

applied infoKit



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EDRM System Implementation Toolkit

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Step One – the invitation to tender

The first section to be completed is the invitation to tender (ITT). This should invite tenders for a single contract covering the provision of an EDRM or Enterprise Content Management solution and associated supplier services for the whole education organisation or a defined subset of the institution. It should make it clear that the solution will be implemented in phases and that there will be some review points and potential termination points defined. Failure to meet certain defined criteria at those points could result in the termination of the contract by either party.

Format of responses

The ITT should define the format and content of responses/tenders. Generally you should ask the suppliers to respond to each section of the ITT and Statement Of Requirements in order and maintain the strict numbering used in the ITT and SOR documents. This makes it easier to check whether the supplier has replied to every requirement. This means you have to uniquely identify each paragraph and many institutions opt to provide a compliance grid which suppliers need to complete. This grid lists every paragraph in the ITT and Statement of Requirements and indicates whether it is a mandatory; highly desirable or desirable requirement and then invites the supplier to respond with a Yes/No or requires bespoke work answer and comments in a comments column.

When comparing 6 or 8 responses to a detailed document it is vital to impose rules to avoid ambiguity. In particular you should provide very clear instructions on how you want the supplier to respond to the price schedule so you have a clear set of costs and can compare the responses.

The ITT will request details of the bidding parties. You need to be clear who the prime contractor is in the event of a joint bid.

Responsibility for costs

You should make it clear that you take no responsibility for costs incurred by suppliers in responding to the tender and you need to specify clearly what format the tender should be provided in, who it should be sent to at what address and what the final delivery date and time is. Clarify that tenders delivered after that time and date will be returned unopened.

Scope of contract

You should then summarise the scope of the contract. This will include the two core requirements for an EDRM/Enterprise Content Management solution and associated supplier services and should detail which sections the functional and technical and service requirements are detailed in. It should define the phases of the implementation and the preferred timetable if you have agreed it.

You should define any matters that are beyond the scope of the contract. It may be that you want to notify suppliers that you are excluding a managed service bid where the supplier takes over the running of the system. It may be that you are excluding an area of the education organisation.

Procurement process and evaluation criteria

You then need to outline how the procurement process will run from the sending of ITTs to short listed suppliers to the selection of the preferred supplier. You may decide to run an open meeting where suppliers can come and discuss the requirements and the procurement process with the

project team.

You should arrange a clarification process whereby suppliers can submit questions about the ITT and SOR and the team will issue written responses. You then need to indicate in general terms the criteria you will use to evaluate the tenders received, this is usually based on a mix of technical merit; costs and quality. You can provide more details and give an indication of priority.

If you intend to create a second shortlist of 2 – 3 suppliers at this stage you should indicate that. If you require a presentation or demonstration from the short listed suppliers at that stage you should make that known and if you require reference site visits you should make that known as well.

Terms and conditions

Most importantly, you will want to include in an appendix a standard set of contract terms and conditions for the project if you have them. You may either require all bidders to simply accept them if they are standard terms you use for all IT procurements or you may invite suppliers to signal whether they will accept them and if not to indicate any specific clauses which they would want to change. However, here you need to be careful to avoid protracted negotiations. If you do not have them you should take advice from your procurement section or from consultants including the Office for Government Commerce.

Step Two – background to the requirements

Section two – the first section of the SOR – is designed to present to suppliers the background and business context. You need to describe the business and statutory role of your education organisation. A brief history of the education organisation and a review at a high level of the key functions it performs and its mission statement or vision for the future.

You should describe the current organisation – the central administration departments; the faculties or schools and how they are divided up into departments plus other departments/services and companies owned by the education organisation etc. For each department you should specify the full time staff establishment and the locations they operate from. All the information you need here should have been gathered in stage three.

You then need to describe the current policies, procedures and systems used to manage content, documents and records including e–mail. Do you have an archive service? Do you have a semi–current records service? Do you use commercial offsite storage services? Do you have any Electronic Document Management systems? Do you have a Web Content Management system?

You should provide volumetrics including the volume of paper records held; the volume of electronic documents held; the volume of e–mails held. You should list the software applications used to create content and documents across the education organisation and include any planned new systems.

You should then review the business objectives identified for the EDRM or Enterprise Content Management solution including all your record keeping objectives.

Finally you should present in detail your current IS strategy and ICT infrastructure. This should include a review of any corporate standards for hardware and software, current supported environments and planned future direction. You should detail all the corporate IT applications including your student administration system; your finance and human resources systems; your Web content management systems; other core databases. You should also list all the main departmental IT applications.

This data is important to enable the suppliers to understand the scope and culture of your education organisation and your preferred IT platforms. It will help them to scope the roll out requirement and challenges.

While there is a considerable volume of data to be gathered – most of it should have been gathered as part of stage three so the amount of effort required at this stage should not be too demanding.

Step Three – the functional requirements

Stage one of the toolkit provided a review of the market and a table with a checklist of functions and facilities that you might require under the top–level headings of:

- Input
- Management
- Output
- Collaboration/business process management

At stage three you should have carried out detailed information gathering and analysis tasks or have had this done on your behalf by a consultancy. In stage four you should have reviewed the options and your requirements and selected the preferred approach.

You now need to detail your functional requirements under those high level headings to ensure that the supplier or system integrator you finally select and contract with is capable of meeting all your key requirements at a cost you can afford.

Background and assumptions

Incorporating the TNA Requirements

In stage one, step three of the tool kit we referenced best practice and requirements standards. The National Archives 2002 "Requirements for Electronic Records Management Systems" provides ten sets of core requirements and three additional sets of optional requirements. They cover almost all the ERM requirements you could have but only some of the Electronic document and content management requirements you may have. They cover some but by no means all the input and output requirements you may have and they cover hardly any of the collaboration and business process management requirements you may have. The ten core requirements and three optional sets of requirements are as detailed in the table.

	Core requirements	
A.1	Record organisation	Classification scheme and Fileplan
A.2	Record capture, declaration and management	Capture, declaration, record types, record metadata, move, copy, extract and relate, bulk import.
A.3	Search, display and presentation	Searching; Display; Presentation
A.4	Retention and disposal	Disposal schedules definition, allocation, execution; resolving conflicts, review, export and transfer and destruction
A.5	Access control	Access to ERMS; access control and markings; user profiles; roles; groups; allocation of access control to classes, folders and records; custodian; execution of access control markings; privacy and opening of records
A.6	Audit	Audit

A.7	Reporting	Reporting
A.8	Usability	Usability
A.9	Design and Performance	Integrity, Interfaces, Disaster recovery, Storage, Performance, Scalability
A.10	Compliance with other standards	Optional requirements
B.1	Authentication and encryption	Electronic signatures; Electronic watermarks; encryption
B.2	Document management	Document management
B.3	Hybrid and physical folder management	Physical folders; markers; retrieval and access control; tracking and circulation; disposal.

This poses some questions when it comes to assembling your full statement of functional requirements. Do you split up the TNA requirements and include them in your set? Do you simply ask the suppliers whether they are compliant with the TNA requirements and then not reproduce them at all or do you include the TNA requirements as one sub section of your functional requirements and then cover the additional requirements under the four headings of Input; Management; Output and Collaboration/BPM?

We favour keeping the TNA requirements together as a sub section of the Management section and referring to one or more of the thirteen sets of TNA requirements where relevant from other sections as outlined below.

The situation on supplier approval may well change significantly after this toolkit was produced in June 2004. At that time there were only six suppliers approved by the National Archives and some 15 plus suppliers were thought to be in the process of applying for approval.

With only six approved you would be restricting your choice significantly if you mandated that suppliers must be TNA approved. An alternative approach is to include the TNA requirements in your SOR in section three sub section – management – and to produce an overall compliance grid that covers all the requirements in the SOR including the TNA requirements. You then ask suppliers whether they have been formally approved by the TNA.

If they have then you ask them to simply indicate on the compliance grid any of the TNA requirements they did not meet and what they intend to do to try and meet them in future. [This is because a supplier can be approved by TNA even if they do not meet some of the optional requirements].

If the supplier has not been formally approved by the TNA then you should require them to respond to every TNA requirement in the grid and indicate whether they are compliant or not and if not what they intend to do to meet that requirement in future.

If you are reading this toolkit in 2005 and there are 10 or more suppliers approved by the TNA then you may decide to mandate that the supplier's software has been formally approved by TNA. They list approved suppliers on their web site.

One other important standard relating to metadata is the e-GMS (Government Metadata Standard). This lays down the elements, refinements and encoding schemes to be used by government officers when creating metadata for their information resources or designing search interfaces for information systems. It is reviewed as part of the "management" section below.

Assumptions

Before we get into the four functional categories we should list some assumptions here. We look at metadata and what metadata needs to be held and what standards and guidance there is under the "management" category. Under "Input" we look at techniques for capturing metadata.

We have assumed that the solution will be TNA compliant and will also provide additional active electronic document and content management facilities Hence you will need to agree a classification scheme/Fileplan with your supplier and the supplier will set up the required classes and folders and folder parts on the system to comply with your requirements.

We have assumed that at the class and folder level you will use the TNA metadata standard as the baseline. We have assumed that you will need to add additional user fields at the folder level.

We have assumed that at the document and record level you will use the TNA metadata standard as the baseline for declared records. We have further assumed that you will want to use additional metadata to manage active documents while they are under workflow/ business process management control and because you have additional requirements.

Summary of requirements

You are recommended to start with a high level summary of the requirements. As you get into the detail the document becomes bulky and complex. It is useful if at any stage you can go back to the start and see the overview. You should define the high level functions under the four headings of:

- input
- management
- output
- collaboration/business process management

You should also define the phases of the preferred implementation plan and assign departments and user numbers to each phase. You should then point to where additional requirements are defined for each function and phase. We generally define the overall functional requirements first and then the specific requirements for each phase.

Input requirements

The input requirements we identified in our check list in stage one are as follows:

	Function	Description
1	Input	
1.1	Electronic capture	
1.1.1	Electronic content/ document capture	Facility to capture electronic content/documents created via standard office software applications
1.1.2	Electronic document/data capture	Facility to capture electronic documents/data created via line of business and other business administration systems
1.1.3	Electronic forms	Facilities to design electronic form, publish form, capture data via form, validate data according to business rules and load data into application and capture image of form if required
1.1.4	E-mail capture	Facility to capture e-mails and attachments and manage them as documents/records
1.1.5	Content transformation	Capture of content and editing/conversion of content into format suitable for Web publishing

1.1.6	Import of electronic content/documents held as single files	Facility to import text documents; XML documents; spreadsheets; e-mail messages; PDF documents; document images; vector graphics etc
1.1.7	Import of compound documents as a single record	Facility to import multimedia documents; CAD files; directly interlinked documents; sessions from collaboration systems etc
1.2	Analogue capture	
1.2.1	Scanning and digitising analogue content	Facility to scan and capture digital image and key in metadata
1.2.2	Scan and digitise and text capture	Facility to scan and capture digital image and recognise and capture textual content
1.2.3	Scan and digitise and forms processing	Facility to scan and digitise and analyse image data – recognise that image contains image of a specific form side template and then process structured form image to extract data from fixed positions on template
1.2.4	Scan and digitise and semi structured data capture	Facility to scan and digitise and process semi-structured form image for data capture
1.2.5	Scan and digitise and raster to vector	Facility to scan and digitise map or design and convert to vector data for processing
1.3	Metadata capture	Facility to enter metadata and associate metadata with a document/content file to facilitate control and retrieval
1.4	Categorisation	Facility to classify content/documents into categories based on content/rules
1.5	Declaration as a record	Facility to define status of document to be a record at input stage or any subsequent stage so it is then managed as a record

Electronic capture

At a high level the National Archives (TNA) – A.2 record capture, declaration and management – requirements cover all the above electronic capture (1.1) requirements so you should refer to those in your SOR. You then need to define as many specific examples of each of your electronic capture requirements as possible to be certain that they are supported.

You should list all the main software applications used to create content/documents that will be saved on your system. You should list all the main line of business systems that will create data/documents to be saved on your system. You should list any electronic forms packages used by your education organisation that need to be interfaced with the solution.

If you are including a Web Content Management module in your procurement then you need to list the applications used to create Web content, web pages and web sites and to edit and transform existing content prior to publication.

Analogue capture

The National Archives A.2 requirements also refer to the fact that the system must be capable of importing images from a scanning or capture subsystem. However the TNA requirements do not specify the detailed requirements for a document capture subsystem. Hence, for the requirements listed in the checklist under (1.2) above, you need to decide how many of them you need at each phase of implementation and specify your requirements in more detail.

For scanning and digitising you need to indicate the size and type of documents you need to scan. We would always recommend specifying A3 scanners rather than A4 to cover any larger formats. If

you have large maps and plans to scan then you need to consider large format scanners or decide whether you will send those documents off site to a bureau for scanning.

You need to consider whether you can set up one centralised scanning facility adjacent to the post room or whether you will need to support distributed scanning. If you move to a centralized scanning solution you need new procedures. Instead of staff from departments coming down to collect their post they need to come down and supervise post opening and scanning. You need procedures for handling payments, official documentation that needs to be returned to sender; junk mail; mail containing printed publications which may also be available in digital format etc.

If you opt for distributed scanning you may incur high software costs for each scan station and you will need to train a larger number of staff and supervise staff in several locations. One option is to provide distributed scanning facilities but all scanned images are routed to a single input queue where they are checked and first level indexed by central staff and routed back to the relevant departments.

You need to decide whether you want colour, greyscale or black and white scanners; whether you scan all documents double sided or selectively single or double sided. In most cases you will need a combination of flatbed scanners and rotary scanners. Flatbed scanners require some manual feeding of documents but can scan a wide range of document types. Rotary scanners can feed standard sets of documents automatically from a stack.

You then need to decide whether you want additional facilities apart from just image capture. The first is text recognition. The advantage of this is that if you scan the image of a document only then you have to index it manually which is labour intensive. You cannot search the full text of that document. If you go on and use recognition software to identify text characters in an image and code them then you can search on the full text of the document as if it was a word-processed document. The problem with this is that text recognition is not one hundred percent accurate. Most users will need a text recognition facility but they will also need the ability to switch it off for certain categories or batches of documents. If you are scanning valuable reference documents then you will use text recognition and clean them up. If you are scanning in invoices or handwritten correspondence you will switch it off.

The second option is paper forms processing. If you design forms, send them out to customers to enter data and send back to you and you then need to capture data from the forms and load it into a database and also keep a copy of the forms as evidence that the customer did order a specific service or answer yes to a specific survey question etc then forms processing can be a valuable facility. You need high volumes of forms – at least 500 per day – to make it worthwhile and you need to be capturing a significant volume of data from the forms. You also need to be in control of the forms so you can design them and print them in a format optimised for scanning. Institutions sending out high volumes of questionnaires may consider this option. Increasingly, where practical institutions are looking instead at electronic forms for customers to complete via the Web but in many cases you need to provide both options. Increasingly student administration is using electronic forms but if you still need to support paper forms in volume then consider forms processing.

The third option covers the automatic capture of data from uncontrolled forms. These are typically forms sent in by third parties such as invoices, direct debit mandates etc and you have no or little control over the layout or design of the form. This makes automatic data capture more difficult but there are packages that can do some intelligent capture.

The final option is the specialized case where you are scanning maps or plans or design drawings and once you have captured a digital image you want software to recognize graphic symbols such as arcs and curves and polygons etc and carry out raster to vector conversion so the symbols can then be processed in a graphics package such as a CAD package. Normally this would not be done routinely as part of a post scanning operation. This would be conducted as a post processing

exercise in areas such as Estates or in departments that use GIS packages.

Metadata capture

Prior to loading any documents onto your system you need to define the classification scheme and the metadata to be captured at the class, folder, folder part, record/document and content component level to the system. If you are employing a thesaurus of subject terms you also need to define that by loading the data into the system.

TNA core requirement A.1 defines the functional requirements for loading and holding metadata at the Class; Folder and Folder Part level. It provides guidance on how folders should be managed as well.

TNA core requirement A.2 defines the requirements for record capture, declaration and management. This involves declaring a record and placing it in one or more folders and hence classifying it. It also then defines the metadata that should be captured for each record and some rules relating to how records and associated metadata can be imported in bulk.

The choices for capturing metadata are either to key it in manually which is labour intensive and prone to error or to try and automate the process by loading existing metadata if it does exist or by capturing metadata from the document/record itself when it is created/capture/declared to be a record.

As indicated in section on Background and assumptions above, in an active document and content management system with collaboration and business process management support there will often be a need to capture additional metadata relating to content/documents which is not mandated by the TNA requirements. This will include data needed to control the status of incoming documents or newly created content as they are moved through a defined business process plus additional data needed to uniquely identify documents and link documents with line of business applications etc.

Your information gathering and analysis in stage three and your survey of existing systems in stage four should have enabled you to identify areas where you need to capture additional metadata for specific document types. We look at how that data is managed in the next section below.

Where index data is vital you may need to ensure that it is accurate by adding in validation steps. If the solution is integrated with a line of business application then that can be achieved by checking data held in both databases and reporting anomalies. Even within the EDRM system you can build in look up tables of allowed terms etc and compare data entered against these. In other cases you can ensure that the data has to be entered twice by different operators and compared.

Categorisation

The ideal world for all users of EDRM and Enterprise Content Management systems would be that they could set up their classification scheme and folders with controlled subject term values and then as they scan in incoming documents or save newly created electronic documents the software would analyse the content and simply categorise or classify the content automatically – filing it away in the relevant folder.

For this to happen you have to firstly use recognition software to capture the text of scanned document images and that, as we have seen, is not one hundred percent accurate. You then need to provide a set of rules which the software can use to categorise the content.

So at present it is not a case of making it a mandatory requirement that the solution can automatically categorise all documents. However, it is well worth asking the suppliers what categorisation facilities they can support. As part of stage one it is well worth reviewing the

offerings of the main document capture subsystem suppliers in this area.

Declaration as a record

Finally, for an EDRM solution, for all the various content input facilities described above we want the facility to either declare the content/document to be a record at the same time as it is captured or at some subsequent stage in its life.

The TNA core requirement (A.2) Record capture, declaration and management covers these requirements in detail and should be referenced in your SOR.

Management

Once we have captured the content and documents and declared a subset to be records the next step is to manage them. Here we divide up the management functions into generic electronic document and content management facilities and electronic records management facilities which also include facilities to manage physical records. You should include the TNA requirements in this section under ERM requirements.

The management requirements we identified in our checklist in stage one were as follows.

	Function	Description
2	Management	Electronic content, document and records management
2.1	Electronic content and document management	Electronic content and document management functions
2.1.1	Electronic content and document management	Manage documents as single electronic files in a repository
2.1.2	Electronic content and document management	Manage compound documents comprising container documents and component content files in a repository
2.1.3	Electronic content and document management	Manage the links between content components and container documents in a repository
2.1.4	Electronic content and document management	Assign metadata (index data) to documents/content objects and register each document/content object in the repository.
2.1.5	Electronic content and document management	Manage metadata in relational databases
2.1.6	Electronic content and document management	Index full text of content in a full text engine to facilitate full text retrieval
2.1.7	Electronic content and document management	Management of controlled thesaurus of terms
2.1.8	Electronic content and document management	Provision of mass storage facilities including hierarchical storage management if required and content addressable storage if required.
2.1.9	Electronic content and document management	Mandatory provision of check out and check in facilities so document/content object cannot be overwritten – it can only be copied and then amended and checked back in
2.1.10	Electronic content and document management	Mandatory provision of version control facilities to ensure that edited document can only be checked

		back in as next version of same document or as new document
2.1.11	Electronic content and document management	Control access to metadata, content, documents via access control markings, roles, groups, etc
2.1.12	Electronic content and document management	Provide audit trail of transactions on documents
2.1.13	Electronic content and document management	Solution must meet specified reporting requirements – all transactions on documents
2.1.14	Electronic content and document management	System must support minimum usability requirements
2.1.15	Electronic content and document management	System must be resilient, must maintain integrity of content objects/documents, must meet minimum performance requirements and must be scalable.
2.2	Electronic records management	Support TNA requirements as detailed below
2.2.1	Record organisation	Classification scheme, classes, folders, parts and components
2.2.2	Record capture, declaration and management	Declaration and management of records including metadata
2.2.3	Retention and disposal	Disposal schedule definition; allocation and execution; resolving conflicts, review and destruction
2.2.4	Hybrid and physical folder management	Physical folders; markers, retrieval and access control, tracking and circulation; disposal
2.2.5	Authentication and encryption	Electronic signatures and electronic watermarks and encryption

These requirements ensure that you can manage both simple and compound documents in your content repository. You would be able to manage content and XML or HTML or SGML mark-up and structured metadata and the full text of the content.

For an ERM solution the TNA 2002 Requirements for Electronic Records Management Systems comprises the following:

- Section one contains the ten core and three optional sets of functions requirements as detailed above which should be inserted in this sub section of your requirements.
- Section two is the metadata standard and contains an introduction to the metadata requirements and a review of each of the metadata elements.
- Section three is the reference document and contains a glossary of terms and among other sections a flat listing of all the metadata elements to be held at the class; folder; folder part; record and component level.

It is well worth reviewing briefly here the core metadata requirements and what you will need to agree with the suppliers at the specification stage. The metadata requirements are summarised and truncated here. You need to read the TNA documents to see the full specification.

Class Metadata

TNA numbering	Metadata element
1	Identifier. System ID
2	Identifier Fileplan ID

3	Title
4	Subject
5	Description
6	Date Opened
7	Date Closed
8	Relation. Parent object
9	Aggregation
10 – 11	Rights protective markings and descriptor
12	Disposal schedule ID
13 – 15	Mandates

Folder Metadata

TNA numbering	Metadata element
1	Identifier System ID
2	Identifier Fileplan ID
3	Title
4	Subject
5	Description
6	Date Opened
7	Date Closed
8	Date Cut Off
9 – 12	Relations
13	Aggregation
14 – 15	Locations – home and current
16 – 32	Rights
33 – 47	Disposals
48 – 50	Mandates

Part Metadata

TNA numbering	Metadata element
1	Date opened
2	Date closed
3	Date Cut Off
4	Relation. Parent object

Record Metadata

TNA numbering	Metadata element
1	Identifier System ID
2	Identifier Fileplan ID

3	Title
4	Subject
5	Description
6	Creator
7	Date created
8	Date acquired
9	Date declared
10	Addressee
11	Type. Record type
12 – 17	Relations
18	Aggregation
19	Language
20 – 36	Rights
37 – 51	Disposals
52	Digital signature
53 – 55	Mandates

Component Metadata

TNA numbering	Metadata element
1	Preservation. Originating format

If we look at the description of the records management metadata elements provided in the TNA document we find the following.

The "Identifier System Id" will be a code allocated by the system at the class; folder; part and record level.

The "Identifier Fileplan ID" is the reference derived from the classification scheme or fileplan. This is an accumulation of information inherited from higher levels of aggregation in the fileplan. The example cited by the TNA is that of an area of a hierarchical Fileplan concerned with data protection issues (under code DTZ) at the next level "regional office notifications are coded 004 and the identifier for West Midlands region is 047. Then the Fileplan ID for the second folder part on the West Midlands region is – DTZ/004/047/002.

In education organisations you will need to use the Functions Activity Transaction model expounded in the JISC "record life cycle report" to build a functions based classification scheme that would provide the required fileplan codes here.

The "title" field for the folder or class can be implemented as a natural or controlled language equivalent of the Fileplan ID where that is the naming convention in force. At the record level the title is more likely to be implemented as a free text title.

The "subject" field is reserved for keywords or phrases describing the subject content of the resource. Mainly applies at folder and record level. This is where institutions would benefit from an agreed thesaurus or controlled subject list. The Government Category List is used by central government and the Local Government Category List at Local government level.

The "description" field is to be used for additional data that may be more helpful to some users than the subject, title, Fileplan ID when searching. The "creator" field is the author in the case of internal documents but in the case of incoming documents the "Creator organisation" may be all the data

available.

The "addressee" field is the person or persons to whom the record was addressed.

The "type" field applies at the record level. For TNA records purposes this centres on the need for DPA compliance. The default record type should determine the behaviour of almost all records.

For active document and content management additional metadata may need to be held including additional document type data and status data. You will need to gather initial additional indexing requirements at the information gathering stages – particularly for the pilot applications.

The e-GMS (Government Metadata Standard) defines a list of optional and core metadata elements as listed in the table.

Number	Metadata element	Comments
1	Accessibility	Indicates the resource's availability and usability to specific groups
2	Addressee	The person (or persons) to whom the resource was addressed
3	Aggregation	The resource's level or position in a hierarchy
4	Audience	A category of user for whom the resource is intended
5	Contributor	An entity responsible for making contributions to the content of the resource
6	Coverage	The extent or scope of the content of the resource
7	Creator	An entity primarily responsible for making the content of the resource
8	Date	A date associated with an event in the life cycle of the resource
9	Description	An account of the content of the resource
10	Digital signature	To be decided
11	Disposal	The retention and disposal instructions for the resource
12	Format	The physical or digital manifestation of the resource
13	Identifier	An unambiguous reference to the resource within a given context
14	Language	A language of the intellectual content of the resource
15	Location	The physical location of the resource
16	Mandate	Legislative or other mandate under which the resource was produced
17	Preservation	Information to support the long term preservation of a resource
18	Publisher	An entity responsible for making the resource available
19	Relation	A reference to a related resource
20	Rights	Information about rights held in and over the resource
21	Source	A reference to a resource from which the present resource is derived
22	Status	The position or state of the resource
23	Subject	A topic of the content of the resource. Refinements include category; keyword; person; process identifier; programme and project,
24	Title	A name given to the resource
25	Type	The nature or genre of the content of the resource. Encoding schemes include – DCMI Type and e-GMS Type Encoding Scheme (e-GMSTES)

If you read the document it provides controlled lists of values for each element where applicable. The e-GMS TYPE encoding scheme provides a very useful list of values for the Type element (25) above. You can add or delete terms as appropriate.

Accounts	Act of Parliament	Agenda
Annual report	Article	Bill
Briefing note	Budget	Business plan
By-law	Call for expressions of interest	Call for papers
Case notes	Circular	Command paper
Committee report	Complaints document	Consultation paper
Contract	Correspondence	Dataset
Diary or calendar	Directive	Discussion forum
Environmental impact assessment	Form	Green paper
Home page	House of Commons paper	House of Lords paper
Image	Instructional	Invitation to tender
Invoice	Job advertisement	Job description
Map Minutes Mission statement		
Newsletter	Organisation chart	Parliamentary Question
Physical object	Plan drawing	Policy
Presentation	Press release	Proceedings
Programme	Project document	Promotional
Public notice	Purchase order	Questionnaire
Reference	Report	Rules
Scottish Executive paper	Scottish Parliament paper	Service level agreement
Software	Sound	Specification
Speech	Staff appraisal	Staff directory
Standard	Statistics	Statutory guidance
Statutory instrument	Submission	Terms of reference
Treaty	Video	Website facility
White paper	XML schema	

The final details of the metadata requirements and other management requirements are usually agreed with the preferred supplier at the specification stage.

Output

The reason we invest in capturing and indexing content and documents and managing them is so that when required we can search for and retrieve and reuse and publish the content and documents.

The requirements we identified in our check list in stage one were as follows.

	Function	Description
3	Output	
3.1	Search	Facilities to search all metadata; search full text content; save searches; present search results
3.2	Display	Facilities to display all content/documents/records captured and managed on the system irrespective of whether the application used to create them is present or not.
3.3	Presentation	

		Facilities to present metadata and records to applications outside the solution in a form suitable for electronic publication
3.4	Print	Facilities to print all types of content, documents and records which are printable in same way as they are displayed on screen
3.5	Facsimile	Facilities to output content/documents to facsimile format and transmit it to defined facsimile numbers.
3.6	E-mail	Facilities to attach content objects/ documents held in the solution to e-mail messages and send them to specified e-mail accounts
3.7	Portal	Facilities to search and display content/documents held on the solution from within a named portal.
3.8	Multi channel content delivery/ publishing	Facilities to publish specified content to specified delivery channels using defined style sheets etc
3.8.1	Print publishing	Facilities to publish specified content to print media using defined style sheets etc.
3.8.2	CD/DVD publishing	Facilities to publish specified content on CD/DVD media using defined style sheets and software
3.8.3	Delivery to mobile phones	Facilities to render content in format suitable for display on mobile phone screens using defined style sheets and software
3.8.4	Delivery to PDAs	Facilities to render content in format suitable for display on PDA screens using defined style sheets and software
3.8.5	Internet/intranet/extranet Web site publishing	Facilities to render and publish specified content to specified Web sites using defined style sheets and web publishing software
3.8.5.1	Web site development	Facilities to define and develop web sites using web content management software
3.8.5.2	Develop web applications	Facilities to develop web applications using Web content management software
3.8.5.3	Develop web pages	Facilities to develop specific web pages for use on a web site using Web content management software
3.8.5.4	Check links	Facilities to check and maintain the integrity of all links made on a web site.
3.8.5.5	Content approval	Facilities to route content through an agreed approval process using web content management and business process management software.
3.8.5.6	Support multiple Web site deployments	Facilities to publish content to multiple web sites and synchronise process.
3.8.5.7	Content personalisation	Facilities to customise content delivered to a searcher based on profile gathered of searcher

Requirements (3.1 to 3.3) are covered in TNA core requirement (A.3). You may need to specify additional facilities to meet your active document and content search, display and presentation requirements.

Requirements (3.1 to 3.7) cover basic search, retrieve, display and output requirements.

Requirement (3.8) covers content delivery/publishing requirements that will require the content to be held separately from the delivery process and involves defining by the use of style sheets how the content should be rendered and presented to suit the specific requirements of different delivery/publishing mechanisms.

Collaboration/Business process management

The final area to cover in your requirements relates to how you need staff to work together to create documents and process transactions.

The requirements we identified in our check list in stage one were as follows.

	Function	Description
4	Collaboration/Business process management	
4.1	Collaboration	
4.1.1	Calendaring/scheduling	Shared diary services for scheduling events, meetings etc
4.1.2	Whiteboarding	For freehand drawing and pen-based writing on handheld computers, tablets etc
4.1.3	Instant messaging	Real-time text based peer to peer communications over the Internet
4.1.4	Presence detection	The ability to see if others on a pre-selected list – are online concurrently
4.1.5	e-learning	An online education or training programme that can be on demand or set to a pre determined date and time
4.1.6	Knowledge management	Makes the institution's information and knowledge available to all wherever it is based – includes portals and other search tools
4.1.7	Digital asset management	Supports, storage, retrieval and reuse of digital objects and provides rights management facilities
4.2	Workflow/Business process management	
4.2.1	Business process modelling and building	Business process design and build tools to graphically model and redesign business processes and define them to the workflow engine
4.2.2	Business process management	A workflow/business process management engine which holds the business rules and controls the flow of each case or transaction through each step of the workflow/ business process
4.2.3	Business process administration	Tools for administering the workflow/business process including reporting and monitoring tools, audit tools etc

As indicated in stages one and four you need to decide whether you want to procure a collaboration suite as part of your EDRM or Enterprise Content management procurement or whether your education organisation already has a preferred collaboration suite which your solution will need to interface with or whether you consider that at this stage you do not need a separate collaboration suite at all.

If you already have a collaboration suite then one of the challenges you face is trying to ensure that content and documents created on the collaboration suite can be tracked and declared and managed as records on the EDRM solution when required. The danger is that if you leave it up to staff to decide when they should transfer documents and content from a collaborative environment to an EDRM folder then it may never happen and records will be deleted.

Your education organisation will definitely need workflow/ business process management facilities but you need to consider again whether you wish to procure those as part of the EDRM solution or the Enterprise Content Management suite or whether you wish to purchase a third party workflow/ business process management tool or whether you already have access to such tools via your line of business applications.

The detailed requirements for workflow/business process management will come out of your analysis of business activity and your detailed review of current processes, particularly in your pilot areas. Some detailed questions to ask include:

- Can the system record the temporary absence of staff to prevent work being allocated to them?
- Does the system support sequential, parallel and conditional routing?
- Does the system support split and rendezvous functions?
- Can you use the system to prioritise tasks?
- Can the system assign work to a user inbox based on user workloads?
- Can the software provide progress reporting for individual cases?

This is an area where you need to be sure that you are acquiring the toolkit and the training needed so that in future your IS staff can design their own business processes and routing systems.

Scope of each phase

The requirements listed above will indicate the type of solution you need and should ensure that the solution you procure is capable of meeting your overall requirements.

However, you then have to ensure that your reseller or integrator is capable of building on the platform to deliver the solution you require at each phase of the implementation plan. The first step is for you to clearly define in the Statement Of Requirements the scope of each phase and the specific requirements for each phase.

In stage four we had agreed upon a seven–phase implementation plan as follows:

- Specification
- Model office
- Pilot/s
- Initial roll out
- Secondary roll out
- Corporate application development
- Support

Specification and Model Office

Phases one and two can be covered together. Phase one involves the preferred supplier working with your team to specify exactly how they will deliver the core solution required to meet your requirements as outlined above. Phase two involves the preferred supplier working with the project team to set up a small model office configuration running on up to six PCs on a dedicated network with scanning and printing facilities. You need to make it clear that one of the objectives will be a formal acceptance test that will need to be detailed as part of the specification. Most important will be the acceptance criteria. You also need to make it clear that it will be used to provide selected users with the opportunity to be trained on the system and to test the user interface, etc. This will translate into some service requirements to be specified in Step Five below.

Pilot/s

Phase three is the pilot phase. It is assumed that you finally decided to operate just one pilot. You need to include in your requirements the department selected for the pilot, the scale of the pilot in terms of number of activities/ staff/ document throughput. You then need to specify in detail your input, management, output and collaboration/business process management requirements for that pilot.

Inevitably a pilot will involve creating some rather artificial barriers to some or all of the business processes in order to keep the scope manageable. These need to be defined. You need to indicate how long you want the pilot to operate for and you need to indicate what tests will be run at the end and what success criteria will be adopted.

Most importantly you need to define how you want to progress after the pilot which should include rolling the solution out to the remaining staff in the department.

You should also consider and develop a contingency plan in the event that the solution does not perform first time.

Initial Roll Out and Secondary Roll Out

The next phases cover the roll out. Again you should have defined in stage four whether you want to roll out in one, two or three phases. This should be based on a realistic assessment of the resources required to prepare for roll out, train the users, agree the folder requirements, switch the system on and provide floor walking support for two weeks minimum.

You need to specify the planned timetable and clarify roles and responsibilities. You need to define any specific integration requirements in each department and any special requirements such as backfile conversion or specific business process management requirements. They would be referred to here and detailed in the section on services below.

You would need to specify the location of all staff and refer back to section two of the SOR where you will have specified the IT infrastructure including network connections to specific buildings. You will need to refer to the number of staff in each department as well. You will need to specify your requirements for scanning in the roll out phases – centralised scanning or a mix of centralised and distributed to meet specific departmental requirements.

Corporate Application Development

This phase assumes that the roll out is complete and all staff defined as within the scope of the EDRM solution have now been trained on the system and provided with the core functionality.

It is assumed in stage four that you would start to redesign and implement some corporate business processes on the new platform in stage six. These could include policy making and committee administration; the processing of invoices; student administration; collaborative research applications; capital project management; curriculum development; correspondence and complaints handling etc.

In the SOR you should indicate that it is your intention to address corporate business processes in phase six and invite suppliers to indicate what experience they have in that area and what skills they could call upon to assist in phase six and what value they could add. You should also ask for indicative costs in terms of fee days required to specify and implement the required solutions. You would not commit yourself to go forward but would leave yourselves with the option of asking the preferred supplier to bid for such a service at the end of phase five.

Support

This phase assumes that the project has been shut down and you are now supporting the solution as a key ICT application. In the SOR you need to declare that you envisage the project closing down at this point and any services you will require from the supplier. These would be specified in the services section below.

Step Four – the technical requirements

Section four should contain your key technical requirements designed to ensure that the solution fits on your current and planned IT infrastructure and can be supported by your current ICT department with their skill set.

We also recommend summarising in this section all the volumetric data you have been able to gather albeit with some caveats. Volumetrics are useful because although they are unlikely to prove completely accurate they can provide a set of assumptions and a baseline against which the suppliers can quote. Once the preferred supplier is selected and the project moves on then you can refer to the assumptions and baseline figures and use those to agree the actual costs for a specific number of users in a specific phase. It also enables you to accurately compare the costs of the different suppliers you are evaluating.

User numbers

The key volumetrics to start with will be the number of users for each phase of the project and an indication of the roles and responsibilities. These figures should be as detailed as possible for the model office and pilot and indicative for the roll out phases.

Examples of some of the roles and responsibilities will include:

- Operators (scanner operators)
- Users with read only access
- Users with create, edit and save rights
- Records management staff who can create folders
- Supervisors/team leaders
- Managers
- System administrators

A difficult calculation to make is how many users will be online and active on the system at any one time. The figures will be relatively high for administrative staff and then lower for academic staff who may be lecturing etc at various times during the day.

Storage volumes

You should also try and calculate your input and storage volumes. Specifically you need to define your scanning requirements for phases two and three and give indicative figures for the roll out phases. You also need to indicative figures for the numbers of e-mails and new electronic content objects/ documents that may be input into the system for each phase or on a yearly basis.

Existing hardware and software

The next area to cover is the existing hardware and software that the solution will be required to run

on or integrate with. You need to ask the suppliers to specify the minimum desktop hardware and operating software specification that their solution is designed to operate on and the recommended specification to achieve good performance.

For the model office you will probably be procuring new hardware and software so you can purchase it to the supplier specification. For the pilot in particular you need to detail the desktop hardware and software that staff currently use and ask the supplier to confirm that the solution will run on the desktops or whether upgrades will be needed. For the roll out you need to indicate the range of desktop hardware and software currently in use and use supplier responses to calculate any required upgrade costs.

If it is the policy of your ICT department that all new desktops must comply with a minimum hardware specification and must run a core set of software then this should be specified here.

You need to specify the current e-mail/messaging system and provide volumetrics. You need to provide details of the current network showing the bandwidth available to staff in all the main buildings. You should specify the numerous ways in which staff are allowed to gain access to network services including remote users.

You should also include details of any specialist hardware peripherals that will need to be interfaced to the solution. These could include existing scanners and large format plotters, facsimile servers etc.

New hardware to be specified

The next area is hardware which you require the supplier to provide as part of the solution or at least to specify. The two main areas here are the server or servers which the solution will run on and any specialist scanning hardware required.

Servers and storage subsystems

The servers will be standard servers but it is useful to ask the suppliers to specify them and particularly for the preferred supplier to specify the server/s as part of the specification exercise. Your education organisation can then purchase the hardware if that is more cost effective.

This also applies to the storage subsystem required to manage the content and document files and the metadata. You may wish to use an existing corporate storage solution or you may wish to use a dedicated solution for EDRM. It is well worth asking the suppliers for their recommended storage solutions.

The suppliers should be asked to specify the servers and storage solutions based on the volumetrics provided; the resilience requirements and the performance requirements as detailed below. You will then have a baseline against which they can be modified at the specification stage if new facts come to light.

If it is the policy of your ICT department that mission critical corporate applications should run on a particular range of supplier hardware or on specific operating system software then these requirements should be specified here.

Scanners

You need to specify your scanner requirements here based on your overall document capture subsystem requirements as specified above in the functional requirements section.

You would normally expect to set up a single A3 scanner as part of the model office and to set up a local scanning and document capture subsystem for the pilot. You have a choice of rotary or flatbed and colour or black and white. You need to agree the daily throughput requirements and you also need to specify one or more PCs with a high resolution screen for controlling the scanner; quality checking; indexing and saving. If you have low volume throughput you can carry out all these functions on one PC. As the volumes increase you will need more than one PC to conduct those tasks.

For the roll outs you need to include indicative scanner requirements again based on your overall document capture subsystem requirements as specified above in the functional requirements section. If you have opted for a centralised solution then you will want to specify two or more scanners to provide resilience rather than one high volume scanner so that if one goes down you have a back-up. You may be able to specify one rotary and one flatbed scanner with the rotary designed for speed and the flatbed designed to cater for mixed document sizes and multi-page documents plus damaged documents.

If you need a large format scanner you need to decide whether you need an A2, A1 or A0 scanner and again whether colour or black and white.

Performance

You need to specify some minimum performance requirements here. You are procuring a corporate EDRM solution which means that once it is fully implemented all administrative staff and many academic staff will be using the system every day to create and retrieve and use content and vital documents and records. If the performance of the system is poor then you will not achieve the business benefits that you require from the solution and ultimately the project will fail. Hence high performance is an important requirement.

However, it is a difficult requirement and contractually it is hard to put all the risk onto a supplier as they will be implementing their solution on your networks and your desktops. Hence if the system does not meet its performance targets it can be difficult to attribute blame or, more importantly, identify the solution.

In you SOR you should therefore be very clear about your requirements and how you expect the supplier to mitigate as many of the risks relating to performance as possible.

Firstly you should define a set of performance requirements which the system should meet for searching the metadata and then retrieving and displaying a document. You will need a number of variations of this requirement to cater for users on the same Local Area Network as the EDRM server; users accessing the system across a WAN and users accessing the solution remotely across a phone line.

Then you should specify that the supplier must firstly test the core solution on their own development or testing environment. This will be an ideal environment as there will be no other applications operating and no other traffic across the network. If the solution cannot meet the performance requirements in this environment then it will not meet them on your network. Then you should specify that the supplier must also carry out the performance tests on the model office solution which is also on a dedicated network. This will highlight whether or not the supplier is using any acceleration facilities on their test environment which will not be available to you.

Then you should specify that the supplier should also carry out the performance tests on the pilot solution which will be on your network. As part of the specification stage you should have asked the supplier to survey the network used by the pilot users and to request any upgrades to the network needed to meet the performance requirements. The supplier will also want to list any assumptions they have made in terms of other applications running on the desktops etc.

For the roll out phases you should specify in the SOR that you will require performance tests to be operated and if the system does not meet the performance requirements the supplier will be required to research the causes and once they are agreed you and the supplier will be required to address any system failings or IT infrastructure failings that are causing the system to miss its performance targets.

Addressing performance in the SOR can help mitigate many of the risks.

Resilience

It is equally vital that you specify some minimum resilience requirements. If the resilience of the system is poor so it is not available when staff need to access documents then you will not achieve the business benefits that you require from the solution and ultimately the project will fail. Hence high resilience is just as important a requirement as high performance.

However, it is also a difficult requirement and contractually it is hard to put all the risk onto a supplier as they will be implementing their solution on your networks and your desktops. Hence if the system does not meet its availability targets it can be difficult to attribute blame or, more importantly, identify the solution.

In your SOR you should therefore be very clear about your requirements and how you expect the supplier to mitigate as many of the risks relating to resilience as possible.

Firstly you should set a set of resilience requirements. The supplier should be asked to quote the Mean Time Between Failure rates for all hardware supplied. You should specify the hours and times when the system must be operational.

You then need to define the minimum acceptable availability levels for vital system components (failure means system is unavailable) important system components (scanners) and individual desktops. Failure of vital system components needs to be avoided at all costs as overall system availability rates need to be close to 100% for key office hours. This should be stressed in this section and suppliers required to provide a number of options providing progressively greater resilience at greater expense.

Resilience facilities that should be included in these options should include Uninterrupted Power Supplies for all servers; duplicated network cards; clustered database servers; mirrored content servers; high resilience storage technologies including RAID and other strategies for avoiding single points of failure on the system.

You need to make it clear to the suppliers that high availability is vital and you need to involve ICT staff to assess the options and select the best compromise between high availability and cost.

The preferred supplier should also be required to provide documented backup and archive and disaster recovery plans as part of the implementation specification phase.

Addressing resilience in the SOR can help mitigate many of the risks.

Standards

In section two you have summarized your ICT strategies and policies and standards. In this section you need to list mandatory or desirable standards for the solution to follow.

You may wish to mandate certain database standards or the use of specific database engines and versions if you have in-house skills in supporting and using them or if you regard them as more resilient than others for corporate applications.

Your education organisation may be generally committed to Microsoft de facto standards in which case you should state that and mandate that the solution is built on a Microsoft platform and designed to use all the core Microsoft components. Alternatively your education organisation may be generally committed to open source standards in which case you should state that and mandate that the solution supports the relevant standards.

You may wish to mandate support for mail interface standards; development languages, communications standards and application integration techniques. You may wish to mandate support for specified document/content formats and data interchange standards. Especially important here would be support for government interoperability standards including e-GMS (e-Government Metadata Standard) and e-GIF (e-Government Interoperability Framework).

You may wish to mandate that the solution must support all the facilities and procedures needed for your education organisation to comply with PD0008 the legal admissibility code of practice. You will clearly want the software to have either been approved by the TNA or to be compliant with the TNA 2002 Functional Requirements for Electronic Records Management systems.

Escrow

Given the importance of the EDRM solution to your education organisation you will also want to specify that the preferred supplier will be expected to ensure that the source of each software release will be lodged with an independent escrow organisation. This means that in the event of the software supplier ceasing trading you can at least gain access to the source code.

Step Five – the service requirements

In section five you need to specify the agreed mix of core and additional services which you require the supplier to provide.

The following represent a typical mix of core and additional services which you might require the preferred supplier to provide:

Service	Description
1	Project planning and management services. Includes working with project team and providing supply side project management and support.
2	Software customisation, implementation and testing services. The supplier should configure and install and test the software at all phases on the hardware purchased by you and attached to your network by you to ensure that the system provides all the required core functions and facilities. This includes loading the classification scheme/Fileplan onto the system.
3	Integration services. The supplier should provide integration services to integrate the solution with the desktop and with key line of business systems
4	Change management, training and documentation services
5	The supplier should provide software support and optionally specialist hardware support services for an agreed period of three to five years
6	Provide additional business process management services for individual departments
7	Provide additional integration services with business administration systems for individual departments or corporate applications
8	Provide backfile paper scanning and digitisation and indexing and loading services for individual departments

9	Provide additional data migration services – migrating e-mails onto the system; migrating electronic documents onto the system; migrating metadata from a paper records management system onto the new system etc
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Step Six – the price schedule

Section six should contain the overall price schedule.

We recommend using three tables. The first should cover all capital costs divided by phase. The second should cover all recurring revenue costs by year. The third should cover any optional capital costs by phase.

It is important that the capital costs table should be divided up by phases with all costs allocated to phases. This simplifies matters should you need to terminate the contract at the end of phase.

The first phase will be the specification phase and should only include service costs. The second phase will be the model office phase. The third phase will be the pilot phase.

Typical costs to be included in the table for phases two and three would include the following:

Phase three pilot costs
EDRM software licenses
Other software costs
Scanner costs
Server and storage costs
PC costs
Other hardware costs
Specification
Design and customisation
Installation and supplier testing
User acceptance testing
Project management
Training
Documentation
Other vendor services
Backfile conversion costs
Any other phase three costs
Total phase three costs

For phase four and onwards you would ask for indicative costs rather than firm costs. These would include fee day rates for all levels of staff.

Deliverables from stage six

After completing stage six of the toolkit you should be able to produce the following deliverables.

Overall detailed Invitation To Tender for an EDRM solution and associated services comprising:

Step	Deliverable
1 – 6	

	Overall Invitation To Tender for an EDRM solution comprising six sections – one produced in each step as outlined below
1	Invitation To Tender
2	Background to the requirements
3	Functional requirements
4	Technical requirements
5	Service requirements
6	Price schedule

Resources required to complete stage six

The resources required for stage six are not too demanding provided you have conducted stages one to five in full. It will take considerably longer to research and produce if you have not conducted the earlier stages in detail.

Step	Resource estimate(days)	Description
1	3	Project resource to produce section of ITT
2	4	Project resource to produce section of ITT
3	15	Project resource to produce section of ITT
4	3	Project resource to produce section of ITT
5	4	Project resource to produce section of ITT
6	1	Project resource to produce section of ITT
TotalSteps 1 – 6	30	

Tools to complete stage six

A spreadsheet and word processing package with an ITT template are the key tools for this stage. Otherwise no special tools are needed to complete this stage.

Frequently asked questions

Question:

Is there a standard template for an EDRM Statement Of Requirements that I can use?

Answer:

Not that we are aware of and it would be very difficult to produce as every education organisation's requirements will vary at the detail level just as their current IT infrastructure varies significantly. To help we have produced a high level template based on this stage which is attached and can be freely used by project teams. (LINK to ITT TEMPLATE)

Question:

How much detail should we provide in our Statement of Requirements?

Answer:

Within certain limits as much as possible. It is quite difficult for a supplier/systems integrator to understand your requirements. Unless you have visited all the suppliers beforehand this might be their first point of contact with you. Hence you should provide as much background data as you can in section two or at least provide links to documents on your Web site that provide that detail. You also need to provide a detailed set of functional requirements in section three if you are expecting the supplier to provide a fixed price bid for phases one to three and indicative costs for the roll out phases as well. If you do not provide a lot of detail then you will receive a lot of awkward clarification questions so at some point you will need to do the work. It is generally best to do the hard work at the start.

Question:

How do we gather accurate data on volumes of documents etc across a large education organisation?

Answer:

This is difficult and labour intensive. If you follow the DIRKS based information gathering methodology in stage three then you should gather most of the volumetric data you need. To back this up you should also be able to get figures on the volume of e-mails and electronic documents held from your ICT department if they have monitoring tools.

Question:

Where can we obtain assistance in writing a Statement of Requirements?

Answer:

This toolkit aims to provide you with advice and guidance on completing an SOR for an EDRM solution and provides a high level template. Your education organisation may have a standard template that is used for specifying IT solutions. Otherwise you are advised to call in an impartial consultancy who have experience of supporting EDRM procurements and a knowledge of the education community.

Hints and tips for stage six

1. Follow the six sections and the relevant headings provided in the outline template provided in this stage. Experience shows that all your requirements can be included in that format.
2. Do not to skimp on this stage. If you have worked through stages one to five you are in sight of the winning post now. Use all the data you have gathered to produce a clear and detailed Statement Of Requirements and you have then fulfilled a large percentage of your responsibilities as a project team. You can then move on to answer supplier questions and start the evaluation process. If you do not provide sufficient detail at this stage then you will need to do more work later on– answering clarification questions and having to go back to your notes at regular intervals.
3. Where you are uncertain about figures and do not have the time or resources to resolve the issues then go ahead and put down what you have with caveats and make it clear that they should be used by suppliers as a baseline on which to build their sizing and costing assumptions only. Specify that one of the required services you are procuring will be for the preferred supplier to work with you to agree more accurate figures which will form part of the specification.

4. Confine yourself where possible to specifying your requirements. Do not tell the supplier exactly how you want your requirements to be met. Leave some options open to the suppliers and let them tell you what is the best approach to meet your requirements. It is a fine line between being vague and being over prescriptive but if you focus on the requirements and leave the supplier to tell you how they will meet them then you should obtain the right balance.

Additional References and Case Studies

Design criteria standard for electronic records management software application (version 19, June 2002) US Department of Defense, Washington 2002. DOD Directive 5015.2.
<http://jitc.fhu.disa.mil/recmgt/p50152s2.pdf>

MoReq – Model requirements for the management of electronic records. CECA–CEE–CEEA. Bruxelles Luxembourg 2001.
<http://www.ispo.cec.be/ida>

Functional requirements for ERMS 2002. The National Archives.
<http://www.nationalarchives.gov.uk/electronicrecords/reqs2002/pdf/requirementsfinal.pdf>

For Project Management, as well as the [infoKit](#) the OGC PRINCE2 website has further details of the PRINCE2 project management methodology.
<http://www.ogc.gov.uk/prince/index.htm>

The OJEC website for details of EC procurement procedures
<http://www.ojec.com/>

The industry yearbook published by [Cimtech](#) provides a comprehensive list of all the main suppliers in each of the categories described in [stage one, step one](#). It also provides a detailed management guide to the subject. Electronic document, records and content management: a comprehensive guide to electronic document, records and content management and a directory of products and services 15th edition 2004 Cimtech Ltd, University of Hertfordshire, College Lane, Hatfield, Hertfordshire AL10 9AB.
http://www.cimtech.co.uk/Main/Pub_EDRCM.htm

The DIRKS Manual, Steps A – D
<http://www.naa.gov.au/recordkeeping/dirks/dirksman/contents.html>

BSI–ISO 15489 – 2001 – Information and documentation – records management. Standards. BSI Customer Services 389 Chiswick High Road, London W4 4AL
<http://www.bsi-global.com/>

For modelling and redesigning business processes there are a number of useful reference works available as well as the Process Review infoKit. The following are three which we would recommend.

- Dave Chaffey. Groupware, Workflow and Intranets. Re-engineering the enterprise with collaborative software. Digital Press. Butterworth Heinemann. ISBN 1555581846. <http://books.elsevier.com/marketing?isbn=1555581846>
- Thomas M Koulopoulos. The Workflow Imperative – building real work business solutions. Van Nostrand Reinhold. 1995 ISBN 0442019750.
- Rosemary Rock-Evans. Data modelling and process modelling. 1992 Butterworth Heinemann, ISBN 0750607394.

For guidance on the conduct of records audits, the design of business classification schemes and retention schedules you are recommended to visit the National Archives website. <http://www.pro.gov.uk/recordsmanagement/standards/default.htm>

Magazines which contain useful case studies describing how organisations have successfully implemented an EDM or EDRM system include the following:

Managing information and documents MiD. Infoconomy Ltd, 17–18 Margaret Street London W1W 8RP.

<http://www.infoconomy.com/>

Information management & technology. Cimtech Ltd University of Hertfordshire, College Lane, Hatfield, Hertfordshire AL10 9AB.

<http://www.cimtech.co.uk/>

Web sites that contain useful information on all aspects of EDRM include the following plus individual supplier web sites:

- <http://www.aiim.org>
- <http://www.cimtech.co.uk>
- <http://www.document-manager.com>

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