheme as search and retrieval tools.

The classification scheme is not perceived as a tool which, as stated in section 4.2.2 of ISO 15489-2 (International Organisation for Standardisation, 2002) organises and groups like information, links interdisciplinary records so as to enable sharing of information within the organisation, and provides improved access, retrieval, and use of records in the organisation.

Exon, in her RMAA conference paper and article from 1997, points out that the ‘major purpose of thesaurus has always been as an aid to efficient retrieval’ (Exon 1997).

Hence, although the thesaurus and classification scheme are...
implemented in the EDRMS in compliance with RM principles and practices, training on how to use it is not provided to users in three of the four organisations. Thus, users did not know how to work with and use these retrieval tools for their information search and retrieval in the EDRMS.

Organisation C provided training on the classification scheme to users, but users still found it hard to comprehend the logic used to classify information. The following quotes from users in Organisation C verify their views and work experience using the KAAA

Director Information Manager.

“Cumbersome, unclear to the novice, complex when it could be much simpler.” Secretary & Records Focal Point.

“I kind of, I don’t know, I neither like it nor dislike it in the sense of it’s a Classification system […] I don’t find it intuitive but I guess I’ve grown to accept that it must have some sort of logic.” Director Human Resources.

“I mean it’s Keyword AAA, which I don’t know if it’s one of the great classification schemes that are around, but it makes sense I think to the person that put it together. Sometimes it doesn’t really make sense to me.” Director Information Manager.

“Look, I can understand the logic, I guess it’s different to how we used to file things, and there are occasions where putting stuff on particular files doesn’t seem logical in EDRMS of how the structure’s been arrived at. And also there are situations where stuff doesn’t quite fit and you’re almost, you try and find terms that are close to what you think is the right term, and you put stuff there, and again, you know, there is the concern that you know, it’s fine today probably fine in a week, but in 12 months time if you had to find the same document, you may struggle. Look, again, you can always search on the document title if you can remember a particular term that related to the document, but if you knew not a lot, and you know, sometimes you might, I think you might struggle to find particular things.”

Director Information Manager.

The thesaurus module is integrated in the EDRMS for three of these organisations. However, these organisations did not make users aware of either the thesaurus or the classification scheme, and none of the organisations promoted the classification scheme as a search and retrieval tool.

“I know there might be an article in the Western Australian about the prices of land increasing, this sort of thing, do you put it under ‘valuer general’?, do you put it under ‘land tax’?, do you put it under ‘advice’?, do you put it under ‘media’? […] And you know, depending on what perspective you’re approaching it from I might look at it from a different perspective as someone else but we could possibly both be right, you know what I mean.” Team Leader, Land Tax.

The thesaurus module is integrated in the EDRMS for three of these organisations. However, these organisations did not make users aware of either the thesaurus or the classification scheme, and none of the organisations promoted the classification scheme as a search and retrieval tool.
Thus, users relied heavily on using metadata for searching, but this is not always the most effective or efficient search method. It explains why 68% of users relied on searching by the document or record title metadata field. It also explains users’ frustration when documents and records are not titled meaningfully, as verified by their quotes:

“Probably searching for other people’s documents. […] Because they don’t Title them correctly. […] So brief Titles, abbreviations, just Titles that I wouldn’t call something, so I find it hard to find others.” Training Consultant.

“That people haven’t put the right information in the Title Word. That they’ve used acronyms, or they’ve used their interpretation of what it is. They haven’t, they’ve omitted information. A good example of that is that I’ve just recently been given access to search for some of these electronic, the scanning of bills that I get, but they haven’t put the account number in the search, so I can’t search on the account number. So it’s usually the information in which it was recorded was poorly, inconsistent.” Manager Communications, Systems & Technology.

“People aren’t consistent in their titling, nor are they thoughtful in their titling. I don’t believe that they give it enough thought and don’t use the principle that in ten years time when this is no longer current nor relevant in the workplace will somebody be able to find this by the Title that I’ve described.” Admin Officer, Risk & Compliance.

As Figure 4 indicates, classification schemes are aligned to the RDS and thus the retention periods of records actually drives how records are classified and thus drives the classification scheme.

This results in classification schemes that fragment the grouping of records by retention periods using the activity descriptors in KAAA and KFC, instead of grouping like records together. This, in turn, makes the classification scheme less intuitive in relation to how users work and think of retrieval using the EDRMS, thus making the classification scheme the least preferred information seeking characteristic of EDRMS users:

“The classification structure is probably one of the last ways I’d use of finding things. As I said before you know, going to that File Plan, tree structure to find things, I’d use that after I’ve tried a couple of other different ways of finding things.” Director Human Resources.

We observed that users need to be made aware of the classification scheme not only for searching information in the EDRMS but also for registering information into the EDRMS. During the registration process, users need to decide where they are going to file their records, and if they lack an understanding of the classification scheme, they may misclassify records.

This leads to difficulties or failures when seeking information in the EDRMS, not to mention premature destruction of records. About 28% of the users commented that the most difficult metadata field for them to complete is the ‘File Number’ field.

These users asked if this metadata field could be removed from the registration screen. Three users admitted to taking the easy option of registering records into the EDRMS by classifying their records into the recently used folders displayed in the pick list of their registration window.

This again indicates the ambiguity and lack of understanding of how the classification scheme in the organisation works. The quotes from users verify their difficulty in identifying where to file the record:

“I don’t (search for containers) any more, I just use the ones that I use all the time.” Manager Communications, Systems & Technology.

A participant highlighted that his colleagues do not file information pertaining to a particular government agency by what business function had been performed for the agency. Instead, they picked one business function and filed all information regarding the agency into the one single folder in the EDRMS.

“Analysts are not, if they do work for a particular agency, they are not filing it by whether it’s ADVICE agency, whether it’s BUDGET agency, whether it’s CAPITAL WORKS, OPERATING EXPENSES agency? They tend to just pick one area, maybe ADVICE and put even the BUDGET there?” Secretary & Records Focal Point.

“Look, the most difficult is not so much searching for information, it’s again going back to just trying to find the right file to put it on. Sometimes it’s relatively easy, other times, as I say, it can be painful and difficult, and again there has been more than one occasion where there’s just, it just doesn’t quite fit the File Plan, and you say, oh, no, this, is you’ve got to add something or something, or you’ll put it somewhere where it looks like it will fit, knowing full well if you don’t find this thing in the future, you’re going to struggle, but you just sort of hope it’s never, you never have to come back to it.” Director Information Management.

Retention and Disposition Schedule

All the organisations have a corporate RDS developed, approved and implemented in the EDRMS to sentence records stored in the EDRMS. The retention periods are assigned at a folder level when new folders are created and this retention period is cascaded to all the contents filed within the electronic folder.

Thirty-eight users stated that they are not interested in the retention periods for records when seeking information in the EDRMS. They have been informed, and are satisfied with that knowledge, that retention periods are applied to records and they will be consulted prior to the destruction of a record by the records section.

Two of the 40 users stated that the retention period is important to them as they handle sensitive information that needs to be retained for a longer period of time, and also because they usually search for historical information and need assurance that the information will be retained for a long time. These two users stated that they checked the retention periods assigned to some records whilst seeking information in the EDRMS.

Security

All the organisations have comprehensive security models implemented in the EDRMS that ensure that only authorised personnel access information. Information can only be deleted by the Records Section and not by general personnel. Apart from organisation B, the rest of the organisations do not have their EDRMS security model documented.

The users are aware that there are security settings implemented in the EDRMS to ensure that access is provided only to authorised personnel in the organisation and within business units. They have a general understanding that they have access to information stored in the EDRMS that belongs to their immediate business units and projects or committees with which they are involved.

We observed that users have little understanding of the details of security settings using ‘caveats’, record or document types implemented in the EDRMS.
Training
All the organisations provided RM and EDRMS training to their users during the implementation of the EDRMS or employee induction programs. All the EDRMS training provided to the participants was face-to-face hands-on training sessions in classroom style settings, with users having access to individual PCs. The training lasted two to five hours.

The training programmes covered a range of topics: configuring the EDRMS, registering documents via check-in/check-out functions, workflow processes, searching, and working generally with the EDRMS. None of the four organisations provided training on the use of the classification scheme implemented in the EDRMS for searching and retrieving information from the EDRMS.

See Figure 3 (February 2008 IQ, page 54) on the types of EDRMS training provided to users and the section titled ‘The Effect of Training on ISB’.

Monitoring and Auditing
The organisations have monitoring and auditing processes in place to check on the quality of the data being entered into the EDRMS. The Records Section performs these tasks. Any misclassification or inappropriate document titling is followed up with users for remediation. If users do not adhere to the remediation actions, it is escalated to the line managers for action. If this fails, in organisation D, the issue is flagged to the Audit Department for follow-up.

Discussion
We observed that all four organisations have implemented the pillar RM principles listed in Table 1 (November 2007 IQ, page 39) and that their information management practices in the EDRMS does adhere to records management principles and practices.

The only variations of the RM principles between the organisations are in the implementation method in the types of policies, procedures, classification schemes, retention schedules, and training materials the organisations have developed.

The organisations have implemented RM policies and procedures that are endorsed by senior management in their organisations. The RM documentation outlines that records created and received by the organisations are to be managed according to records management principles and practices.

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Overall, the RM professionals perceived the EDRMS implementation in their organisations to be successful. However, as could be expected, there is resistance to the EDRMS from some user groups.

Our assessment of how the RM principles and practices used to manage records in the EDRMS interfaces with the ISB of EDRMS users is presented next.

Stage 1: Starting Search
The RM policies set precedence in mandating the role and use of the EDRMS in the organisation. If there are policies in place that state that the EDRMS is the corporate repository for records, then users will use the EDRMS to register their records and will know that the EDRMS is the tool to use for seeking records. Thus, they start their information seeking in the EDRMS.

A number of users stated that they use the EDRMS in their organisations because it is the mandated corporate repository for records. Likewise, the RM procedures, standards, and guidelines, provide the guiding principles for users on how to use the EDRMS and what to expect from the RM infrastructure in the organisation.

The training materials for RM and use of the EDRMS form part of the RM procedures. This documentation also establishes the framework for the ISB of EDRMS users.

Stage 2: Formulating Search Strategy
Three key RM principles affect this stage of the ISB pattern: 1) metadata standards, 2) classification scheme, and 3) training. Findings indicate that the most common and preferred ISB for EDRMS users is searching using metadata elements.

However, none of the four organisations studied have prepared a formal metadata standard documenting adherence to metadata standards such as the NWS Recordkeeping Metadata Standard (State Records New South Wales 2001), Recordkeeping Metadata Standard for Commonwealth Agencies (National Archives of Australia 1999), or the Dublin Core Metadata Element Set (International Organisation for Standardisation 2003).

However, all four organisations have implemented metadata elements in the design of the EDRMS, and they use different record type attributes to capture relevant metadata for the specific record type.

Findings also indicate that users are not using the classification scheme to conduct their information seeking in the EDRMS. All four organisations have developed and implemented the KAAA or the KFC thesauri.

It is interesting to discover that although records managers place importance on this tool when classifying information, its usefulness for searching and retrieving information is not passed on to users.

None of the four organisations promoted or trained users to use their respective classification schemes to seek information in the EDRMS in the way that they have done concerning the use of metadata fields.

Only a couple of the 40 participants displayed any understanding of the classification scheme or used it when searching the EDRMS. On the contrary, they preferred to use metadata elements to search. This could be because of lack of training and promotion on using the classification scheme to search.

Stage 3: Executing Search
This stage is not applicable to RM practices for the management of records.

Stage 4: Processing and Evaluating Search Results
The RM principles of metadata standards, classification schemes, and training impact this ISB pattern. Training on using the EDRMS functionalities, such as filtering, sorting, and refining the search
results, will enable users to process and evaluate their search results.

Awareness training on the different record types and their associated metadata fields and classification schemes will enable users to perform better at this stage of their information seeking.

Stage 5: Accessing Search Results
Apart from the RM principles of training and security permissions, none of the other RM principles influence this ISB pattern. Security permissions are important as they determine what records users are authorised to view and/or make changes to.

Having access to a record will enable users to launch it and then finalise decisions on the search results by scanning and verifying it. The lack of access will prevent the user from launching the record and thus render impossible the next stage, ‘Making Decisions about Search Results’.

Users were not asked about how they handled the information once they found it in the EDRMS, but it is theorised that users will either VIEW or PRINT the item, TAKE A COPY of it, or CHECK-OUT the item for editing.

Stage 6: Making Decisions about Search Results
The RM principles influencing this ISB pattern are: 1) training, 2) security permissions, and 3) monitoring and auditing. Training provides the skills to scan and verify the contents of the records and decide if it matches the information being sought. Security permissions enable users to access the documents and make decisions on search results.

Without the right security permissions, users will not be able to access the information they are authorised to view, and consequently they will make poor decisions given their limited access to all the information that should be available to them.

Monitoring and auditing RM practices ensure good content integrity in the EDRMS, and thus enable users to make efficient decisions about their search results.

Stage 7: Ending Search
This ISB pattern is influenced by the following RM principles: 1) procedures and standards, 2) training, 3) security permissions, and 4) monitoring and auditing. RM policies and/or procedure documentation will provide an indication of what information should or should not be stored in the EDRMS.

If information that should be stored in the EDRMS is in fact registered in the EDRMS, it will be possible to retrieve it and close out the search rather than ending the search. The delivery of training programs, implementation of security permissions, and regular monitoring and auditing by RM professionals will influence users’ decision to either STOP or CLOSE their search.

Conclusion
Is the ISB of EDRMS users consistent with the way information is managed according to RM principles and practices in ISO 15489?

EDRMS systems in these organisations have been designed to adhere to records management principles as stated in ISO 15489 in order to meet regulatory compliance and for evidentiary purposes. In theory, the RM best practices advocated in ISO 15489 are consistent with the ISB of EDRMS users.

EDRMSs designed using this standard will provide users with the option to search and retrieve information using both the metadata elements and the classification scheme.

Having studied the ISB of EDRMS users and having compared it to how records are managed in the EDRMSs in our case study, we conclude that there is a partial match between the ISB of EDRMS users and how the organisations have implemented the standard to manage records in the EDRMSs. The RM tools that assist with search and retrieval are the metadata elements and the classification scheme.

In our case study, we found that EDRMS users preferred to seek information using the metadata elements to retrieve records from the EDRMSs. However, the metadata elements pertaining to ‘classification’ terms is not used, nor preferred as a search option.

Participants do not use the terms in the classification scheme, such as the keywords or activity descriptor metadata elements, when they conduct a metadata search to seek information from the EDRMS.

A handful of users (30%) reported navigating the tree-view folder structure using the classification scheme to seek information. The classification scheme presented in a thesaurus form via the thesaurus module is not being used as a retrieval tool in the EDRMS either.

In view of how classification schemes are currently being used, which does not include an implementation as retrieval tools, we recommend that RM professionals consider, and perhaps implement, the strategies presented in the following paragraphs so as to overcome this potential limitation.

Firstly, conduct in-depth training on how to use the current classification schemes, whether it is the KAAA or the KFC. This is achievable by devoting a segment in the RM induction programme to this topic. The training needs to ensure that users have a working understanding of the classification scheme and know how to use it successfully to register information in the EDRMS.

Promote the use of the classification scheme as a retrieval mechanism in the EDRMS and train users how to conduct searches using the classification scheme.

We suggest that training includes an explanation of the structure behind the classification scheme; the scheme works by classification from the broader to the more specific topic, and the classification is structured to classify by business function, then by business activity and then by the subject matter or topic, etc.

Given our finding that task drives users’ ISB, we recommend highlighting to the users the specific keywords in the classification scheme that their business unit will be working with often.

This will provide users with familiarity of the classification terms relevant to their tasks, thereby providing them with the confidence to search for information at broad subject levels by using terms in the classification scheme.

Our findings also indicate that training modifies the IISS (Individual Information Seeking Style) of EDRMS users. Hence, incorporating training on the classification scheme would lead to users making use of the scheme as an information retrieval tool.

Secondly, modify the classification schemes used in the organisation, such as the KAAA or the KFC, so that they become “user friendly”. We believe that this can be achieved by making the classification schemes intuitive to the users’ way of thinking by removing any ambiguity from the classification scheme and aligning it to meet the users’ work processes so that it is meaningful for them to work with in the EDRMS.

RM professionals may want to consider Exxon’s comment regarding the use of ‘activity descriptors’ in these classification
schemes: ‘The use of activity descriptors as the second level in all file titles places in an important position in the file title terms which are often not helpful for retrieval purposes and which add very little to the total effective meaning of the file title as a description of the content of the file’, (Exon 1997, 20).

In her article, Exon comments that the way classification schemes are structured with an ‘emphasis on functional analysis has been to the detriment of efficient retrieval’, (Exon 1997, 19).

We agree with Exon’s comment on the need ‘to bring back into records management a commitment to precise retrieval at the level of the document’, (Exon 1997, 21).

She continues, ‘and begin to emphasise post-coordinate retrieval’ (Exon 1997, 21), but given that it has been ten years since Exon’s article was published, the new design and search technologies available today in EDRMSs makes it irrelevant whether post-coordinate or pre-coordinate indexing is used in the EDRMS. It is now possible to type in terms in the classification scheme, regardless of the citation order, by using Boolean logic search options and retrieve all records with the same classification.

It is not the aim of this research to focus on the effectiveness of the KAAA or the KFC, but the findings reveal that users in the studied organisations have difficulties working with these tools. Hence, we recommend that future research be conducted on how users retrieve records using these tools (see the section on ‘Future Research’).

Thirdly, develop a separate ‘user friendly classification scheme’ to be implemented in the EDRMS that is intuitive and aligned to the users’ work processes and thinking patterns. Then, RM professionals can align the ‘user friendly classification scheme’ to the underlying RM classification schemes, such as the KAAA or the KFC, in order to work out the retention periods for records in the background.

Alternatively, bypass the KAAA and the KFC and just use the RDS to sentence records. If the latter approach is taken, then the ‘user friendly classification scheme’ has to be aligned to the RDS.

Either way, the less user-friendly version of the RM classification scheme will be hidden from the users’ view in the same way the RDS is. In this way, the users will have a classification scheme that they can relate to and work with in order to register and retrieve information successfully in the EDRMS.

Our observations of how users search and retrieve information from the EDRMS also suggest that users would like to browse by navigating down a tree view folder structure if they already know where the record is filed or if they have filed the record themselves.

Hence, when designing the EDRMS it is important to provide users with the option to browse visually to retrieve records via the tree view folder structure as well as to search by using the metadata search in a ‘virtual database’ design.

Future Research

Many of the findings of this research indicate that training is a key issue in improving the effectiveness of EDRMSs for users.

We suggest that future research examine training in more detail. Research that identifies users’ IISS prior to training and compares post-training search strategies with the preferences expressed as the IISS would help to confirm the role of training in the ISB of EDRMS users. In particular, it would be interesting to understand if training on using classification schemes for searching the EDRMS has any effect and, if not, why.

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In general, further research on the value of the classification schemes and thesauri seems warranted, particularly given the predominance of metadata searching among EDRMS users.

Focused research on organisations that have implemented the KAAA and the KFC and the users’ experience of working with these RM tools is required to ascertain the value of these tools for classification and retrieval.

Research on whether RM professionals are expecting too much from the classification scheme/thesaurus tool is worth embarking on as well. The KAAA and the KFC tools enable RM professionals to sentence, classify, assign accountability and security, and conduct audits of the RM program. Are these RM tasks preventing these tools from being good mechanisms for information search and retrieval for users?

A number of other user studies could be pursued. For example, why do some users fail to use EDRMSs or use them only in the most cursory way, even when the RM principles, training plans, senior management support, qualified resources, and other factors believed to encourage system use are in place?

Finally, our research did not directly study user satisfaction with EDRMS, but such research – particularly where it compares different EDRMSs and their acceptance among their users. [Exon, Maggie (1997). “Contemporary Recordkeeping: The Records Management Thesaurus.” Informaa Quarterly 13.4: 14-22.]


