CABBAGES AND KINGS
Keynote Address to TRIM Users' Forum (TUF 10), at the Atrium Hotel, Mandurah, Thursday, 11 September 1997

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I am holding in my hand a strip of pink ribbon or tape. This particular shade of pink is the colour which red tape fades into after many decades.

As many of you will know, red tape was once used to keep records. A letter came in and was registered (i.e. assigned a running number from a register kept in a big, leather-bound book). These registers, unlike their more recent successors (kept on cards or on computer) documented the arrival in the registry of each individual letter or message. As this registration process evolved, as we shall see, they stopped entering letters as they arrived and registered instead the files onto which arriving letters were placed. Placement on a registered file taking the place of registration of the incoming letter.
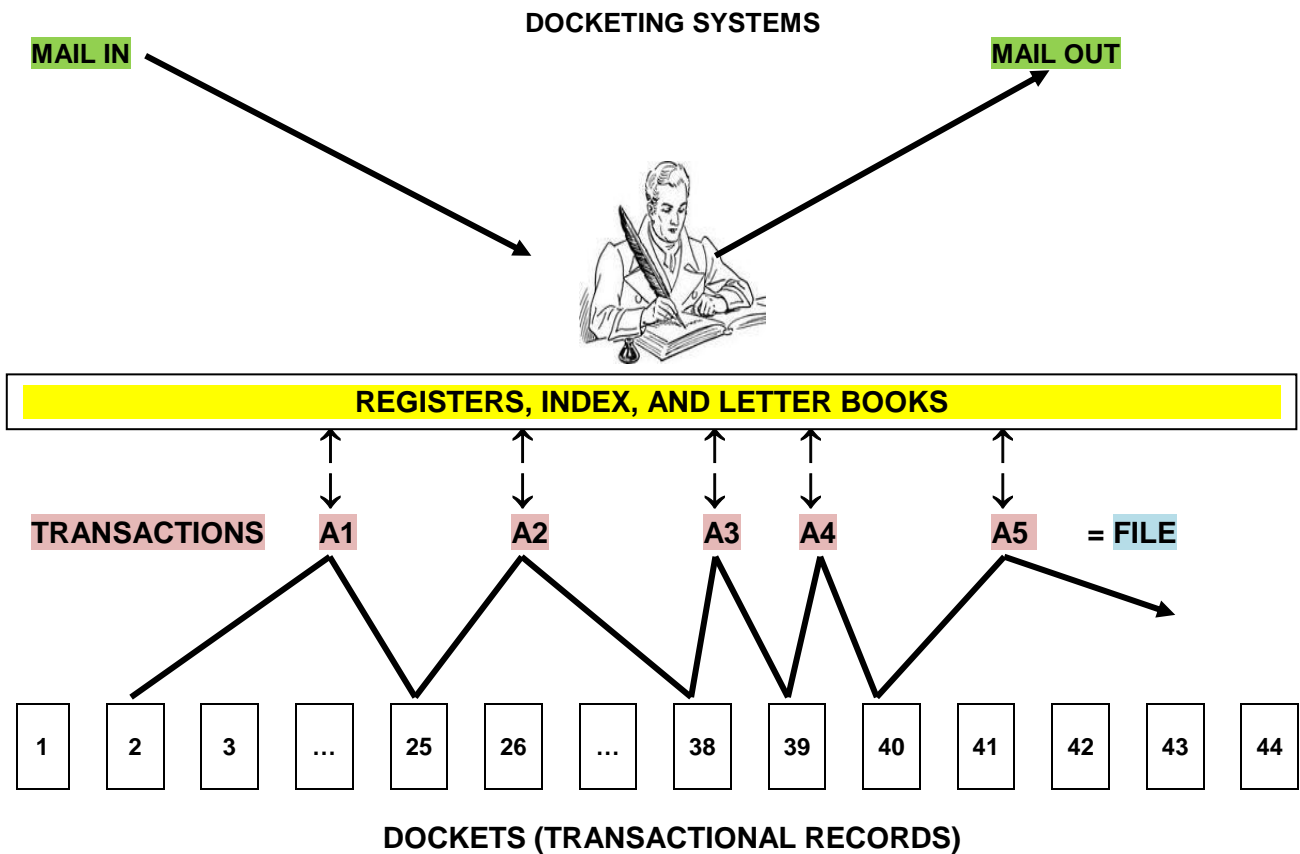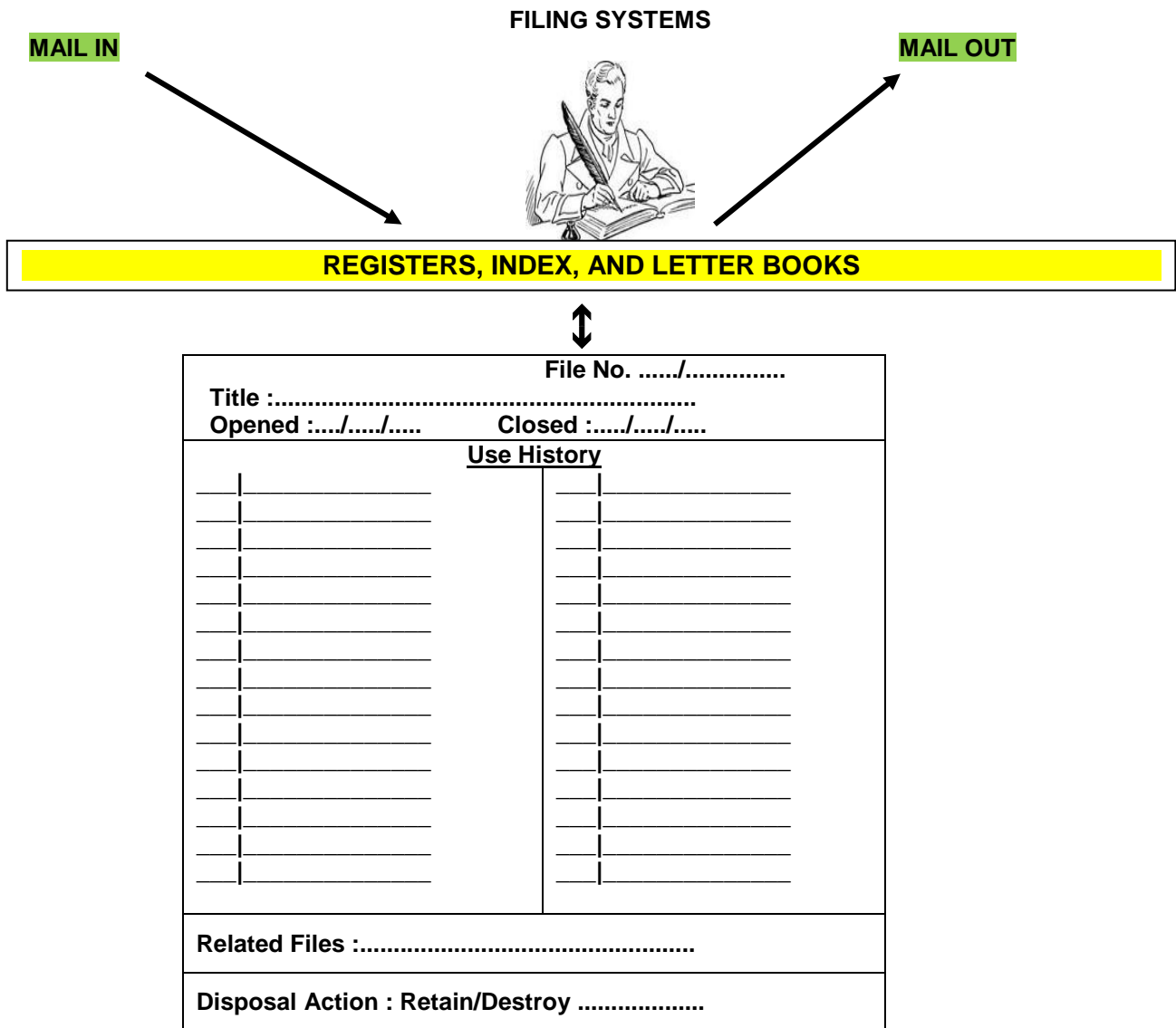

DOCKETING SYSTEMS

DOCKETS (TRANSACTIONAL RECORDS)

Figure One

In letter registration systems, called docketing systems, the letter was passed from hand to hand as business was conducted and, together with any attachments, folded lengthways down the middle with the registration number written on the back[1] - facing out. This folder was a docket. Fresh papers could be added to the inside so that the number on the back was always visible.

The registers gave you a chronological record of the dockets arranged by order of receipt. In addition, index books were compiled to assist in finding your way to the registration number(s) you needed by name of correspondent or by subject and sometimes by place or activity. When a reply

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[1] Sometimes a separate cover was used.

was prepared, it was copied into a letter book (a large bound volume into outgoing messages were copied by hand before despatch). The replies could be cross-referenced to the docket by annotating the register by number or date of despatch. When the reply had gone, the docket was filed into a pigeon-hole with the numbers showing so you could run your eye along and find the one you wanted.

FILING SYSTEMS

MAIL IN

MAIL OUT

REGISTERS, INDEX, AND LETTER BOOKS

File No. ....../...............
Title :..
Opened :..../...../.....   Closed :...../...../.....
Use History

Related Files :...

Disposal Action : Retain/Destroy ....

Figure Two

If another letter came in on the same matter, the whole process began again. The new docket number would not be the next registration number in the sequence because different transactions would have intervened into the chronological sequence of registrations. So it became necessary to make a connection between related dockets with numbers far apart in the registration process by annotating the registers to show the connection.

The record of a transaction, therefore, was made up of several dockets filed separately and read in conjunction with letter book copies of outgoing replies - all brought together by entries in the register book. Today, we would call this a virtual file.

Eventually, it became common practice to bring dockets together physically by "top-numbering" earlier dockets into the latest one. The original registration placed a top-numbered docket logically into the recordkeeping system. The top-numbered entry placed it physically. If you went from the

index to the first number (or to any number in a top-numbered sequence other than the last where all the papers eventually resided) you still needed the register to tell you the new number under which it was now filed.

With the introduction of mechanical copying, letter books were given up in favour of carbon copies of outgoing letters brought together with dockets. At this point, they stopped registering each new piece of incoming business and what you now had instead of a docket was a file.

With filing systems, you register a topic or process (or an instance of the application of a process). The first papers on a file may only deal with one of many successive or different transactions which the file will eventually document. Instead of registering each transaction, you assign (classify) each transaction to the file on which transactions of that type are kept. The file, it should be noted, becomes the process by which individual transactions are registered. Files are not, therefore, just a means of organising transactional records. Each file is itself a recordkeeping system. Papers on file derive evidential value by virtue of that fact which they would not have if left loose, because the file represents evidence of a business process which gives meaning to the documents it contains.

This method has advantages. You can go straight from the index to the file - bypassing the need to consult a register. Also, it documents activity at the level of a business process or function which is a more sophisticated and useful analysis of business activity than merely registering each successive transaction or instance of a business process. But filing systems also have the defects of their strengths. They do not satisfactorily document each transaction - like docketing systems did. If a docket is lost, you still have a substantial record of the transaction left in the register and index which necessarily contains a summary of each transaction. If a file is lost, you lose just about everything.

This brief history of recordkeeping up to the dawn of the computer age demonstrates how different methods were used to do the same thing. The purpose did not change - it was always to keep good records of actions, events, transactions, whatever and to be able to find them again.

What changed was the manner of doing it, affected by -
   a) Technology : The introduction of letter press and carbon paper, for example, which made letter books a thing of the past, and
   b) Economics : The cost of registering transactions.

Once upon a time, letters and memoranda were the only ways of conducting business (memoranda being an internal letter or message). Post and messengers were the ways of communicating. Dockets and files were how we recorded communications.

Now, we have telegraph, 'phone, fax., email, voice-mail, groupware, and a dozen different ways of conducting business - often incorporating several methods at once. How has this impacted on recordkeeping? Well, we know we have a problem.

One response has been to embrace technology - to think that records management now means understanding and using the tools which information technology supplies. Another response has been to shift records management over into a concern with information management and retrieval. Yet another response, my response, is to go back to basics and ask, "what is a record?" because, until we know that, we can't say what we need to do to make and keep records in the new environment created by the technology.

Those of you who have attended RMAA conferences these last few years know that there are few questions more likely to raise the temperature of the room. Some people think it is question that doesn't need asking. We know what a record is - that's our business. To even ask the question is either ignorant or insulting.

The problem is that records managers became used to describing (and therefore defining) records in terms of the systems they were used to dealing with and because these systems lasted a long time and changed slowly, circumstances did not require them to spell out definitions of records independently of descriptions of the materials they dealt with on a daily basis.
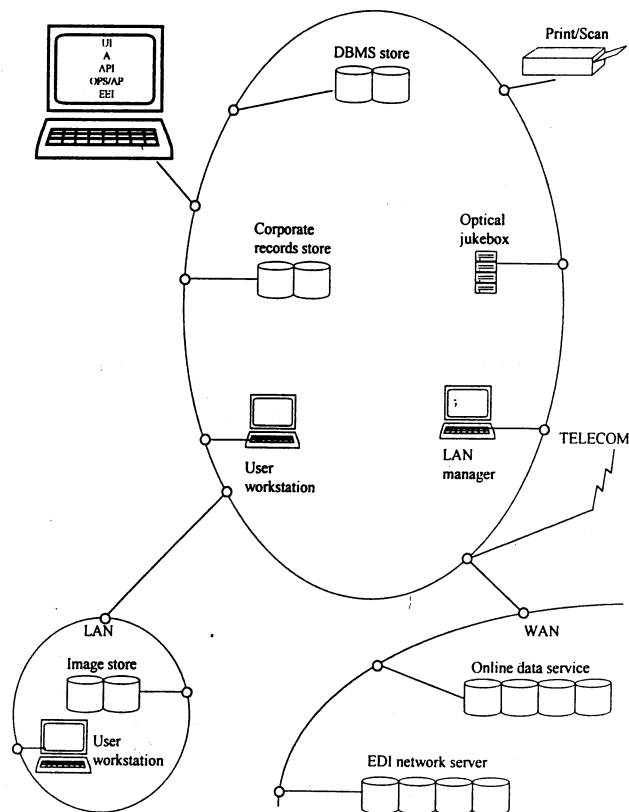

Figure Three

Records were files of correspondence controlled in a registry environment by registers, indexes, and movement cards. They were agenda papers and signed copies of minutes They were invoicing and payment systems, ledgers, and audited account books. Records were defined in purely physical terms as : correspondence, volumes, indexes, computer tapes and disks, film and photographs.

Records, thus defined, were things, dropping out of the business process which it was our jib to manage. Records were actually created by the business process, but records management wasn't concerned with that. Our job was to manage them once they came into being. The action officer wrote the letter; our job was to ensure he put the file number on it, sent it out through registry, gave us a copy to put on file which we could date stamp and mark as sent - ensuring that it had been initialled by the person who signed the original.

The text-books actually spoke of records "falling" out of the business process. There were chapters on opening the mail, classifying, registering, filing, indexing, moving, despatching, imaging, appraising, disposing, and storing. What's wrong with this list is that it doesn't say anything about making the record in the first place. It's a list of things we do with records once they exist. Records were something that someone else made and we dealt with the results. I have likened this to the cabbage patch syndrome.

- "Please, mummy, where do records come from?"

- "Well, dear, when mummy and daddy want a new record, they wish very hard and, in the morning, when they go into the garden, there's a new record waiting under a cabbage leaf. And then we take it home and look after it."
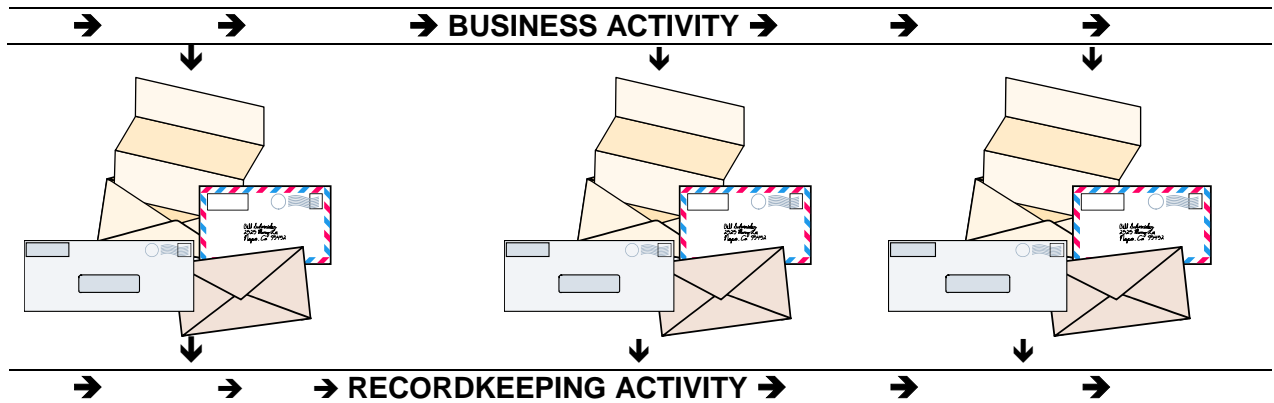
Figure Four (The Cabbage Patch Syndrome)

We can manage records so long as someone goes on making records and leaving them under cabbage leaves for us to find. So far as true recordkeeping is concerned, archivists and records managers are thus cast as cargo cultists looking up and waiting to catch records as they fall from the sky. Their task begins when the records drop into their arms. Questions like :
- How can I make a record of x?
- Should I make a record of x?

are excised from their professional concerns.

In dealing with electronic records this has led archivists to debate essentially pointless questions about how to preserve electronic records which are answered in the same manner as we used to talk about preserving pieces of paper. There are proposals for solutions based on conversion (of something) to common formats which begin with the assumption that something worth preserving in common formats already exists. It is taken for granted that what we do will be preceded by a process (in which we are not involved) for creating the something that's worth preserving - i.e. records.

Our job is to evaluate (appraise) them. Once we've done our stuff, we "transfer" the ones we deem to be of "continuing value" into the common format. If you think that electronic storage capacity makes disposal obsolete, you just transfer everything into the common format. It's just like we've always done - and isn't that a comforting thought! But all of this assumes that there's someone out there making records and putting them under cabbages for us to find.

In the electronic world, archivists cannot appraise records in the traditional sense for the simple reason that there will be no records to appraise. Until we
have re-engineered at least some part of what we used to think of as the "appraisal" task (we haven't yet worked out what part) and take it forward into the creation task, we will go on looking up into the sky, but nothing is going to fall from it into our arms.

Yes, our data warehouses will fill up with something and archivists will rush about "appraising" something. The rest of us will be trying to deconstruct and reformulate the appraisal process. In the electronic world, much of what was traditionally part of the appraisal stage of the life-cycle is now (necessarily) synonymous with creation. If we try to maintain the distinction between creation and appraisal, we simply cut ourselves out of the most important part of the appraisal work.

We should not be encouraging agencies to go on offering us records for evaluation prior to destruction. The decision to create a record reflects a decision about the need for it (the need to

document a process) and this decision embodies all the key elements of an appraisal process. In traditional terms, this decision was seen as comprising three sequential stages :

- Should I make a record?
- For how long should I keep it?
- Can I destroy it now?

Paper transactions left a documentary trace, the only decision needing to be made was whether or not to file it. This administrative decision did not include any of the elements of disposal (except, maybe, how long should I keep it?). Electronic transactions will leave no trace unless there is intervention to capture records of specified processes and maintain them for a specified period – a decision, in other words, about which documentary traces should be captured as records (or, if you don't like that formulation, which records should be preserved).

If we are going to make records, and not just manage them, we have to know what a record is. The essential distinction is between records and other kinds of information.
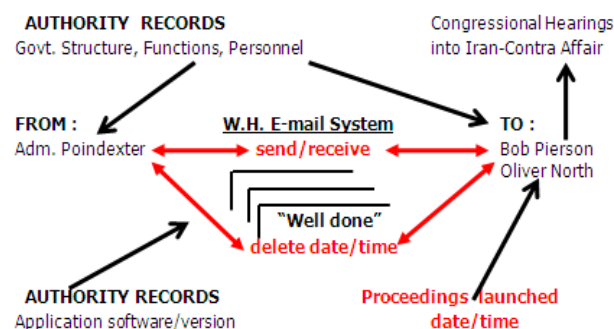
Information out of context...

"Well done!"

3

Figure Five

What you see here is information[2]. It is a real world example. It is an email message. It was found on the White House email system by congressional investigators. An attempt had been made to get rid of it by someone who thought that messages disappear when you press the delete button. Recovered, it was possible to discover something about how the message was sent, between whom, and in what circumstances.

Information in context...

AUTHORITY RECORDS
Govt. Structure, Functions, Personnel

Congressional Hearings
into Iran-Contra Affair

FROM :
Adm. Poindexter

W.H. E-mail System
send/receive

TO :
Bob Pierson
Oliver North

"Well done"
delete date/time

AUTHORITY RECORDS
Application software/version

Proceedings launched
date/time

4

Figure Six

We know it was sent from Admiral Poindexter to Bob Pierson. We know that it was in reply to an earlier message informing Poindexter that Oliver North had just completed his testimony before the Senate investigation into the Iran-Contra Affair. We know Pearson had told Poindexter that North had lied and that he had gotten away with it. This was Poindexter's reply.

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[2] I apologise to those of you who have seen this done elsewhere.

The actual message consists of two words. Standing alone they are virtually meaningless. Connect them with the knowledge I have just outlined about when the message was sent, between whom, and in relation to what and trace the connection with another message in a chain of events making up the transaction between them and you have a record.

A record is information which evidences an event by virtue of the knowledge we have of the connection between the record and the event of which it is evidence. What makes a record different from other kinds of information is the interdependency between the information the record holds and the event or circumstance with which it is connected.

In an electronic world, where documents pass through numerous versions, only one can be the record copy of a particular event or circumstance because only one will have been involved in the event.

On this view, things which fall out of the business process (email messages, for example) are not records unless the connection between the text and the process is captured (documented) and maintained along with the text itself.
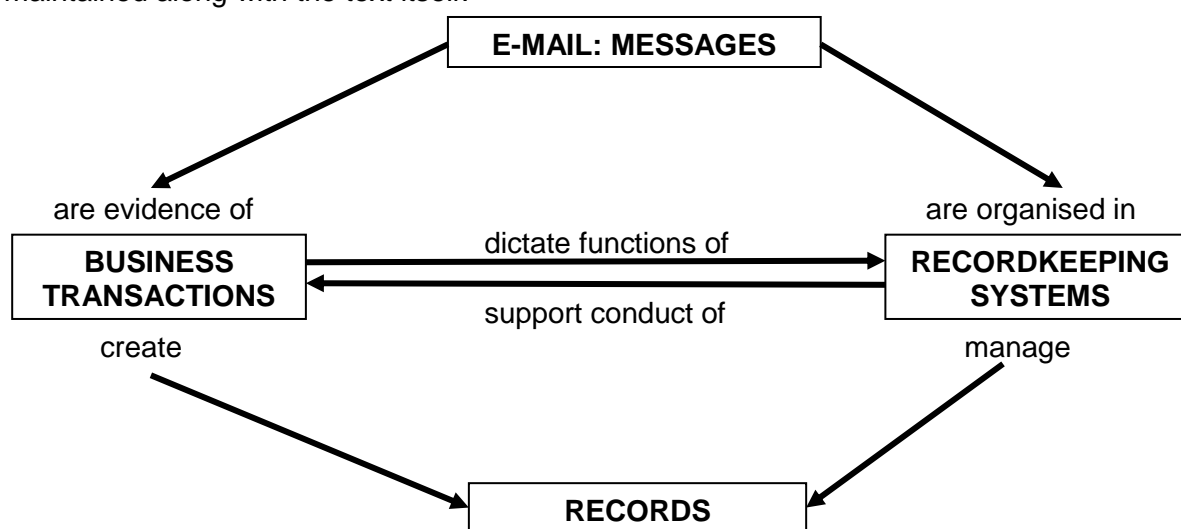
Figure Seven

A document can properly be called a record when it is evidence of a business transaction. Thus records can be defined as those documents which are the creation of a business transaction. If the connection is lost, the record disappears - even if the text remains.

One way in which the connection is maintained is by organising documents into recordkeeping systems. Thus recordkeeping is an active intervention to create records which would not otherwise exist - not simply a preservation of records created by someone else.

Recordkeeping processes and business processes are interactive - the recordkeeping system being both the product of and supportive of the business process. Thus the recordkeeping system must be designed with the needs of the business in mind, it cannot be purely a set of methodological rules applicable in any situation.

In the paper world, records managers and archivists managed forms and materials which changed very little and very slowly. They had, in effect, stopped thinking about how records are made - because the making of them seemed such a routine part of the business process. All their attention was focused on how to handle the product - sort, file, index, move, store, dispose.

With the advent of electronic records, the change to material and form was rapid and fundamental. Where in all this (see Figure Three) is the record?   The text will be stored in the data store (here optimistically called the records store). But we entered the electronic world with no established conventions about what form an electronic record should take and, more significantly, no methods for connecting text (whether it takes the form of an electronic document or data in a table) with the circumstances of its creation and use.

University of Pittsburgh
School of Information Sciences
Functional Requirements for Evidence in Recordkeeping

CONCIENTIOUS ORGANISATION
    1.   <u>Compliant</u> The organisation knows what it has to do & does it.

ACCOUNTABLE RECORDKEEPING SYSTEM
    2.   <u>Responsible</u> Procedures must be known and someone must be responsible.
    3.   <u>Implemented</u> When business is transacted, RKS must be used.
    4.   <u>Consistent</u> RKS must produce the same outcome every time.

RECORDS : CAPTURED
    5.   <u>Comprehensive</u> When business is transacted, a record must be made.
    6.   <u>Identifiable</u>   You must know what it is a record of.
    7.   <u>Complete</u>
        7a.   <u>Accurate</u> : The content can't be wrong.
        7b.   <u>Understandable</u> : Its meaning must be clear.
        7c.   <u>Meaningful</u> : Its context must be understandable.
    8.   <u>Authorised</u> The creator of the record must have been competent to act.

RECORDS : MAINTAINED
    9.   <u>Preserved</u>
        9a   .<u>Inviolate</u> : No one can tamper with the record.
        9b.   <u>Coherent</u> : Content and meaning can't be changed.
        9c.   <u>Auditable</u> : You know what uses have been made of the record.
    10.   <u>Removable</u> Records can be destroyed w/o removing all traces.

RECORDS : USABLE
    11.   <u>Exportable</u> You must be able to move the record without changing it.
    12.   <u>Accessible</u>
        12a.   <u>Available</u> : You must be able to view the record.
        12b.   <u>Renderable</u> : The record must always look like it did.
        12c.   <u>Evidential</u>: Users must know the context of the record.
    13.   <u>Redactable</u> You must be able to censor use of the record.

Figure Eight

Business managers looked to us to tell them how, and we had forgotten. We had no viable theory of records creation outside of the paper world. Traditional systems (docketing and filing) provided the boundaries to our thinking about how to make and keep records.

They still do, of course. Just think of the icons and organising methods which are being used in today's software - folders, file numbers, filing drawers and raised tabs are all visual aids to bridge the capabilities of the technology and the limitations of our understanding of what records are.

It's just like the early days of motor cars. In a world which was just emerging from horse-drawn transport, the human mind was unable to adapt quickly to the new reality. The earliest name for the motor car was the "horseless carriage".

What we need are ideas about records which can be applied regardless of whether you are in a paper or an electronic world. Ideas, in fact, which will be true when the electronic world is superseded by something else again. There are two well-known research projects in North

America which have attempted to do this. One is at the University of British Colombia which can be approached through

http://www.slais.unc.ca/users/duranti

 and the other at the University of Pittsburgh, which can be found at

http://www.lis.pitt.edu/~nhprc

One of the products of the Pittsburgh Project has been a statement of the functional requirements for recordkeeping see Figures Eight.

This brief summary gives just a flavour of what has been achieved. They are a set of rules which must be satisfied if records are to be made and kept. Some of them are obvious and fit well our traditional theory - records must be "inviolate" (i.e. unchanged and tamper-proof) for example. Other rules may seem a bit stranger to us because they address issues we didn't have to think about in the paper world, but which the electronic world requires us to think about very much.

Understand, however, that these functional requirements[3] are meant to be a statement of what any recordkeeping system (those paper systems of the past, electronic systems of the present, and those emerging from new technologies in the future) must satisfy if records are to be created. They give us, in other words, part of the answer to the question : "what is a record?"

One of the difficulties of applying the functional requirements into the world of the data base (see Figure Three) is the dependency of the record on the particular application.
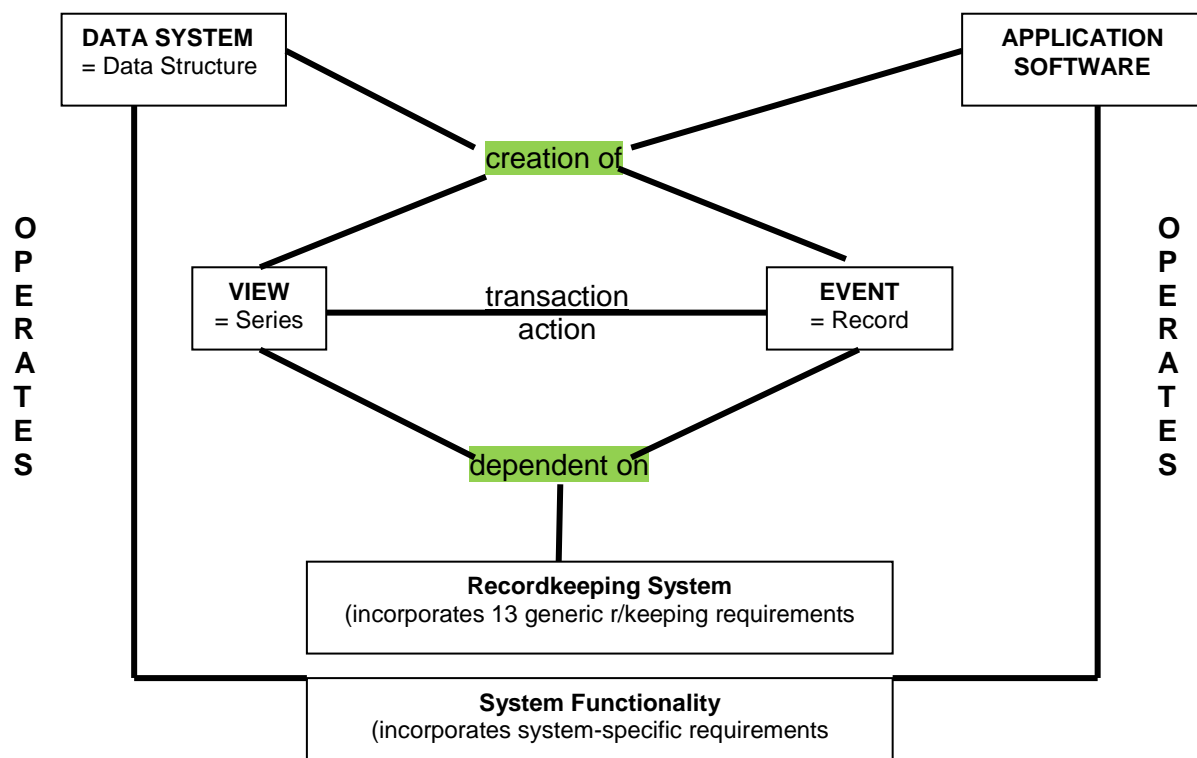
Figure Nine

In a data base system, the record of a single event or circumstance is simply one instance in a series of views made possible by the system. In order for the system to capture all the necessary contextual data about the event to which the data is connected, the system must be designed to
   • recognise when a recordable event is occurring

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[3] No one claims, by the way, that these represent the last word. They represent the results of research to date and are being put forward for discussion and testing. In time, they could be modified and added to.

- ensure that sufficient knowledge of the event (metadata) is captured
- maintain an inviolate connection between the two, and
- reproduce both text and context when needed.

In these circumstances, it is the survival of the system which ensures the survival of the record. The record is system-dependent. When systems are upgraded and data is moved into a new environment, how are we to preserve the record?

One answer is being provided by David Bearman[4] who suggests that in the future records might take the form of metadata encapsulated objects. Here is my visual representation of what I think he means (Figure Ten).

The technology we are using is that of the object oriented environment. I can't pretend to be able to explain this very well, but very simply (as I understand it) it is the technology devised for the Internet. When you download something what you see is text or data which is being presented to you by your application (or system), but you are able to see it and work with it because some part of the operation is being run by code or metadata which you can't see and which the object brought with it across the network. Without this metadata, your system would not be able to read and make use the data itself.
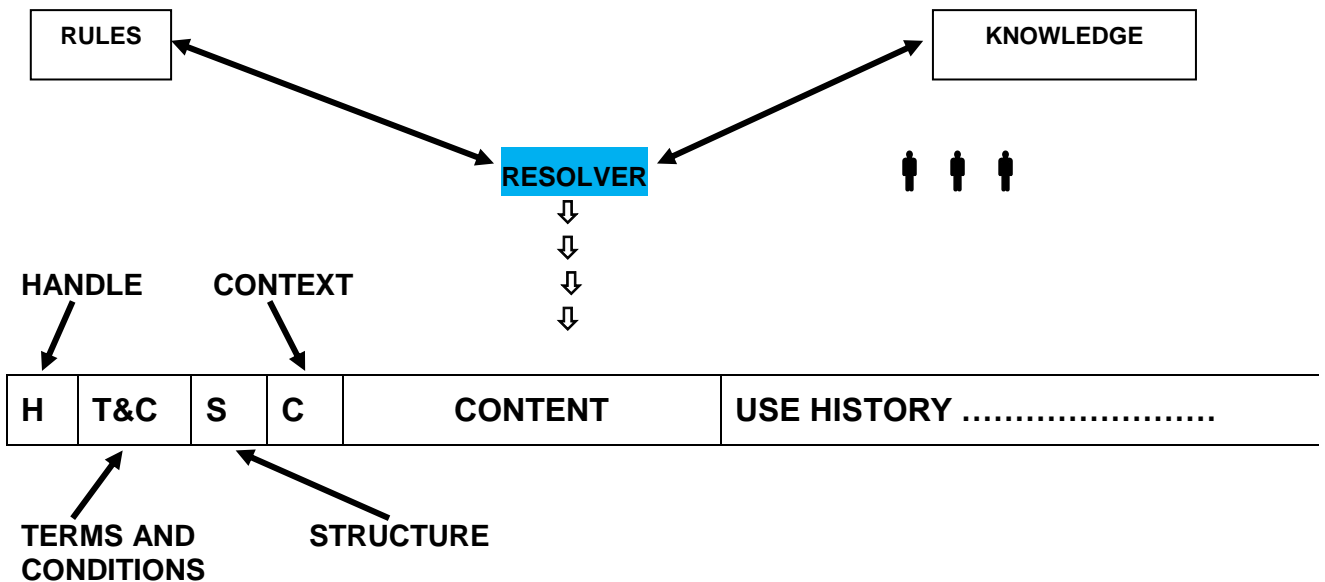

Figure Ten

The idea is, therefore, that each record - each transaction or instance - will be captured as a metadata encapsulated object carrying with it (in the form of metadata) all the functionality and contextuality it needs to survive as a record outside of the system in which it was generated - thus solving the problem of system dependency.

The actual data content is contained in a single content "layer". Each of the other layers contains metadata needed for the record to be maintained[5]. Sue McKemmish has tried to summarise these other layers (Figure Eleven). You will see many of the same features turning up here as we saw in the functional requirements. Inviolability is here, for example, in the terms and conditions layer under access conditions and use conditions.

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[4] David Bearman, "Item level control and electronic recordkeeping" *Archives and Museum Informatics* (Vol.10, No.3) 1996, pp.195-245.

[5] We are here talking about that metadata need for it to survive as a record.

The very first thing that the metadata identifies is the fact that the object is a record : "Hello, I'm a record!" This enables a record to be distinguished from any other data in the system. Thus, when the time comes to replace the system , the first thing you would do is run some software over it to rescue all the records. The call would go out, "records to the lifeboats" and all the little records would come rushing up saying "I'm a record, I'm a record". Then they would pull away in their lifeboat as the doomed system sinks silently beneath the icy waves.

You will have noticed, by the way, that metadata encapsulated objects share many of the characteristics of nineteenth century dockets.

University of Pittsburgh
School of Information Sciences
Reference Model for Business Acceptable Communications

REGISTRATION LAYER

Records Declaration Cluster	Hello - I'm a record!
Identifier Cluster	My name is (I'm about this type of transaction in this domain)

TERMS AND CONDITIONS LAYER

Rights Declaration Cluster	Anyone can look at me [you have to pay]
Access Permission Cluster	You can only see me if… [you're a child protection officer; I'm about you; etc.]
Use Conditions Cluster	Don't you dare delete me; I'm about to self-destruct 10, 9, 8…..; sorry, I self-destructed last October.

STRUCTURAL LAYER

File Identification Cluster	I contain these physical files.
File Encoding Cluster	I'm text/sound/image .. and I'm encoded in ASCII/x of bits per pixel/x samples per second; I've been compressed in this way and encrypted like this;…
File Rendering Cluster	I'm software/hardware dependent; I'm in Word 6; I'm marked up in SGML; ….
Record Rendering Cluster	This is how my files are linked together.
Content Structure Source Cluster	My contents are unstructured/structured in this way. The data I contain came from a person, another system, an instrument; this is what you need to know about he/her/it; the source data is protected in the following ways.

CONTEXTUAL LAYER

Transaction Context Cluster	These people (organisations) were involved in the transaction; it was part of this process/activity and governed by these procedures/policies; it was linked to this previous transaction.
Responsibility Cluster	I'm a record of this organisation/unit; I was authorised by …
Business Function Layer	I'm related to this business function.

CONTENT LAYER

Content Description	I contain …
Content Incorporated	I incorporate these other records ….

USE HISTORY LAYER

Use Cluster	I have been viewed/copied/indexed/classified/ sent/disposed of by…….(e.g. by Jane at 22.12.05 EST on 19 Aug 1996).

Figure Eleven

I believe we can now see how to make records in the electronic world. Records are not created because North American research projects tell us how or records managers and archivists say we should. The Pittsburgh functional requirements were not just thought up. They are based on an investigation of what people involved in various kinds of business transaction said they need.

The basic human need for records)(for evidence of activity) will ensure that records are created. Many of the features which the research projects have identified are to be found in the proprietary software. Those features evolved in response to user demand.

The records management software we have does not answer all these questions. We are in a period of transition, but one of the most encouraging things about the RMAA Conferences is the demonstration each year, in the Trade Exhibition, of systems which are incorporating more and more of the features which research is confirming is what is needed.

Our job is to have the specialised knowledge about what is needed to make and keep records, so that we can provide the answers which meet that need. If we can do that, we'll be able to step out of the cabbage patch. When it comes to the making and the keeping of records, we will be kings.

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