

Business classification scheme design

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Section 1: Introduction and overview

Context and principles of 'business classification scheme' design to achieve the 2004 target¹

The overall purpose of creating, using and managing records is to support the business of government.

The business needs of the organisation, the benefits which it expects to gain from a move to electronic working in EDRM, and other relevant external requirements on the organisation are the general determinants of the way in which records should be organised, and the means by which they may be accessed.

The EDRM system must support the business change process through which business benefits are delivered, by underpinning and enabling change in operational, administrative and service delivery systems.

The EDRM must support the change management process, supporting innovation and new ways of working, by delivering information to those who need it in the form required.

Business needs, for government organisations, include accountability. This can operate in the short term – through supplementing the resource discovery enabled by document level metadata (e.g. in response to FOI requests) – and in the longer term through the preservation of historical electronic records in an archive. Central government departments and agencies are required by the Public Records Acts to identify and safeguard records of historical importance and they shall be transferred to The National Archives not later than 30 years after their creation.

The organisation of records should also facilitate the early identification and description of those of archival value. In the electronic environment, this is essential to their long-term survival. Whatever the appraisal criteria, groups of folders in the classification scheme can be scheduled for transfer at either a higher or a lower level and migrated to successor systems including archival preservation systems. Classification scheme metadata captured with the records supports this by maintaining the original arrangement. It also supplements the resource discovery achievable through document level metadata with contextual metadata.

Business change and people change will together deliver the benefits set out in the business case which forms the justification for EDRM (although some of these benefits may be delivered at the wider programme level, rather than directly at the EDRM project level).

These identified business benefits must therefore broadly determine methods of record organisation and access.

¹ Although the achievement of the 2004 target by central government departments and agencies is the immediate context and driver for this guidance, many of the underlying principles will be of use and relevance to other communities, including local authorities.

External drivers from the wider environment include:

- requirements for corporate governance, including information governance
- compliance with information policy legislation: Data Protection, FoI, etc
- requirements for legal admissibility
- government standards
- international standards: BS ISO 15489
- cross-cutting developments within the public sector ('joined-up' government)

The business classification scheme and the actual folders (files) and records classified by that structure comprises what, in the paper environment, was called the 'fileplan'².

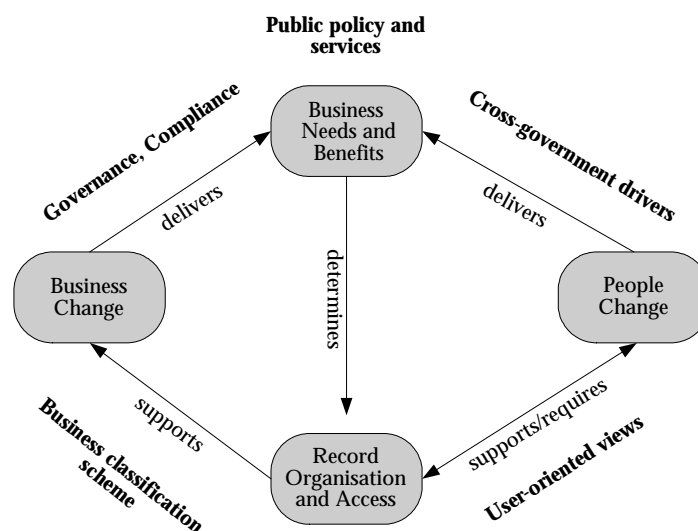
EDRM benefits realisation

Implementation benefits can be categorised in one of two dimensions:

- Corporate benefits, and
- User benefits

Requirements for corporate benefits suggest organisation of records by a formal business classification scheme, as required by BS ISO 15489: one integrated structure across the organisation, forming a single corporate memory.

Requirements for user benefits suggest organisation of records by views recognisable to the end users – who are many and various, and therefore have multiple user views – so that the records are highly usable, in an effective and efficient way attractive to the desk user facing immediate operational needs. This matrix is represented by the following diagram:



² This terminology is preferred for the simple reason that it has less 'baggage' from the paper environment and helps reinforce the significant differences emerging, including the analysis of the business prior to the consideration of records issues per se. See also "Definitions" at the beginning of Section 2.

These do not need to be incompatible: a modern EDRM system can support both aspects, within limitations as discussed below. Individual folders, or whole classes, within a business classification scheme structure can be re-arranged for presentation to a discrete number of users (for example, by integrating the EDRM folder structure with an Outlook folder structure which is supported in a number of proprietary solutions).

Limitations include:

- The level at which any re-arrangement takes place: it is not feasible to re-arrange records within folders, and there can only be a one-to-one mapping between folders in a business classification scheme and folders in a user view;
- the definition of corporate business rules for appraisal and disposal, which should be allocated at the highest level possible to reduce administrative burden, and which normally operate on the whole folder;
- the need to link with legacy physical folder structures, and to maintain hybrid folders (part physical, part electronic);
- the need for one organisation to integrate its record structures with those of other related organisations for purposes of access, management and disposal (for example, the single electronic case file scenario in the Criminal Justice System; integrated customer services supplied by more than one organisation).

Business classification scheme: intellectual structures

Commonly, the intellectual structures for a business classification scheme fall into four types (these are discussed in more detail in Sections 6 & 7):

Functional: Functions -> Activities -> Transactions

- The functions that an organisation carries out change less frequently than its organisational structure.
- As machinery of government changes move functions between organisations, it is easier to restructure corporate filing systems.
- A strict functional approach will not support case files well.
- Records managers like functional structures (management is easier); users do not understand and dislike them (because they are hard to use).

Subject / thematic

- Enables a more common approach across information systems: EDRM, websites, Intranets, etc.
- More easily recognised and understood by users, but...
- interpretation and understanding may vary considerably between user groups.

Organisational

- Familiar structure to end users, perhaps from the paper environment, but high maintenance and subject to frequent change.
- Continuity over time is difficult.

Hybrid

- Enables compromise between a strict purist approach and operational flexibility.
- For example: Functional at a broad level (with disposal rules mostly operating at that level), with subject-based sub-classes.

Key question of approach

The key question, discussed in more detail in the following sections of this guidance product, is: ‘What kinds of structures provide a satisfactory balance for a business classification scheme between stable corporate integration and effective management, and flexible response to changing user needs and effective use’?

These issues are explored in more detail later in this guidance.

National Archives Guidance: summary

The conclusion reached at the time of writing (Autumn 2003) is that a variety of approaches are valid and are probably necessary to support various permutations of these scenarios as Departments and Agencies are implementing Electronic Document and Records Management (EDRM) to meet the 2004 target. They should do this with a clear understanding of the ‘fit’ between their business needs and the implications of the various approaches, though – this is the first of a planned series of products to support this understanding.

It is possible at this stage to express a preference for the functional approach to be adopted at the highest levels of departmental business classification schemes. Resolving the issues that this raises (i.e. below those levels), a pragmatic approach to the construction of corporate business classification schemes is recommended across UK central government. This is in order to balance the interests of user involvement in EDRM implementations, wider business change programmes, organisations’ understandable desire to take advantage of the purist functional approach and the management of records systems including auditable, structured disposal in the age of Freedom of Information. Suggestions and illustrations of these concerns are in the remainder of this guidance.

Further products

As will be seen from the remainder of this guidance, producing a viable corporate business classification scheme requires significant engagement with stakeholders and the business of the organisation. For that reason, it is not possible to produce generic guidance that will enable all organisations to follow the same single route to producing their business classification schemes. Other products are planned by The National Archives to take a closer look at particular issues following more development work in those areas, for example:

- Further implications for appraisal³;
- Cross-sectoral working (as in the Criminal Justice System example already mentioned); and, perhaps:
- Life experiences/lifecycle of the individual citizen.

³ It is intended to adopt a synergistic approach to how this relates to an ongoing review of appraisal across the sector already begun in the Client Management Unit of The National Archives. A few of these initial findings have already been incorporated into Sections 3 & 6.

Section 2: Definitions

'Business classification scheme'

As already mentioned, a business classification scheme ['BCS'] is required by BS ISO 15489 and, together with the folders and records it contains, comprises what in the paper environment was called a 'Fileplan'. A 'BCS' is thus a full representation of the business of an organisation. As such, it is a useful method of organising information for purposes such as:

- Retrieval
- Storage
- More involved processes of (records) management, such as disposal scheduling.

In this guidance, the issues of creating and maintaining BCS for the purposes of managing electronic records are discussed. A number of these considerations apply whether the BCS structure is used to manage documents and records or just formal records⁴ but the stress in this guidance is on the latter⁵.

Some systems (including many proprietary document management systems, shared drive directories in either an 'explorer' or other folder view) can be used to manage documents effectively without the disciplines of a proper BCS⁶. This is insufficiently robust for the management of formal records of business activity.

A number of the concepts contained in this guidance are explained in full in the *Requirements for electronic records management systems* series of publications⁷ and *Management, appraisal and preservation of electronic records*⁸. They are generally not repeated here unless they require further articulation and explanation or updating.

National Archives guidance

1. Public records should be declared against a BCS structure to keep information *of like kind* together (see below);
2. 'Of like kind' can potentially mean any shared attribute;
3. Shared attributes in electronic records terms effectively mean common metadata values. From the *Requirements* series of guidance and issues discussed later in this guidance, it will be observed that consistent metadata application is one of the principal benefits and aims of the BCS concept;

⁴ For a discussion of the difference, see the *e-Policy Framework for Records Management*, 2001 accessible from <http://www.pro.gov.uk/recordsmanagement/erecords/e-gov-framework.pdf> and also <http://www.e-envoy.gov.uk>

⁵ The principles could, with some adjustment, be used to develop a BCS for paper records, but this is out of scope of the current product.

⁶ *Good practice in managing electronic documents using MS Office on a local area network*, accessible from: <http://www.pro.gov.uk/recordsmanagement/standards/default.htm>

⁷ <http://www.pro.gov.uk/recordsmanagement/erecords/2002reqs/default.htm>

⁸ *Ibid*; Volume 1: Principles 2nd Edition, National Archives 1998.

4. In practice the demands for context and retrospective interpretation/accountability of the records means that it is essential for the accountability of public business that it is possible to demonstrate how a decision was taken (including demonstrating the reasonableness of this process) by facilitating the tracking of the 'story' behind that decision. This means that the 'assembly' or 'arrangement' of the records (in terms of the containment of records within folders and the location of the folders on the BCS) needs to reflect this as in the paper environment;
5. A BCS is a virtual or logical construct rather than a physical entity. It has no role beyond the highly important and multifaceted one of aiding the various users of the system to interface with the technology whether their task is entering information into the system, managing it within it, or retrieving it from the system.

'Business Classification schemes'⁹

A BCS is only one method of classification. An organisation may have more than one method of classification for business activities, and may even have more than one BCS in place (see Functional requirement A.1.10). The BCS is principally important because it is:

- **The principal** classification used for the management of disposal¹⁰; and
- **An essential part of the interface** for the end user.

Retrieval of electronic objects from the electronic repository can be achieved in a variety of ways¹¹:

- Advanced/assisted retrieval techniques perhaps using Artificial Intelligence ('AI') and 'fuzzy logic';
- Advanced search techniques such as multiple query formulation and Boolean operators;
- Simpler search techniques on record content (text retrieval), metadata (at the record, folder or class levels of aggregation); or
- Browsing or searching the BCS using a graphical interface.

Paradigm technical architecture

The diagram on the following page is a graphical representation of how the comparison between the organisational and the user view(s) might be understood (note that it is a logical view and does not assume a particular technical solution).

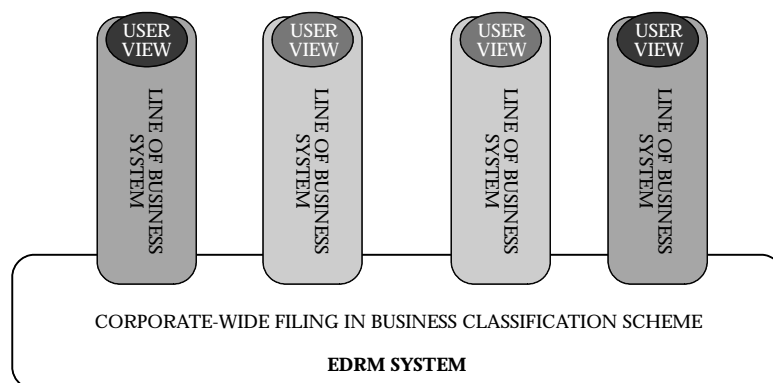
From the point of view of the end user, much of the time they will be working in a 'line of business' application, whether it be a standard office application or a bespoke system.

Records, as products of the business transactions, are brought under records management control at a point or 'node' in the [main] BCS. This is achieved by declaring them into a folder. Under this is EDRM functionality that manages the organisation's needs for disposal and other aspects of management. It is therefore desirable for its coverage to be as comprehensive as possible.

⁹ The terminology used in this guidance is consistent with that present in the functional requirements for ERM and contained within the glossary in the Reference document, part 3

¹⁰ This issue is fundamental: it is the corporate view arising from an agreed policy and a retention schedule that must determine the disposal and this 'view' must take precedence over other 'views', such as individual users' saved searches

¹¹ The storage of electronic objects in the electronic repository, and referencing of electronic objects to the business classification scheme, are not affected by the retrieval method chosen.



The 'organisational' view is a corporate view designed to manage the corporate memory and business risks. It may also be used – through an appropriate interface – for retrieval by end users. Support for cross-cutting retrieval is important to reduce the 'silo' mentality of much public business in the past.

The end user's view of the business classification scheme

Storage of objects in the repository through the process of record declaration requires a lot of the end user. Steps have been taken by suppliers in systems design and by the National Archives in the definition of the Metadata standard accompanying the *Requirements for ERMS* to simplify the ordinary end user's task (i.e. in how to declare a record) and concentrate their mind on the decision whether to declare or not. Typically this consists of selecting a BCS location and choosing a record title (or perhaps editing one already present in the document prior to its declaration as a record).

This is demanding of the end user, still more so if the initial rollout of EDRM is also accompanied by the type of information management requirements that are arguably required to achieve the maximum benefits of the new technologies present in an ERM / EDM integration.

Additionally, the end user's experience and perhaps even their acceptance of the EDRM system may be affected by such considerations as:

- The number of levels in use in the classification scheme (in general more than four or five levels can be confusing even where they are collapsible, although in a very complex organisation this may be difficult to avoid);
- The browsing interface of the EDRMS (particularly whether it enables the view of all the levels of the classification scheme and/or whether the folders as well as the classification scheme can be viewed in the same window);
- A large number of levels can be mitigated to a degree by users having 'stored favourites', saved searches and other tools at their disposal but these also mitigate against the free sharing of information that is often one of the drivers for EDRM;
- The approach taken by the implementation to the issue of whether folders containing records are permitted at and above the lowest level of the classification scheme, as opposed to just below it; and

- The other retrieval support tools available either as a part of the EDRMS package itself or elsewhere in the technical environment.

Multiple classification systems, thesauri and category lists

Multiple classification schemes are more demanding on the end user, particularly if the user is required to choose the 'prime' location for declaration of a record. [Where resources are available, multiple schemes may be more easily administered by specialist information management staff within a Department though this is an overhead that will not be supportable for all.]

The *Records management metadata standard* suggests that the optional element *Subject* is populated as a default from the Government Category Lists (GCLs) published by the Office of the e-Envoy. It is well worth considering as consistent use of the GCLs has the potential to realise significant benefits for joined-up working across government. This type of secondary referencing can supplement the classification inherent in the BCS itself. Departments and agencies may wish to consider whether the GCLs are even suitable for use as the primary system of classification (i.e. as opposed to post-coordinate indexing) although in many cases they may prove too generic for the business context.

An alternative is to use a structured thesaurus. There are many general subject thesauri available (e.g. Library of Congress or APAIS) as well as subject-specific thesauri (e.g. Zoological Record Thesaurus by Biosis, Archaeological Monuments by English Heritage, GEMET Environmental Thesaurus by the EEA). There are also quite a few thesauri that have been developed by central governments internationally, either subject-specific (e.g. Australia's Department of Health and Aged Care Thesaurus) or for whole-of-government (e.g. Government of Canada Subject Thesaurus). An organisation-specific thesaurus can require substantial investment in its development and maintenance. However, by reflecting actual business activities that end users can easily identify, it may be much easier to implement.¹²

Using a functional thesaurus for common administrative functions

A functional thesaurus, such as Keyword-AAA ('k-AAA'¹³) – is designed to cover the administrative functions common to all government agencies – e.g. personnel, finance.

There is an important difference between using a thesaurus to control the primary classification of records (and thus the structure of the BCS) and using one to control the population of a Function metadata element as in the Australian Commonwealth¹⁴. *The Functional Requirements' Metadata Standard* does not (for the time being) include such an element.

In either case, k-AAA would have to be used in conjunction with an agency-specific thesaurus to cover the core business functions. If used for the BCS itself, it should be remembered that it would only be compatible with a functional approach to the top levels of the rest of the BCS at the very least. Further discussion of this issue is in Sections 6 & 7.

¹² See also Cumming, M, *Tomatoes are not the only fruit: a rough guide to taxonomies, thesauri, ontologies and the like* accessible from <http://www.govtalk.gov.uk> and Records Management Society of Great Britain Bulletin 113, April 2003.

¹³ Developed by State Records Authority of NSW and the subject of a number of adaptations such as by National Archives of Australia for Commonwealth government use and (separately) by local councils. See <http://www.records.nsw.gov.au/>

¹⁴ Accessible from: <http://www.naa.gov.au/recordkeeping/control/rkms/summary.htm>

Section 3: Intellectual control and appraisal issues

The differences between the system functionality provided by an EDRM solution and the intellectual control exercised within it are discussed in Section 4. This Section concerns itself with the need for intellectual control of the records organisation in the electronic environment, methodologies for which are discussed in Sections 5 onwards.

For all the processes defined in the generic *Functional requirements*¹⁵, possibly conducted in different physical locations and at different stages in the record life-cycle, the BCS provides the central strand and point of reference. Classification schemes 'document the structure of a records management system and the relationships between recorded and the activities that generate them. They provide an essential basis for the intellectual control of records and facilitate their management and use over time'¹⁶.

Differences between electronic and paper records affecting specifications for the classification scheme

Automation

Most records management processes in the electronic environment are, or can be, automated. This carries opportunities for improved productivity but dangers such as inappropriate access to or destruction or retention of records.

Impossibility of physical control

In the paper world the location for carrying out RM processes shifts according to the stage of the lifecycle as the traditional model of the records life-cycle indicates.

For example, storage of active records was done at staff desks, but tracked by records storage staff and by Registry staff; the decision to destroy was made by desk staff or in the Registry but carried out by the records storage staff. In summary, the records are managed through controlling their physical manifestation or format.

In the electronic environment this is impossible. The electronic record consists of several parts not all of which are visible to the user – the data and information content itself, the software, hardware, storage medium and metadata. Hence 'a record is no longer a physical entity, but physically fragmented, kept only together by a logical boundary'.¹⁷ There are increased problems of interpretation in such an environment and the 'logical boundary' or classification scheme becomes of even greater importance for the overall control of the records system. Automation has been developed in such a way that these processes are conducted through the one system: an EDRMS stores records whether they are active or not, tracks who is using a record, controls access to records and implements disposition.

¹⁵ Requirements for ERMS, 2002 accessible from: <http://www.pro.gov.uk/recordsmanagement/erecords/2002reqs>

¹⁶ Shepherd, E and Yeo, G. *Managing Records: A Handbook of Principles and Practice*, Facet Publishing, 2003 ,p.73

¹⁷ Hofman, H. Dealing with electronic records: intellectual control of records in the digital age Janus 1998.1 p.155

Timing of records management processes: the records continuum

In the paper world, because physical location changes according to the process being carried out, these processes were also of necessity dispersed across time. In the case of disposal and retention the process was systematised (e.g. under the Grigg system) so that took place 10 or 25 years after a record ceased to be in active use.

Automation renders the timing of these potentially instantaneous and simultaneous. The concept of the records continuum where 'managing records is seen as a continuous process where one element of the continuum passes seamlessly into another'¹⁸ seems, therefore, highly applicable to electronic records. This is explored in more detail in the following paragraphs.

Intellectual control is more abstract

Intellectual control in the electronic environment becomes harder and more time-consuming to establish through a study of the informational content of a record. As the PRO/Cabinet Office *Scoping study* put it:

*'Within the current Grigg-based approach to medium term management of paper files the review process is relatively expensive, requiring individual examination of content. If directly applied to electronic material, it would become more so: the process of opening, reading and closing a sequence of electronic documents is far more cumbersome than scanning a set of papers. In addition, review would need to be carried out more frequently; leaving electronic documents for a five year period after closure for reviewing presents at least a medium level risk that some or all material may become inaccessible; and a twenty-five year review is clearly unacceptable.'*¹⁹

In addition there are not the obvious visual clues that can aid assessment of content in the paper world: drafts in the electronic world can look as finished as the definitive, final version.

De-centralisation of records management

Automation is prompting a re-skilling of the workforce: with the advent of ERMS 'we are all filing clerks now' and need to be to ensure the integration of record capture into the business process. The collective ability to maintain records systems that deliver corporate EDRM depends on individuals performing, every day of their lives, records management tasks, such as creating, naming and filing documents. In the past a discrete specialism in the Registry kept 'bibles', indexes and docket books to enable the specialists to maintain intellectual control and coherence in the records system. Today, that specialism must become part of the everyday skills of all members of the public sector workforce. Such a move will be aided by classification systems that are straightforward and comprehensible.

¹⁸ Shepherd and Yeo, Op cit., p.9.

¹⁹ United Kingdom, Cabinet Office / PRO *Records Storage and Management, a Scoping Study 1997*, p.26. There are multiple sources on the issues of technical preservation of electronic records alluded to here, including Vol 2 of *Management, appraisal and preservation of electronic records*, 2nd edition, PRO 1998 (already cited).

Disposal management

Organisations need to ensure that records are sustained as authentic, reliable, complete and useable records for as long as they are needed to meet business, legal, audit and accountability requirements. Disposal management aims to achieve the destruction of records which have lost their value, the better to preserve and facilitate the use of those with continuing value.

In the paper world disposal management is an ‘add-on’, conducted in a different place and at different times (i.e. afterward) from the other records management processes. However, there are differences between the paper and electronic worlds which indicate that the element should no longer be an ‘add-on’ to the classification scheme and the other controls over records but integrated into its design from the outset.

In the electronic environment, this embraces an unprecedented degree of automation in both the retention and the destruction of records, involving the export of a subset of records to an archival system or simply the next generation of hardware²⁰. EDRM technology permits this to be achieved as an automated, structured, auditable activity restricted to authorised users.

Whilst ‘storage costs for electronic information on digital media are considerably lower than the cost of physical storage space which paper requires, but maintenance costs are considerably higher: the obsolescence effects of technology change require constant attention to both media and file format renewal. Migration is, for the foreseeable future, a costly process and organisations will seek to minimise the material which needs to be migrated, that is which has a demonstrable continuing value’²¹. It is essential that only the records required be migrated.

Timing of appraisal

Under the system of appraisal currently in operation for paper records decisions about ‘sustaining’ records are made many years after the document or folder was in active use: of the 20% which typically survive first review that final decision is made 25 to 30 years later.

Such a delay is inadvisable for electronic records for the following reasons:

- a) Maintaining records without value is costly, especially if they are retained for so long that they need to be migrated²².
- b) There is the danger that computer records will have been destroyed inadvertently or by virtue of rapid technological change before appraisal takes place²³.
- c) Information about the records, on which appraisal rests, may be lost once they are inactive.
- d) The above difficulty is compounded by new ways of working such as ‘virtual teams’ and briefly existing working groups often outside formal structures geared to joining up various strands of government work.

²⁰ International Standardisation Organisation *Information and documentation: Records management*, BS ISO 15489-2:2001 4.2.1.

²¹ PRO/Cabinet Office *Scoping study*, Op. Cit, p.26.

²² Aside from the costs of migration and sustaining the electronic objects, there can also be significant liabilities and costs arising from FOIA access request administration and DPA fair processing issues.

²³ Bailey, C., *Archival Theory and Electronic Records*, Archivaria 29 (Winter 1989-90).

- e) These are strong reasons to support the accepted notion in much of the literature about electronic records, that appraisal needs to happen at least while the records is active, better still at the point of creation and better still it should be an element formative in the design of the BCS²⁴.

Security and access control

Government organisations (particularly in central government) need to ensure that they have an appropriate set of categories of access rights and restrictions and that these are implemented²⁵.

In the paper environment access could be physically limited through security markings stamped on documents or folders and then controlled through desk officers and registries, controls over access to records storage. This process too is an 'add-on', conducted in a different place and at different times from the other RM processes and by physical means. In the electronic environment the application of access restrictions must normally happen through the same storage system and at the same time as a record is 'requested'. Without security markings being applied to documents at the point of creation and suitably maintained, access will not be properly controlled.

The application of the organisation's access controls therefore needs to be taken into account in the development of the classification scheme. As security markings may well be linked to the same business, legal, audit and accountability obligations that affect decisions about retention and disposal the access classification scheme may be readily integrated into an overarching classification scheme that takes account of retention and disposal needs.

There may be circumstances (i.e. where these are at variance) where this can only be achieved by accepting the overriding importance of the capture and disposal aspects of record organisation and the consequent complications for access control administration.

Summary

The BCS, supported as necessary by post-coordinate indexes, controlled vocabularies, taxonomies and so on, provides the overarching intellectual control through which all the physical controls including destruction, access, storage and tracking are implemented.

The classification system is supported by:

- the management of creation through guidance and business rules on filing and capture²⁶;
- structured, automated and auditable destruction, migration or archival transfer through disposal schedules; and
- the management of security by assigning rights or restrictions to access to both users and records.

²⁴ Databases offer yet another scenario as they may be used to capture not just one function but many: organisations may 'combine their resources to create and maintain a single large system or database which can serve all their dicers but related needs at once' (Bailey 1989); in such a situation the difference between active, semi-active and inactive stages of records becomes still more demanding to determine and combined with the danger of © above makes provenance and hence appraisal decisions very difficult to determine. It is the intention of The National Archives to issue further guidance on this environment – which is largely out of scope here – in 2004.

²⁵ For an explanation of how it is envisaged the Cabinet Office's *Manual of protective security* system of protective markings is envisaged to work in the electronic environment, refer to the *Reference document*, vol. 3 of the *Requirements for ERMS* series (Op. Cit.)

²⁶ This issue is not covered in any detail in this guidance.

Balancing the first two of these concerns is discussed in more detail in the following sections of this guidance. Convenient administration of the third must normally cede precedence to the first two in determining classification scheme design.

National Archives Guidance

The departmental business classification scheme should be recognised as the principal intellectual instrument in records management activities and should be devised and implemented to support the management of the creation and disposal of records and, where possible, the management of security of and access to the records:

The record-keeping system should, ideally, enable the allocation of records to a pre-determined category by associating the individual record with a file or assembly. Where this is not yet possible, the record-keeping system should ensure that records are kept in an organised manner which can allow later appraisal processes and decisions to be carried out retrospectively.²⁷

²⁷ *Management, appraisal and preservation of electronic records*, 1998 Vol 1 (Op. Cit.)

Section 4: Relationships between business classification schemes and technical EDRM functionality

General

As will be apparent from other sections in this guidance, there are many points of contact between existing technologies for EDRM and the intellectual control that this functionality facilitates. The purpose of this section is to explain how these mesh together.

An E[D]RM solution compliant with the mandatory *Requirements for ERMS* will support a variety of approaches to the intellectual control challenge outlined in Section 3. Where the 'highly desirable' and 'desirable' requirements are also supported in a solution, it may do this with still more flexibility and finesse. The aim of this section is to point up some of the most direct consequences of this.

It remains important to have an understanding that the intellectual control and the system functionality are quite separate. What EDRM solutions offer here is the ability to achieve intellectual control in ways not feasible in the past. Intellectual control is not part of an EDRM package but has to be developed by the implementing organisation bearing in mind its business needs.

Records management entities and inheritance of metadata attributes (properties)

The *Functional requirements* series of publications (particularly Vols. 2 & 3, the *Metadata standard* and the *Reference document*) shows the principles determining the inheritance of metadata attributes downwards through the BCS. These can potentially mean a significant accumulation of inherited metadata from the class entities through the folder level to the individual records themselves. It should be remembered that unless structured titling of folders is being enforced through the ERMS (or the BCS string is deemed to be part of the folder title), the classification scheme is not normally a folder titling mechanism.

The *Reference document* includes an alternative view of the metadata standard as a 'flat' listing by entity or aggregation level. For record level metadata there is an additional column showing the source of each metadata element. This shows how the creation of the BCS and the declaration of records against it can support the cumulative capture of evidence about the business processes being recorded through the capture of metadata and particularly the structural/relational metadata. Most of this metadata is system generated, not user defined/amendable.

Hierarchical vs. flatter structures

This concept does, however, assume a hierarchical structure of the BCS and this is not the only possible solution. For example, a case file scenario (more will be said on this later) may well benefit from a flatter BCS (i.e. with fewer levels). The records held within it will to a degree be self-indexing – the obvious example may be by personal details, National Insurance number or some such.

This has an impact on the availability of inherited metadata and the evidential value of the metadata at record level. However, it is irksome for the end user to have to browse unnecessary levels of the BCS that might seem to have been invented to make the case file area resemble the areas used for other types of records²⁸. Subject indexing is often more appropriately applied in this context using a metadata field rather than BCS location *per se*. In these types of system, the evidence is established by a different type of context: including the overall management and integration of the case management/EDRM solutions, the aggregation of the case file as well as the semantic inferences possible from the content.

The *Functional requirements* require compliant systems to support a minimum of three levels of classes from the root level before the classification scheme ends and the folders containing records begin²⁹. There is no requirement that there have to be the same number of levels of classes in the BCS across all its areas, merely that a class that contains a folder cannot also contain another class and similarly a class that contains a class cannot also contain folders (A.1.4).

Duplication, copy control and related issues

Duplicates occur because a single record may be used in a number of business activities¹². Where necessary, the EDRMS can restrict access to certain parts of the BCS. However, enabling users to access as much of the BCS as possible can prevent a lot of duplication.

The electronic environment offers opportunities – subject to certain rules - for shared access to the same information. That traditional shibboleth of records management the paper environment – cutting down and preferably eliminating duplication – has enhanced possibilities in the electronic environment as a result.

Scope for reducing duplication where access controls permit

Extending the ability to view the BCS to a wider variety of users in an organisation also facilitates avoidance of the need to duplicate information for pure access reasons, although associating records relating to the same business activity together is important to good records and information management³⁰. This cannot obviously be pursued rigorously if whole areas of the BCS are subject to access controls for some of the users affected. Departments are recommended to concentrate on the desired outcomes and their particular environment when considering these issues.

²⁸ See Sections 6 & 7 of this guidance and Module B.4 of the Requirements for ERMS: Case and workflow management

²⁹ It is not mandatory for organisations to implement three levels of classes, though this is likely to be a bare minimum

³⁰ For example: the legal advice received during a case or project may be referenced by an officer who is drafting new policy.

Copy/pointer technology

EDRMS have a range of functionality to support this aim. Some enable a record held in the EDRMS repository (or database) to be referenced from more than one location in the BCS. This is usually called 'pointer' technology. It has the effect of keeping the object singular but alerting the user to it from two or more contexts. Functional requirements A.2.21 – A.2.25 refer.

Similar outcomes can also be achieved by other, albeit less elegant, means. In some systems a copying facility is available that duplicates a record but maintains most of the metadata – apart from the BCS location – of the first object with the second. The *Functional requirements* and *Metadata standard* require the link between multiple pointers and controlled copies to be maintained using the 'Relation' metadata element group. This is used by disposal conflict resolution functionality specified in the *Functional requirements*.

It is possible to achieve some of the same outcome by declaring the record into the BCS twice and establishing a relation in the metadata manually – though this is obviously far more time consuming and may not, typically, be supported by any disposal conflict functionality.

FOI/Data Protection

As so often, it is worthwhile to consider the most appropriate way of achieving the intended outcome – which is adequate corporate control, not eliminating copies for its own sake. This is worth reiterating in the context of the Data Protection Act 1998 and the Freedom of Information Act 2000: adequate corporate control of records and their copies is key to meeting these legislative requirements.

This means that sound assertions and clear decisions can be made or taken about all instances of the record with an awareness of their [former] location. For example, a fair [data] processing issue or confirming whether information contained within a record that is the subject of an FOI request has already been disposed of in all its manifestations.

Section 5: Deciding on the approach to producing a business classification scheme

Change management and user consultation

Change management and user consultation are key to realising the benefits of EDRM. A well-established BCS can also provide the basis for further knowledge management or cultural change if desired.

User consultation is important for successful implementation of the BCS. Support will be needed to help users adapt to viewing, browsing and retrieving information in a variety of new ways.

User interface issues

The user interface needs to present a comprehensible and 'friendly' aspect to the end user. A purist functional approach (see next section) would be unlikely to be a success if the semantics of the BCS – however robust and consistent in theory – are not understandable to them. It is recommended that substantial consultation be conducted with user groups on whatever solution is proposed by an EDRM project to ensure that there is sufficient acceptance and 'buy-in' by end users. Training on the BCS during implementation will also be required to ensure they know how to use it and understand that it is to be used for disposal management.

General issues with introducing a corporate business classification scheme

It is an important consideration how users are to adapt to being able to view and browse and retrieve information in a variety of new ways in the electronic environment. Realising these benefits is an important part of the business case for enterprise and government-wide EDRM as well as wider information and knowledge / content management ambitions. Managing and exploiting information resources corporately simply works differently and imagination is required to take advantage of this.

In the paper environment, as the main view of the 'Corporate' holding was only normally available to registry staff, users tended to interact with those staff as intermediaries and a limited subset of the organisation's records closely related to the business unit in which they were employed. Records were generally under the physical control of the business unit that created them until such time as activity access had declined to such a low rate as to allow their transfer to off-site storage facilities. Once there until disposal, if they were viewed at all, it was most likely that any retrievals would be by the same organisational units. Secondary purposes of records emerged haphazardly in some instances but were hardly facilitated by information management practices.

In the electronic environment, the full BCS may be made available to all users. Staff can independently identify existing records that may inform their work. Those records may have been created by a different business unit and not accessed for some time, but will be available

to meet a current information need. Not having to “reinvent the wheel” can lead to significant savings, which is the foundation of the EDRM business case.

Semantic relationships between levels in the classification scheme and between it and the folders

As discussed in the previous Section, the classification scheme will not necessarily be used as a folder titling tool. Nevertheless, it remains important for thought to be given to how intuitive users will find the semantics throughout the structure as this greatly increases browsability and acceptance of the solution. This is an important training and change management issue.

Integrating legacy line-of-business systems and structured databases into the business classification scheme

As mentioned in the first sections of this guidance, the BCS should represent the entire business of the organisation. Some line-of-business systems do in fact pass records to the EDRM environment as noted in Section 2 and specified in the *Requirements for ERMS* Module B.4 *Case and workflow management*. The case file issue is also discussed in Sections 6 and 7. For the rest, this presents a logical challenge to fitting legacy systems and structured databases (and potentially any other repository of records of business activity) outside the EDRM environment or not integrated with it. It could potentially be applied to some websites.

To resolve this, it is helpful to attempt to determine a node in the classification scheme where a single entry for such a system could be placed, as a single entry and a single object. Careful analysis and design will need to be done to ensure that this fits the scheme and is understandable to users. Similar issues of paradigm clash to those identified with case files may occur: many of these systems will cut across activities and functions of a strictly functional classification scheme.

This should contain metadata about the system, including how it is to be accessed. TNA recommends using the resource description standard laid out in the e-Government Metadata Standard (‘e-GMS’) produced by the Office of the e-Envoy³¹.

³¹ Accessible from: <http://www.e-envoy.gov.uk/Resources/Guidelines/fs/en>

Section 6: The main methodologies

To recapitulate, the main purposes of a BCS may be summarised as being:

- Providing links between records that originate from the same activity or from related activities;
- Determining where a record should be placed in a larger aggregation of records;
- Assisting users in retrieving records;
- Assisting users in interpreting records;

also:

- Assigning and controlling retention periods; and
- [possibly also] assigning and controlling access rights and security markings.

Although all records managers can agree on the need for a BCS, there is no clear single line of argument from the specifications above to a particular type of scheme.

Creating a viable, accessible corporate view of the organisation's records resource is an opportunity to structure information more imaginatively and to realise many of the business benefits identified above. The balance chosen will reflect both business needs and organisational culture (including the extent to which cultural change is achievable). A BCS may be organised in one of the following ways, or may involve a combination of approaches.

- Process driven: i.e. the immediate processes of government
- Service driven: i.e. the citizen's view of those processes
- Subject category driven (for example using the Government Category Lists – GCLs – produced by the Office of the e-Envoy)
- Functional basis
- A combination or hybrid of the above approaches

The discussion of the balance of advantage between these contained in the following paragraphs is summarised in the table overleaf:

<i>Business classification scheme organised by:</i>	<i>Advantages</i>	<i>Disadvantages</i>
Process	End-user friendly	May be impenetrable to external customers
Service	Customer friendly	May require complex mappings for some end-users
Subject	May be easy to map to other subject classifications	Some users do not find subject indexing and retrieval easy, may be difficult to maintain without full thesaurus support
Function	Highly rigorous, may provide some 'future proofing' against changes in organisational structure, partly supported by some off the shelf thesaurus designed for (Australian) government use, business analysis required to set up can prompt far reaching business change ³²	Requires extensive change management programme, may be alien to end-users and service customers and may remain so, issues with accommodating case files ³³
Hybrid (e.g. functional at high level, subject based lower down with optional flatter case files area)	Can, if implemented successfully, gain most of the advantages of the functional and subject approaches whilst minimising the disadvantages	Perceptual difficulties in set up, often confused for the 'purist' functional approach

The functional approach

Government administrative arrangements often change, particularly after a general election, but also at other times – when priorities change or opportunities for efficiency gains are identified³⁴. In these instances, functional responsibilities may be moved between departments. Alternatively, existing departments may be merged or split – as was the case with the former Department for Transport, Local Government and Regions¹³. When functions move, current and recent records usually follow.

Although their allocation is prone to variation, the actual functions of government themselves tend to be quite stable and change little over time. Thus a functional approach to BCS can make the relevant records easier to identify and relocate during times of administrative change.

³² Cf. DIRKS (Design and implementation of recordkeeping systems) methodology: accessible from <http://www.naa.gov.au/recordkeeping/dirks/dirksman/dirks.html> or <http://www.records.nsw.gov.au/publicsector/DIRKS/final/title.htm>

³³ See Sections 6 & 7

³⁴ Current and previous lists of ministerial responsibilities can be found on the Cabinet Office website at <http://www.cabinet-office.gov.uk/central/index/lmr.htm>

Functional analysis involves identifying the business functions of an organisation and breaking them down into activities, transactions and perhaps sub-tasks as opposed to existing records or the organisational structure. Various methods may be used, singly or in combination, including hierarchical analysis (top-down) and process analysis (bottom-up). The product is a functional business classification scheme³⁵.

Records are created, received or maintained as evidence of business transactions³⁶. Therefore, where appropriate to business needs and organisational culture, a BCS can be designed to directly reflect the hierarchical relationship of functions, activities, transactions and records. Alternatively, the BCS can be mapped to a scheme based on different criteria.

Early implementations of functional analysis, particularly in Australia¹⁴, have created a great deal of interest in this methodology. It is still uncertain whether the functional approach would be practical to implement wholesale in the UK government environment.

The reasoning is attractive: if consistent functional categories can be identified and implemented such changes in the structure of the civil service will only require the removal of a section of the relevant corporate BCS(s) and import into those of the new (or augmented) BCS. Such an analytical approach was employed with some success in the paper environment. In the electronic environment, the potential for exploiting interchange standards (defined in the records management Metadata standard that accompanies the *Functional requirements for ERMS*³⁷) means that this could be achieved with the minimum of processing.

There is a great deal of interest in this approach in the UK government environment. This is despite there not being (currently at least) the specific drivers of a legal framework for records management that requires the formal agreement of disposal periods of categories of records by the National Archives as a legal requirement, as in the Australian Commonwealth³⁸.

The potential difficulties are of semantics for the end user if faced with an essentially 'alien' BCS (or scheme fragment), the initial set-up overhead, and the difficulty with accommodating case files (see Section 7 below). The former problem can of course be addressed with a very high degree of user support and substantial investment in that aspect of change management. The resources required for implementation of this approach to the necessary degree of rigour can be considerable.

'Hybrid' business classification schemes

In practice, an approach that is to some extent a hybrid is more achievable. Probing the surface of most successful 'functional' approaches normally reveals a degree of compromise either in the interests of the user, or to accommodate case files.

³⁵ BS ISO 15489-1:2001 *Design and implementation of a records system* 8.4(b)

³⁶ *ibid*

³⁷ *Requirements for ERMS – Vol. 2: Metadata Standard* (Op. Cit.)

³⁸ The National Archives of Australia is attempting to implement functions-based appraisal and disposal across Commonwealth government using the DIRKS methodology for designing and implementing recordkeeping systems, not least to enable it to manage the formal system of legal disposal instruments. The result of this programme will not be clear until functional analysis has been completed for a significant proportion of government agencies. This is a different statutory framework from the UK government's. It should be noted that functional analysis is not an exact science and robust analyses in different organisations would not necessarily be compatible enough (in either level or semantics) to support simplifying the records management implications of machinery of government changes.

Appraisal, disposal and the functional model

A BCS is the principal conduit for the implementation of the disposal business rules inherent in disposal schedules to the folders and the records contained within them. Disposal is thereby a structured process and in accordance with agreed policies as well as audited within the EDRMS. This is vital to build confidence in the ability of government records management activity to support Freedom of Information and Data Protection.

One potential huge benefit of the functional approach is the appraisal of the business function (as opposed to the records themselves that it produces, a costly process involving examining individual files and records within them) and the application of disposal criteria at a higher level as a result of this activity. Secondly, any changes in organisational structure or BCS approach need not affect the operation of disposal, so long as records are allocated to a particular function.

Analysing departmental functions – some pitfalls to avoid

There is considerable management theory literature on functional business analysis and it is not intended to repeat that here. Instead, a number of common questions and mistakes (as much with the underlying business analysis as the construction of the BCS itself) are discussed:

- Remember that the analysis of the functions of a department or agency may indicate – superficially – a resemblance between external facing operational functions and internal administrative functions. Closer look at these and robust business analysis will show that the functions, stakeholder group and consequently the information management challenge is quite different. For example, Her Majesty's Treasury will have its own internal financial management records quite different in nature from the records it creates and uses in managing the economy, although the subject matter may appear similar;
- Provided the users can be kept on board there are significant potential benefits from concentrating internal management material in one area of the BCS. For example: both the Human Resources / Personnel function and local line managers / unit heads have records relating to the employment of staff and the management of their terms and conditions and performance at work. With the proviso in the next point as a caveat, it is worth trying to persuade both to use the same records in the same BCS area. Naturally this means that esoteric specialist jargon about personnel management is to be avoided on the BCS;
- Privacy, sensitivity and confidentiality issues will remain part of the government information environment. This may impact on the extent to which corporate wide access to information (which is generally one of the main deliverables of EDRM) can be promoted. Refer to the points above on pages 18–19 on duplication and copy control for further information.

Cross government mapping and business classification schemes

As part of the public policy programme led by the Department for Constitutional Affairs, work has begun to promote and build confidence in data sharing across government.

The National Archives is defining sustainability requirements to ensure departments can access electronic records throughout their business life. This will involve identifying common categories of information across departments, and defining consistent retention rules. It is also possible that a common BCS structure and other infrastructure may be recommended to support sustainability through time and migration for as much as 70 years.

Striking the right balance: National Archives guidance

Having discussed the characteristics of the main methodologies, it is relevant to note that none of them has the monopoly of advantages and, to recapitulate a point made at the beginning, a careful balance needs to be struck between the various concerns to realise the maximum benefits from EDRM implementation.

Producing a BCS – summary points to remember

- A BCS should not be tied to organisational structure – which is all too often prone to change or modification. For long-term viability, the BCS should be organised according to more stable or independent criteria.
- If taking the functional approach, make clear the distinction between core business functions and internal administrative functions. In some cases, there may appear to be overlap. For example: financial management at HM Treasury. In this instance, further analysis and identification of stakeholders will reveal two, quite distinct, functions with different records management requirements – 1) Treasury’s internal financial management; and 2) the core business function of public expenditure planning and control.
- Many of the benefits of EDRM lie in the value of sharing information. Encouraging staff from different units to use common parts of the BCS can help achieve this aim. For example, the performance management records created by line managers could be kept with other personnel records. The records may then be used for statistical purposes by the Human Resources section. User input on BCS terminology is vital in this scenario.
- Privacy, sensitivity and confidentiality will remain important parts of the government information environment. EDRM can be used to control access to parts of the BCS, to ensure these principles are not violated by corporate information sharing.
- Inadequate or failing BCS (‘Fileplans’) for paper systems should not be transferred or replicated for the implementation of EDRM (though see the discussion of legacy records in Section 8). Moving to the electronic environment provides an opportunity to make improvements and develop a tool to meet business needs.
- Consider also the issues aired in the following three sections on case files, maintenance and worked examples of how comparative BCS for the same (fictitious) organisation might look.

Points for different types of organisation

As discussed, different BCS designs will depend on a variety of factors, including the **nature of the department's business**. It is recommended that careful thought be given to this (prior to the consideration of any legacy records issues) as part of the business analysis that precedes work on the classification scheme.

Executive agencies usually have clear and discrete remits, carrying out homogeneous operations the outcome of which are predictable and definable products for example, processing driving licence applications, receiving money for investment, providing official cars, monitoring water quality.

Where such functions are relatively easily defined, the functionally based file plan seems most appropriate. In such a situation, staff are likely to be dealing with an easily defined and highly structured set of records. The relationship of these records to defined functions would be easily ascribed, access and disposal for all except policy records easily determined and executed.

However, it may be argued that it is precisely in such circumstances that a pure functional approach is difficult: such departments will tend to be dealing primarily with case files and case files tend to contain within them work carried out under the heading of many different activities and even functions (see following example and further discussion below).

Example:

The work of client managers at The National Archives fulfils many of the functions of Records Management Department – oversight, support and monitoring of appraisal, infrastructure, archival transfer and other activities. Case files relate to the interaction between client manager (or TNA in general) and the DRO (or the department in general) covering these 'other activities'. Effectively, it has been found prudent to create a client manager function, incorporating selection, access, advice and a case file series of that more generalised interaction under each functional classification node.

There follow a series of more detailed pointers to how the consequences of the type of business might properly influence the approach taken:

- The functional approach is best suited to situations where the functions are discrete, regular and simple. Consequently, the functional approach seems well suited to administrative functions common to all departments and The National Archives will be considering the options for supporting a common organisation of these across departments and agencies in the future.
- This approach might be successfully extended to departments whose overall functions resembled administrative functions in that they are also discrete, regular and (relatively) simple. Note the discussion on case files in the next section, which means normally excluding these from a strict interpretation of the functional approach.
- It is not possible to adopt a functional approach at the top of a classification scheme and

³⁹ 'public policy' in this sense being the scenario of public policy in mainly ministerial departments – especially the cabinet departments - where the programmes are less likely to produce routine 'policy' work following standard workflows and patterns. For further discussion of the distinction and its relationship to record organisation, refer to the next section and the *Functional Requirements for ERMS* Module B.4 on *Case and workflow management* in draft at the time of writing (October 2003).

another principle of organisation for another part at the same level[s]. This is because of the clash of paradigms: for example: if the other principle is organisational structure, how is the end user in an operational business unit to know intuitively where the correct area for their management (i.e. finance, project management, personnel) records is?

- Two principles of BCS design should only be combined with care to avoid these paradigm clashes. For example (and this approach has many advantages if correctly implemented), functional at the higher levels, with a subject based (possibly including case files) principle at the lower levels. To implement this successfully, a clear decision and business rule must be established concerning where the scheme breaks out of the one principle and into the other, i.e. in what area(s) of the top level functional scheme and at what level.
- [Noting the provisos about case files], Executive Agencies might be able to go down the functional approach path [at least at the higher levels of the BCS], but TNA is not recommending that for 'public policy'³⁹, departments where the core business is less predictable and may be subject to very rapid change.
- Where the case processing resembles the single-transaction type, it is likely that the wholly functional approach could be adopted successfully right down to the lowest levels (this is likely to be quite unusual: see Section 6) as there is no clash between the convenient organisation of the records in the scheme and its logic.
- However, where case files are multi-transactional cutting across different activities (possibly even across functions) and/or regularly have implications for policy development, the functional approach will probably not be a useful way to proceed if users are to be kept on board successfully.
- If the implications for policy development are occasional departures from standard workflows and processes, this type of design could be sustained if business rules were put in place and enforced to ensure that the records of these processes were deemed to be those of another function.
- In this scenario, the impact of the statistics derived from the case material as a whole (rather than from any exceptional 'precedent' type files) would also need to be deemed to be part of a separate series and perhaps subject to separate management rules.
- User resistance to a functionally-based BCS may be greater in policy-oriented departments, adding to the change management challenge.

Section 7: Particular issues with case files

Definition and understanding

Case = “An instance or example of the occurrence or existence of a thing (fact, circumstance, etc.).”⁴⁰

This generic dictionary definition of a case is useful to assist in validating the traditional understanding in the UK central government records management/archival world.

This has usually been articulated by drawing a distinction between case (or ‘particular instance’ papers⁴¹) and the records of the development of the public policy. The latter are generally considered to be more important and valuable as archives than the routine instances of the implementation of that policy.

Implications of the functional approach for case files

For the purposes of the present discussion, this case definition requires refinement based on the active business phase of the records’ life – their creation and organisation in the creating organisation – rather than the archival issues.

Caseworking organisations use case files to bring together the elements of a transaction or a group of transactions which in some respect have the same subject (e.g. the correspondent, patient, defendant or victim).

This introduces a paradigm clash with the functional approach where the case file contents may well belong under number of different activities and / or functions (see sections 1, 5, 6 & 7). A number of misunderstandings are prevalent about this issue.

Resolving the clash

One very strict interpretation of the functional approach is that such a BCS has the potential to make the traditional case file redundant in the electronic environment.

In the paper world, there have been functional BCS in existence for many years – particularly at the higher levels - but for the sake of convenience the records comprising the transactions relating to the same individual, organisation, etc., were kept together. Effectively they indexed themselves by the identity of the entity government was dealing with and this advantage – particularly in view of the need to manage the level of service at the customer interface – was too valuable to be ignored.

The ultimate logical conclusion of this in the electronic environment is that the records in such a scenario belong in disparate locations (according to a strict interpretation of the activity and transaction type than was feasible in the paper environment), joined - as they can now be – by an alternative case ‘view’ comprising a common metadata link between the

⁴⁰ Definition from OED online, accessible from <http://www.oed.com>. See also *Requirements for ERMS: B.4 Case and workflow management* (in draft at the time of writing)

⁴¹ See: United Kingdom Parliament Cmd 9163 *Report of the [Grigg] Committee on Departmental Records*, HMSO, 1954

individual items. This is because – as previously mentioned – the electronic environment can support more than one view of the same information.

Enter the ‘virtual case file’

This ‘virtual case file’ is then made up either entirely of metadata or pointers/controlled copies to other records in an assembly different from the prime BCS view. It is possible to use the functional approach by mapping functions from the BCS to the case file, to enable appraisal/disposal/access controls and other records management processes to take place consistently. It is also possible to reengineer traditional workflow processes to avoid the creation of case files so that what forms the record from the new processes is the functional classification of the records and the capture of this sort of metadata.

This is a purist approach to the functional approach and one that may not appeal to all stakeholders in all business environments.

What are the main problems?

Particular problems may occur with the ‘arrangement’⁴² of the records not being understood readily by the caseworker, others in the creating organisation or perhaps the citizen.

These problems are not insurmountable, but they are highly demanding in terms of system design and change management. Where they can be addressed, significant advantages have been identified in other jurisdictions for high-transaction systems and appraisal/disposal.

Business classification schemes for caseworking systems

For public bodies who decide to retain the case as the primary structuring principle of transactional material within the BCS, this raises a number of important issues that need to be addressed at the planning stage:

1. Number of levels and self-indexing records

A case will normally possess an identifier (‘ID’) that is perfectly adequate for most purposes and generated from outside the immediate environment of the EDRMS. Such things have evolved to suit the business needs of organisations in the paper environment. For example:

- an ID from a case management application with varying degrees of integration with the EDRM environment;
- a citizen’s personal name;
- an organisation’s name or reference number from an authoritative source, such as the Companies Register
- a case ID (or other) as a structured element in folder titling.

Given that it is likely the case is also formed of a number of slightly different transactions, it is perhaps not necessary for the same number of levels of the BCS to classify these records.

⁴² In archival terminology, alternatively the ‘assembly’ or structure of the records.

2. Other classification issues

BS ISO 15489 requires all records to be placed within the BCS. This demands that, even where it is possible to have the case files existing within a 'shallow' area of the classification scheme (i.e. with fewer levels because the self-indexation can be relied upon for most business purposes), that area itself should have a position in the classification scheme.

3. Case files in functional structures

Fitting the electronic equivalent of the traditional case file within a BCS constructed on functional principles is possible, but it means that the scheme, strictly speaking, is probably a hybrid structure. The most common type of this is likely to be functional at the highest level(s) and based on some other principle further down (e.g. subject). For further discussion of this issue, see Section 6.

Further development

These aspects of the guidance take into account some initial findings of the TNA review of appraisal.

Further guidance on these issues is contained in the Module B.4 *Case and workflow management* to the *Requirements for ERMS* (in draft at the time of writing) and the final output of the TNA review of appraisal which is due to report by April 2004.

Section 8: Business classification scheme maintenance issues

The system administrator rôle

Besides creating or importing the BCS and ongoing maintenance such as disposal rules, user profiles and access controls the system administrator has a very important role and at times a demanding one. The system administrator is responsible for maintaining the integrity of the BCS, within the EDRMS, over time.

The *Functional requirements* and *Metadata standard* detail the functionality deemed essential in an EDRMS to make this task effective and particular attention should be paid to the principle of inheritance of metadata attributes from one part of the BCS (or 'class') and its descendant objects (other subordinate classes, folders and records) – and also from folders to records).

An EDRMS offers functionality to automate many records management processes. The *Requirements for ERMS* series can help the administrator to identify and implement these facilities. For example, an EDRMS has the ability to automatically capture a great deal of metadata, which may then be inherited down through the BCS. This can ensure greater consistency and reduce the amount of keying required for data-entry. It may also allow common disposal rules or access controls to be applied to whole areas of the BCS.

At the record level this is an important aspect of the capture of evidence of the business activity: the metadata comprising the individual record's position and attributes is mostly captured automatically on declaration of a record into a folder.

It is also highly convenient that areas of BCS recording related business activities may well have the same disposal schedule and access control attributes. However, the temptation to make the administrator's life easier at the expense of the ordinary end user should generally be resisted.

Business classification scheme reorganisation⁴⁵

As described earlier, a BCS is only one view of the records of an organisation. There are many ways additional logical structures can be present, such as according to thesaurus terms, Government Category Lists, subject (or function if that is not the principle being used for the primary structure).

Where these categories are themselves highly structured, it is theoretically possible to reorganise the records according to these criteria as the primary classification. It might even be possible to automate a large part of this process.

Over time, an organisation may find it necessary to change the BCS structure considerably. This could be due to changes in the legislative environment, stakeholder expectations or

⁴⁵ For discussion of the potential of the functional approach to 'future proof' structures against changes in the organisation of government, see Section 5.

evolving work practices. Whilst loose structures may seem easier to implement, their maintenance and development can become difficult over time. Loose structures are also more difficult to map to a new configuration, if BCS reorganisation becomes necessary.

Alternatively, even where the structuring is not so strict, it is possible to establish mappings from one 'view' to another and achieve a systematic reordering of the information should the BCS be found not to be achieving its purposes adequately. It follows that the looser the structure of the scheme being 'promoted' to form the principal classification, the more work that this exercise will involve.

In general, it is easier to reclassify records under a highly structured or rigid business classification scheme (i.e. and probably supported and enforced by a thesaurus). When used in conjunction with an ERMS (i.e. moving from one ERMS to another), most of this process could even be automated.

Legacy records

Similar principles will apply to the mapping to an ERMS implementation from legacy (including paper) records.

Structured assemblies of electronic records

This is easiest where the legacy system is electronic, there is some logical structure present and that structure is being retained: e.g. explorer, some document management systems. This can perhaps be imported into an ERMS solution (the bulk import section of the Requirements for ERMS is relevant here). This could involve importing entire classes, themselves containing sub-classes, folders and records⁴⁶.

The complicating factor is that we should only recommend the perpetuation of a successful classification scheme and, as described above, a complex mapping exercise could be involved in changing the classification principle when migrating the folders and records⁴⁷.

The existing BCS ('fileplan') will be unlikely to contain any alternative classification 'view' (e.g. post-coordinate subject indexing in a functional scheme) that could simply be promoted to replace the classification scheme. This will inevitably mean a complex mapping exercise to evaluate how folder in the legacy system should map to a folder in the new. This would normally operate at the folder-to-folder level. Obviously, the greater the amount of material, the more labour intensive this will be.

Metadata from DMS and scanning solutions

Metadata relating to scanned images and held in document management systems is often relatively inaccessible. To begin with, the amount and nature of the metadata will vary, and will not resemble records management metadata in richness, appropriateness of capture and quality. Unlike a true ERMS, where export of a full metadata set accompanying the digital objects in the repository is possible as a structured assembly, export capability in DMS varies widely.

⁴⁶ 'Containing' in the sense that the relational structure is maintained – usually through the presence of relational identifiers – to enable reassembly in the receiving system, sometimes with a fair degree of automation.

⁴⁷ Whilst changing the organisation of the folders during these exercises is plausible, the dismantling of the aggregation of records into those folders is not recommended: this is an important part of the context of the individual records and their value as evidence and dismantling it violates important principles of records management. Thought should also be given to the retention of the former reference of reorganised folders.

In addition, the technical architecture is often a barrier to accessing the metadata: rather than having a separate accessible meta-database (as in an ERMS), the metadata is often in a highly proprietary format, contained in a file in the document repository accompanying the document. In some cases, unless migration is to the next generation of the same supplier's product, it cannot be extracted at all.

Importing metadata relating to physical records

Metadata forming paper environment fileplans can potentially be imported into an ERMS⁴⁸ from registry databases. This would only extend to metadata made explicit in the latter: much of the equivalent to metadata required in the born-digital electronic environment is contained in or on the physical format with such records.

Other metadata may be present but inaccessible. Different products have different export capability, although if the metadata can be rendered into a standard format (such as comma separated variable) this could be done from the tables rather than at the application level.

Alternative strategies

It may be that a pragmatic approach to the legacy records is more appropriate, particularly where the records are not likely to be retained for extended periods. For example, a node in the classification scheme could be devised to form a location for the legacy records on their existing structure as a 'dead' (i.e. closed) area where no more objects are to be added.

⁴⁸ Many proprietary COTS ERMS packages are capable of managing physical objects, whether individual ones that cannot be accommodated in the ERMS repository (e.g. large plans) or legacy records in physical folders. See *Functional requirements* Module B.3 (Op. Cit.)

Section 9: Worked example: Department of Equality and Diversity⁴⁹

This worked example is designed to illustrate points made in the main text of this toolkit by showing how the same organisation could use different methodologies to produce different business classification systems. A number of points are made about issues that could arise with organisational changes, but for the purposes of the example, the organisational structure remains static.

There is not space in this document to go into great detail on either the business analysis required, nor all the consequences for the lower levels of the fileplan(s). Sufficient information has been provided to draw out the essential distinctions between the possible outcomes and to give a flavour of the likely issues that will be encountered.

Brief 'pen picture' of Department

The Department of Equality and Diversity ("DEaD") was formed when it was decided to unite the functions of previous central government organisations that dealt with aspects of discrimination of all kinds, such as:

- Commission for Racial Equality
- Home Office
- Department for Constitutional Affairs
- Equal Opportunities Commission
- Employment tribunals parts of Department of Work and Pensions
- Regional equality (e.g. treatment of regional regeneration bids to the EU) from the Office of the Deputy Prime Minister
- Disability rights from DoH, DWP, and elsewhere
- Child protection policy issues from the legal departments, DoH, etc.
- Some aspects of Human Rights Act 1998 implementation.

The mission statement of the DEaD is as follows:

"To ensure that in the life experience of the individual citizen their rights to equal:

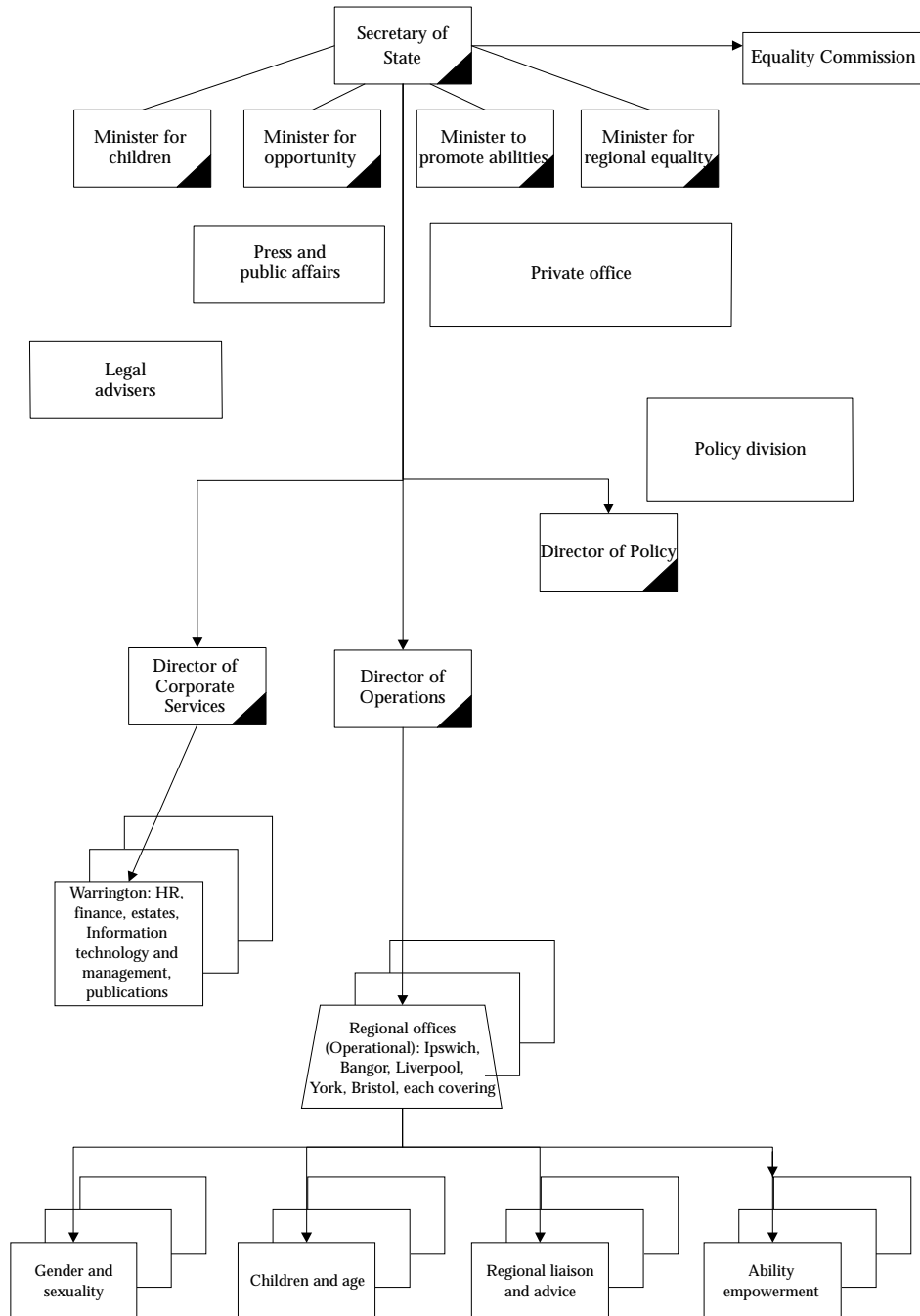
- Pay and benefits;
- Opportunity; and
- Services

... are protected and safeguarded and the diversity of citizens in a multi-faceted society are honoured and celebrated".

⁴⁹ This worked example is entirely fictitious and any resemblance to any departments past or present is entirely coincidental.

Current organisational structure approach

Figure 1: Outline organisational structure



Central functions

There are four ministers: the Secretary of State, the Minister for Children and junior ministers with responsibilities for:

- Gender, sexuality and age;
- Empowerment of disabled persons; and
- Regional cross cutting issues; respectively.

There is a close working relationship between the Policy Division, the Private Office (which handles all parliamentary affairs), the Press Office and the Legal Advisers. The latter are, however, a group employed directly by the Treasury Solicitors Department, albeit based in DEaD premises. All these units are based in the London area.

The London office also services an NDPB (the Equality Commission) which is entitled to be consulted by the Secretary of State on important policy issues and monitors the performance of the Department generally.

The internal administrative functions are centralised in Warrington: finance, estates, human resources, ICT/telephony and information management (apart from a small specialist legal library and information centre in London). The publications unit – irrespective of what purpose their output serves – is also located here.

Regional offices

There are five regional offices in England and Wales: located in Ipswich, Bristol, York, Liverpool and Bangor. Each of these has a similar structure, albeit they are not of identical size. Each provides:

- advice to local authorities, liaison with the Government Offices for the Regions and regional assemblies, citizens and independent advice agencies;
- disability;
- child protection/age; and
- race and gender/sexuality discrimination caseworking functions.
- N.B. there is no equal opportunity/access unit as such: the other divisions handle this issue along the lines of the other themes.

Consequences for legacy records organisation

The current 'BCS' for the organisation dates from the paper records environment and has historically been referred to as the Registry, occasionally the 'fileplan'. Registry series are tied to the location and organisational positioning of the unit producing the records.

Thus there are equivalent series in each regional office for the four main operational divisions. With the administration areas concentrated in Warrington, there are local records – involving a lot of duplication – in outposts of the Corporate Affairs functions in the other sites. Needless to say, the advent of client-server computing in the 1990s led to the

proliferation of unofficial and partially controlled electronic document series on shared (WAN), group and personal drives.

The WAN bandwidth initially inhibited the amount of information sharing across sites that could be achieved by these means (and was impossible with management information statistics databases authored in MS Access) and in practice this led to more duplication, not less and an undermining of the “official” paper filing systems. This means that whilst some control has been re-established over the electronic shared drives, compliance (including what is saved there from in-boxes, etc.) is patchy.

Introducing the functional approach

As already alluded to, business analysis often makes clear some of the potential for reengineering of business processes by bringing to light hidden problems and inconsistencies in the existing record organisation deriving from far deeper causes. These causes are very often problems with the internal understanding of the business being conducted and have often built up over time and without challenge. The business analysis that accompanies embarking on the functional analysis for producing a functional business classification scheme can often make these apparent for the first time⁵⁰.

This probably means that the production of the BCS is likely to be the beginning rather than the end of such changes, but it does have the potential to make the records organisation – and the business – more resilient and responsive to these. The business functions are analysed completely without reference at first to the records being produced by these functions (a top down approach⁵¹).

Departments and agencies may be interested in the *Design and Implementation of Record-Keeping Systems* (DIRKS) methodology developed by State Records New South Wales and National Archives of Australia. This is the most fully developed methodology for reengineering records management systems, including the close relationship with business change and the functional approach to BCS⁵². Both sites include informative case studies⁵³ far more detailed than this example, particularly on the earlier stages of DIRKS when formal Commonwealth disposal authorities are granted.

Figure 2 represents the top levels of a strictly functional approach to a draft BCS for DEaD. Although many details remain to be worked out, the main characteristics can be readily observed.

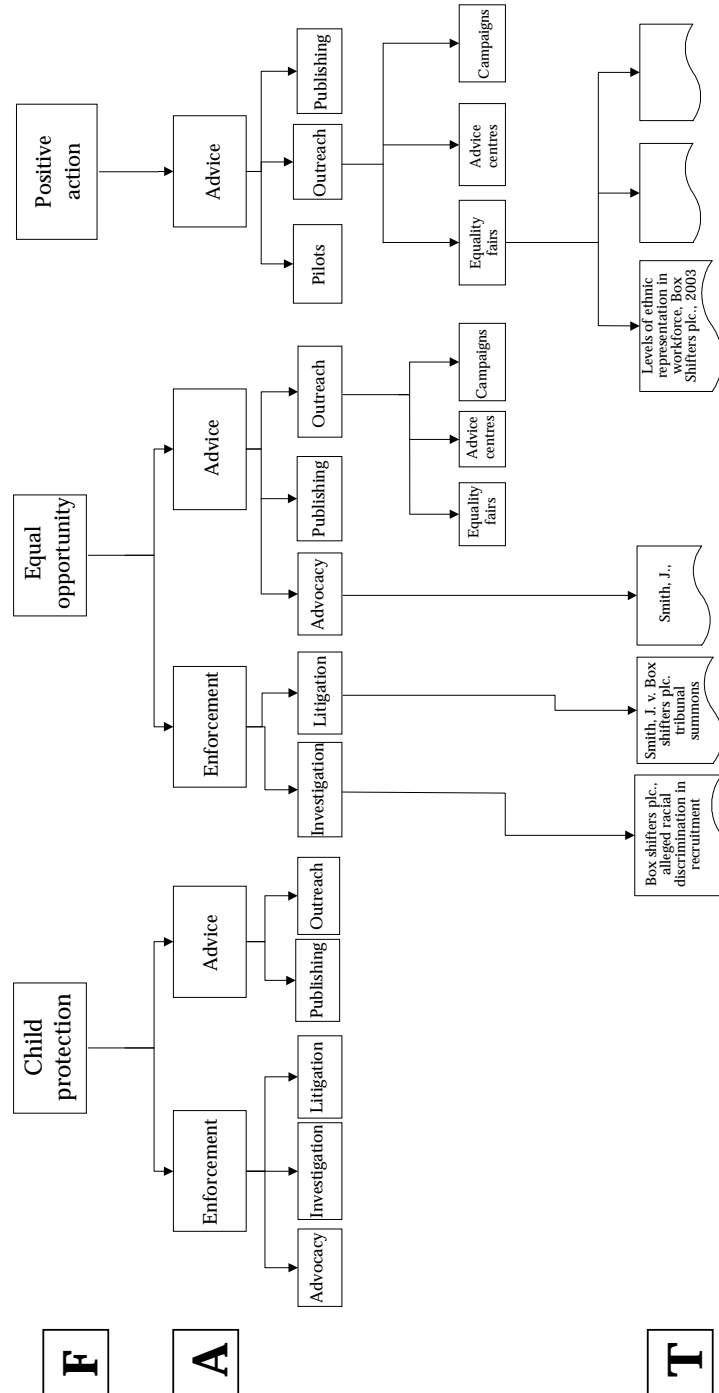
⁵⁰ for example:

⁵¹ In the Canadian model macro appraisal is also determined in this manner. In the Australian DIRKS model, there is a place for considering the existing records creation and use patterns but at a much later stage: sampling to validate the evolving retention criteria and to pinpoint why usage patterns are not what was expected from the analysis or why (a) records expected to be produced are not and (b) records that might not be needed exist.

⁵² <http://www.naa.gov.au/recordkeeping/dirks/dirksman/dirks.html> and <http://www.records.nsw.gov.au/publicsector/DIRKS/final/title.htm>

⁵³ <http://www.records.nsw.gov.au/publicsector/DIRKS/final/casestudies/casestudies.htm> and <http://www.naa.gov.au/recordkeeping/dirks/working.html> respectively

Figure 2: Functional approach



General observations on functional approach

Note that the parts of the organisation previously concentrated in the London office have very little overt presence in the structure of the functional BCS. Users in these functions would be expected to gain an understanding of which of the ultimate objectives of the Department they are contributing to and creating records for. This would ideally be achieved through the business analysis involved in compiling the Classification Scheme. This involves engagement by those conducting it with business managers and staff representatives in those organisational units: it is inadvisable to attempt it by work confined to the information management function and/or a consultant group. It has the potential to allow the understanding of the semantics of the functional scheme to be more readily understood by staff. For example:

- It is not a core function of the DEaD to run a press or private office, but activities carried out by those organisational units are correctly ascribed according to the functions they do serve with that particular activity (facets of stakeholder management: public and parliamentary relations respectively)⁵⁴.

Administrative functions

The internal administration functions of DEaD could be dealt with by using a generic functional administrative thesaurus, such as Keyword-AAA although care would be required with the semantics of such an off-the-shelf product in both the main terms and the scoping notes.

There should be no need in the electronic environment for such routine duplication of records from these functions. Access can be provided across sites and – through the use of functional access control mechanisms - controlled to the relevant staff. Managers can access the same records as finance and HR staff to exercise their devolved responsibilities although the specialist staff remain in Warrington. This is a means of realising a substantial benefit in terms of DPA compliance controls.

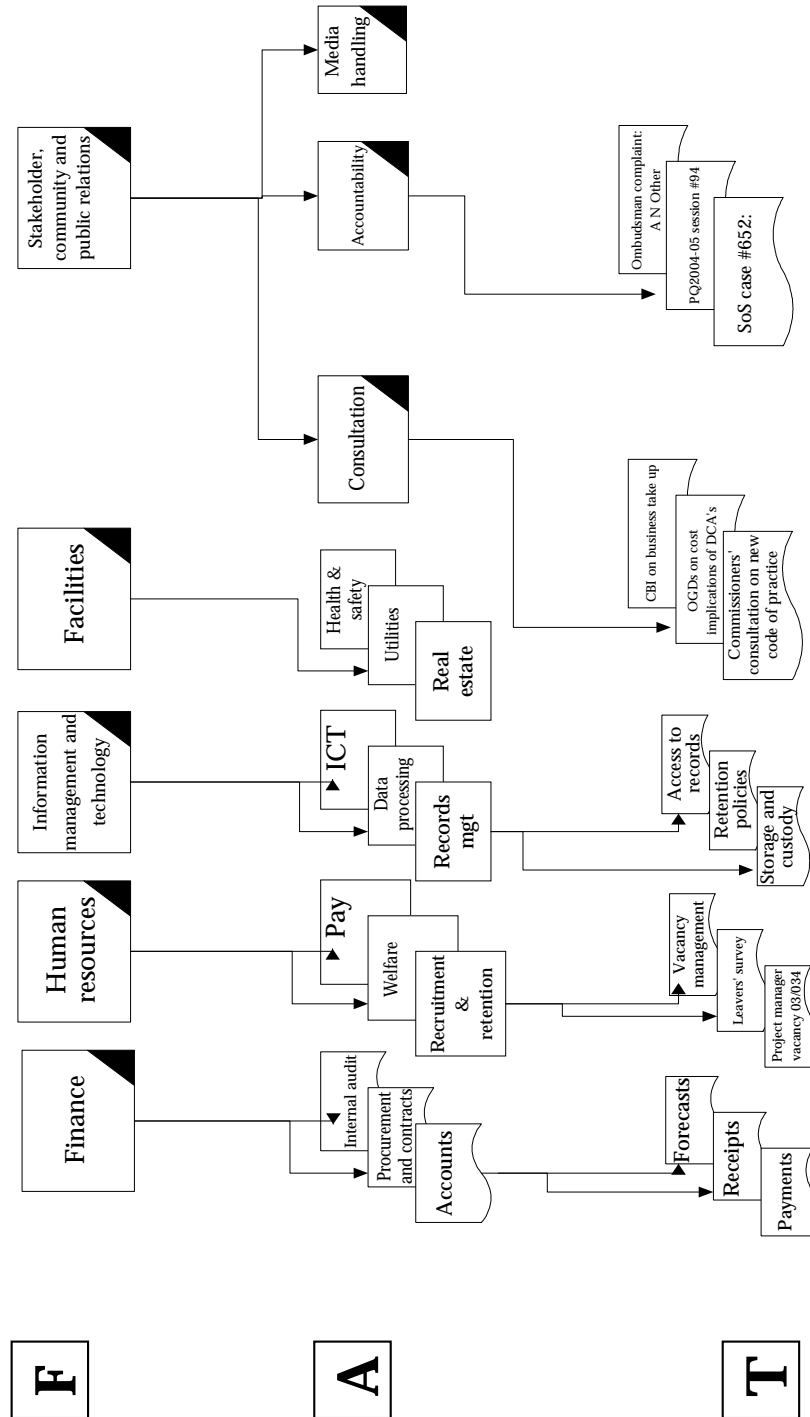
One thing to watch would be the easy trap of assuming that DEaD's own equality and diversity agenda for how it treats its staff, job applicants, service users is part of the operational functions. This is a mistake: many internally facing functions of departments have operational functions that bear some superficial resemblance. The difference between them is often clearer if the simple question is asked whether they are internally or outwardly focused⁵⁵.

Figure 3 contains an expanded view of the administrative functions area of Figure 2.

⁵⁴ Arguably this type of discussion could clarify employees' understanding of their role in the DEaD's work and promote further beneficial change – see discussion in previous paragraph. If this is skimmed, it could result in presenting staff with alien terminology (e.g. in BCS term and folder titling) and discouraging records capture and other use of the ERMS

⁵⁵ A more direct comparison between the internal financial management of HM Treasury and that organisation's management of the economy is even more stark. A term "Financial management" could be understood – if not accompanied by good scoping notes and other user support – to cover both

Figure 3: administrative functions



Functions, activities and transactions (see margins of Figures 2 and 3)

A number of characteristics emerge from the graphical representations:

- Figure 2 has sub-activities existing between a number of (but not all) activities and transactions. These assist – as sub-functions may - to explain the semantics of the classification scheme and make it browsable from level to level but their primary purpose is to describe distinct [sub-] activities. Before inserting sub-activities, sub-functions and sub-transactions into functional schemes for purely semantic reasons, consider whether adjusting the titling of the next level could make them completely redundant;
- There are similarities between the activities shown underneath ‘Child protection’ and ‘Equal opportunities’, but they are not identical. This is because of the coincidence between the functions, not because activities should be slavishly duplicated across all functions
- There would need to be business rules to explain possible misperceptions or ambiguities for users looking at the BCS. For example:

(a) At the lowest of these levels, there are a number of illustrative transactions hung on the structure. These could possibly be broken down further;

(b) Given the core statutory duties of DEaD there could be confusion between its outreach work and stakeholder relations (an administrative function). This would require careful scoping notes.

Case files

If transactions are broken down to their simplest instances using the functional methodology, then theoretically case files are not permitted. This is because a case file is a type of file that takes a ‘subject’ criterion, such as a citizen’s or organisation’s name – and uses it as a convenient container for several (often sequential) transactions that properly belong to different activities. In some circumstances, they could even belong to different functions.

For example, the classification nodes in the scheme where John Smith’s contacts with the DEaD about his attempt to get a job with Box Shifters plc. occur are spread across different functions (‘Positive action’ and ‘Equal opportunities’) and different activities under the ‘Equal opportunities’ function (‘Enforcement’ and ‘Advice’). Applying the functional approach strictly would mean that these should be in their rightful place according to the logic of the BCS and therefore separated out.

ERM technology can be used to relate these linked transactions otherwise than through the aggregations of the BCS. Such an approach can support a robust approach to disposal with categorisation of the disposal criteria according to the business needs for the records of the individual transactions. This will mean that the case file is a ‘virtual’ rather than an aggregated entity and not all the ‘content’ (linked objects) will be retained for the same amount of time.

Adopting the hybrid approach: functional at top levels, subject-based at lower levels

A hybrid approach mixes two approaches. The main advantage of this is to promote user acceptance by using subject terms at the lower levels whilst taking advantage of a more broad-brush approach to disposal by a functional organisation at a higher level⁵⁶.

This is a variation on the previous BCS. The top levels of the BCS are identical, but the lower levels are organised on a subject basis (see Figure 3). This has the advantage that it more easily accommodates case files in the traditional manner. These can be seen under the Child Protection and Equal opportunities functions, where there is a flatter structure implied and the case files would be self-indexing according to their 'subject' (i.e. the identity of an individual, organisation, etc.).

Disposal could operate either on the macro or the micro level (see main text of this toolkit on appraisal issues, Section 3) according to business needs and the agreement in place between the organisation and the National Archives' client manager.

Applying the hybrid approach

Returning to the case of *J. Smith v. Box Shifters plc.*, it could be far more convenient for the DEaD to construct a case file for (for instance) the entire dispute between Mr. Smith and the company. This would be indexed by his or their details and could contain the advice given to him, the investigation and the formal tribunal stage. Alternatively, it could be determined that only the activities under the 'Equal opportunities' function should be contained in such case files.

The following diagram shows how adopting a hybrid approach – breaking out of the strict functional scheme at a particular level to incorporate case material or other type of subject arrangement – could be achieved. The same structure is shown for other areas in this example.

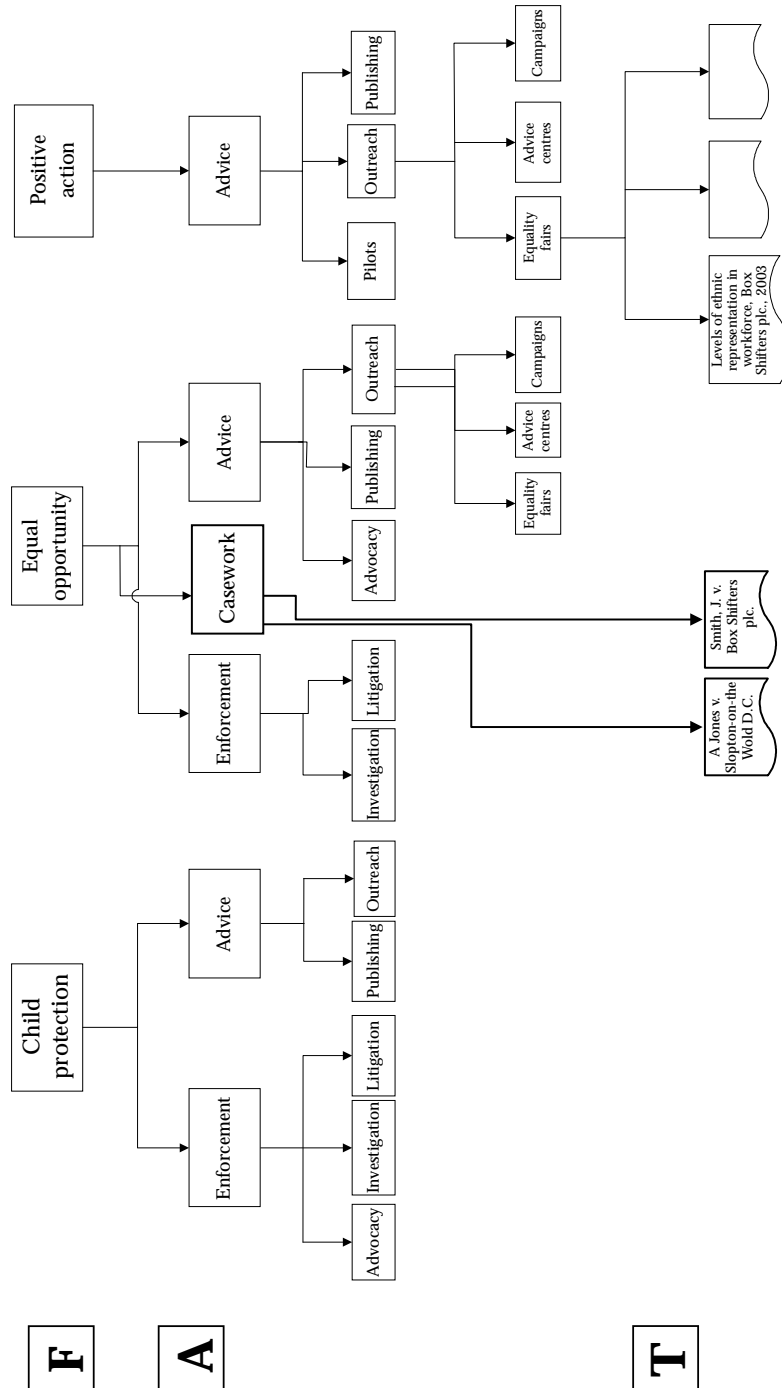
To accommodate case files potentially incorporating both the 'investigation' and the 'enforcement' activities under the 'Equal opportunities' function, the scheme moves to a subject principle in a controlled way in the area shown. The case files are 'auto-indexed' by such criteria as personal or organisational names or case identifiers of other types⁵⁷.

[The same broad approach could be used to indicate the existence of a structured database that does not pass records to the EDRMS, as suggested in Section 5].

⁵⁶ Subject to agreement with the National Archives client manager and any OSP in place

⁵⁷ Some examination could be given to the incorporation of such a scheme at a higher level also to incorporate the transactions under the Positive action function. A pragmatic assessment would probably have to be made about how regularly contact with the same correspondents would happen across the top level functions and how important it might be to bring the transactions together

Figure 4: Hybrid approach example



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