

# The Full Report of a Study of IV in PIM: The Applicability of Intrinsic Value in Personal Information Management

By

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## Abstract

This paper investigates whether the Intrinsic Value (IV) criteria for retaining originals defined by the US National Archives and Records Service (NARS) in 1980 are relevant in the Personal Information Management (PIM) domain. A model of the decisions that Owners of PIM collections may take, is described; and three types of decisions – Decisions about Content, about Digitisation and about Originals – are explored in the literature. Three practical studies assessing the NARS IV criteria and other retention criteria are described: a) a review of the reasons for retaining 344 originals that had already been digitised in a large collection of thousands of Job Documents assembled over 30 years, b) the identification of retention reasons for 90 originals as they were retained in the course of digitising 745 items in the Job Documents collection, and c) a review of the reasons for retaining 109 originals in a collection of 400 Mementos that had already been digitised. It was determined that seven of the IV criteria are applicable within those aspects of the PIM domain dealing with Documents and Mementos, subject to some changes in language and the addition of eleven other criteria. The set of 18 PIM Retention Criteria (PIMRC) that emerges from this work may be of use to owners of PIM collections who want guidance about which originals to keep; and to people who are given or inherit PIM collections and who may wish to review what they have taken possession of.

## 1. Introduction

Information Management is a term with strong associations with Computing. However, in practice, it is a topic which Librarians and those dealing with collections in general, have been dealing with for hundreds, if not thousands, of years. **Personal** Information Management, however, is a newer kid on the block, growing up within a fast expanding world of email, laptops, mobile phones, text messaging, tablets and social media systems. It is something that most of us grapple with, knowingly or unknowingly, everyday. Jones defines Personal Information Management (PIM) as referring to *“both the practice and study of the activities a person performs in order to locate or create, store, organize, maintain, modify, retrieve, use and distribute information in each of its many forms (in various paper forms, in electronic documents, in email messages, in conventional Web pages, in blogs, in wikis, etc.) as needed to meet life’s many goals (everyday and long-term, work-related and not) and to fulfill life’s many roles and responsibilities (as parent, spouse, friend, employee, member of community, etc.)”* (Jones, 2011, p3 which in turn cites Jones, 2007).

Much of the information that we deal with today is electronic, however, a significant percentage starts out in a physical form which we then digitise to reap the advantages of improved organisation, search, retrieval and interrogation that are afforded by modern computer systems. For example, old

photographs and paper documents can be digitised using a scanner; and we can take digital photographs of physical objects. At the point of digitisation, however, sometimes a dilemma arises (often because of a shortage of physical space): should we retain or destroy the original?

It was to answer a similar question that the US National Archives and Records Service (NARS) formed a Committee on Intrinsic Value in 1979 following a request by the General Services Administration to microfilm all its records and destroy the originals. NARS felt compelled to "rebut the assumption that all records were disposable," (McRanor, 1996 p402). The report it produced defines Intrinsic Value (IV) to be "the archival term that is applied to permanently valuable records that have qualities and characteristics that make the records in their original physical form the only archivally acceptable form for preservation. It goes on to identify the following nine qualities or characteristics, the possession of any one of which denotes that a record has Intrinsic Value (NARS, 1982):

1. Physical form that may be the subject for study if the records provide meaningful documentation or significant examples of the form;
2. Aesthetic or artistic quality;
3. Unique or curious physical features;
4. Age that provides a quality of uniqueness;
5. Value for use in exhibits;
6. Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination;
7. General and substantial public interest because of direct association with famous or historically significant people, places, things, issues, or events;
8. Significance as documentation of the establishment or continuing legal basis of an agency or institution;
9. Significance as documentation of the formulation of policy at the highest executive levels when the policy has significance and broad effect throughout or beyond the agency or institution.

The NARS document was a significant report for Archivists since it came at the start of an era when the combination of rapidly improving digitisation hardware and software, and plummeting costs, made digitisation an increasingly desirable option for Archivists to consider. However, anecdotal evidence suggests that the NARS criteria may not be widely used in any kind of rigorous way. For example, in interviews with nine archivists and Librarians it was found that, while most were familiar with NARS's definition of intrinsic value, most of them have their own loose definitions of the concept of Intrinsic Value which they apply when appraising items (Metters, 2011 p37 and 41).

Within the PIM arena, it is possible that the same will be true – individuals may not want to follow retention guidelines rigorously; though having such guidance may be of general assistance to either develop their own views and/or to inform their own views when appraising items. However, the author has been unable to find guidance similar to that found in the NARS report. Therefore, it would seem sensible not to re-invent the wheel, but instead to see if the notion of Intrinsic Value from the Archival domain can be usefully and effectively employed within the PIM domain. This study, then, sets out to answer the following questions:

- a) Are the NARS Intrinsic Value characteristics applicable within the PIM domain?
- b) Do the NARS Intrinsic Value characteristics need adjusting in any way to enable them to be used effectively within the PIM domain?
- c) What set of Retain/Destroy Criteria would be most useful in the PIM domain?

To explore these questions this report considers the retain/destroy decisions made by the author for two of his personal collections – a ‘Job Documents’ collection and a collection of ‘Mementos’. The aim is to provide insights which can be used to inform subsequent, wider, more generalisable studies by other researchers.

## 2. Context and Related Research

The target area of this report is quite narrow (reasons for retaining digitised originals), however it is useful to place it in a wider context of practice and associated terminology. This is described in section 2.1. Subsequent sections review related literature according to the distinctions identified in section 2.1.

It should also be noted that, while the study is aimed at contributing to understanding and practice in PIM, this section is not limited to just exploring the PIM literature but draws on experiences in the Archival and Library domains as well.

### 2.1 Context and Terminology

A definition of PIM from Jones (2011) has already been provided. Jones also describes each of us as having a unique Personal Space of Information (PSI). Personal Information Collections, referred to as simply “***Collections***” in the remainder of this report, are personally managed subsets of a PSI and are made up of Information items, referred to as “***Items***” in the remainder of this report, such as paper documents, electronic documents, digital music, emails, and web pages (Jones, 2011, p21 and 25).

Beyond these terms, a model which encapsulates reasons for keeping originals has not been found in the literature. Therefore, the following concepts and terminology are derived from the authors experience and aimed at providing the broad context within which the keeping of originals occurs. Significant terms are highlighted in Bold Italics.

Let us call the person a Collection belongs to its ***Owner***. PIM Collections belong to their founding Owners until such time as they dismantle them, give them to somebody else, give them to a public Archive, or are no longer with us. In the last case, collections may be destroyed, passed on to family relatives or to somebody else, or given to a public Archive (the public Archive destination is noteworthy in the context of this report because it is the Archive profession that defined the Intrinsic Value characteristics being investigated). The Owner at any one point of time is the ***Current Owner***, and the choices that the Current Owner makes about what to do with the collection are ***Decisions about Ownership***.

At any of the points described in the previous paragraph, the Owner at that point can make decisions about what new Items to include in the collection (either in the form of the items themselves or references or links to their locations elsewhere), or what Items to remove from it

These are **Decisions about Content**. Note that, implicit in the decision *not* to include an item in the first place, is a decision about what then to do with the item i.e. for hardcopy should you throw it away or give it to someone else, and for electronic files should you delete it or put it into some general archive or trash file – these are all potential questions which may be encountered within the Decisions about Content. However, Decisions about Content is not an area addressed by this report.

The content of a Collection may include:

- a) references or links to documents elsewhere (**Refs/Links to Items Outside the Collection**)
- b) original physical artefacts (**Physical Originals**) such as paper documents, printed photographs or physical objects,
- c) original digital files (**Digital Originals**) such as voice recordings, JPG images, Word documents, or just actual information content contained in the Collection's index itself, for example, a quote from a document cut and pasted into the index title field,
- d) digitised versions of Physical Originals such as scans of paper documents, or jpg pictures of physical objects (**Digitised Physical Originals**),
- e) physical versions of Digital Originals (**Physicalised Digital Originals**) (though these are quite unusual occurrences in the author's experience).

The Owner of a Collection can decide to digitise Physical Originals at any time (**Decisions about Digitisation**), and, having made the digital version, can decide whether to keep the Physical Original in the collection or to remove it from the collection (**Decisions about Originals** – this is the area that this report is focused on). If the Owner decides to remove a Physical Original, the Owner must then also decide whether to destroy the item or to retain it in some other way (such as storing it, giving it away or selling it).

Likewise, the Owner can decide to Physicalise Digital documents at any time (**Decisions about Physicalisation**) and, having made the physical version can decide whether to keep the Digital Original in the collection or to remove it from the Collection, though, given the minimal effort and cost of retaining a digital original, this is highly unlikely and something I personally have never encountered. It is only described here for completeness, and is not included in Figure 1 below.

Sometimes Owners decide to move parts of a Collection to a separate store, for reasons such as a shortage of space or because search results aren't focused enough. This process is often, confusingly, referred to as 'archiving' – though the resulting archive is not always the sort of Archive referred to in the Archives and Records Management profession. For example, a computer user might simply move older, less-accessed files to an archive folder; or an office worker might put a box of less useful paper into a separate cupboard. However, whatever the result of the archiving process, the Owner still has to decide what items to archive: these are **Decisions about Archiving**.

These concepts and terms are illustrated in Figure 1.

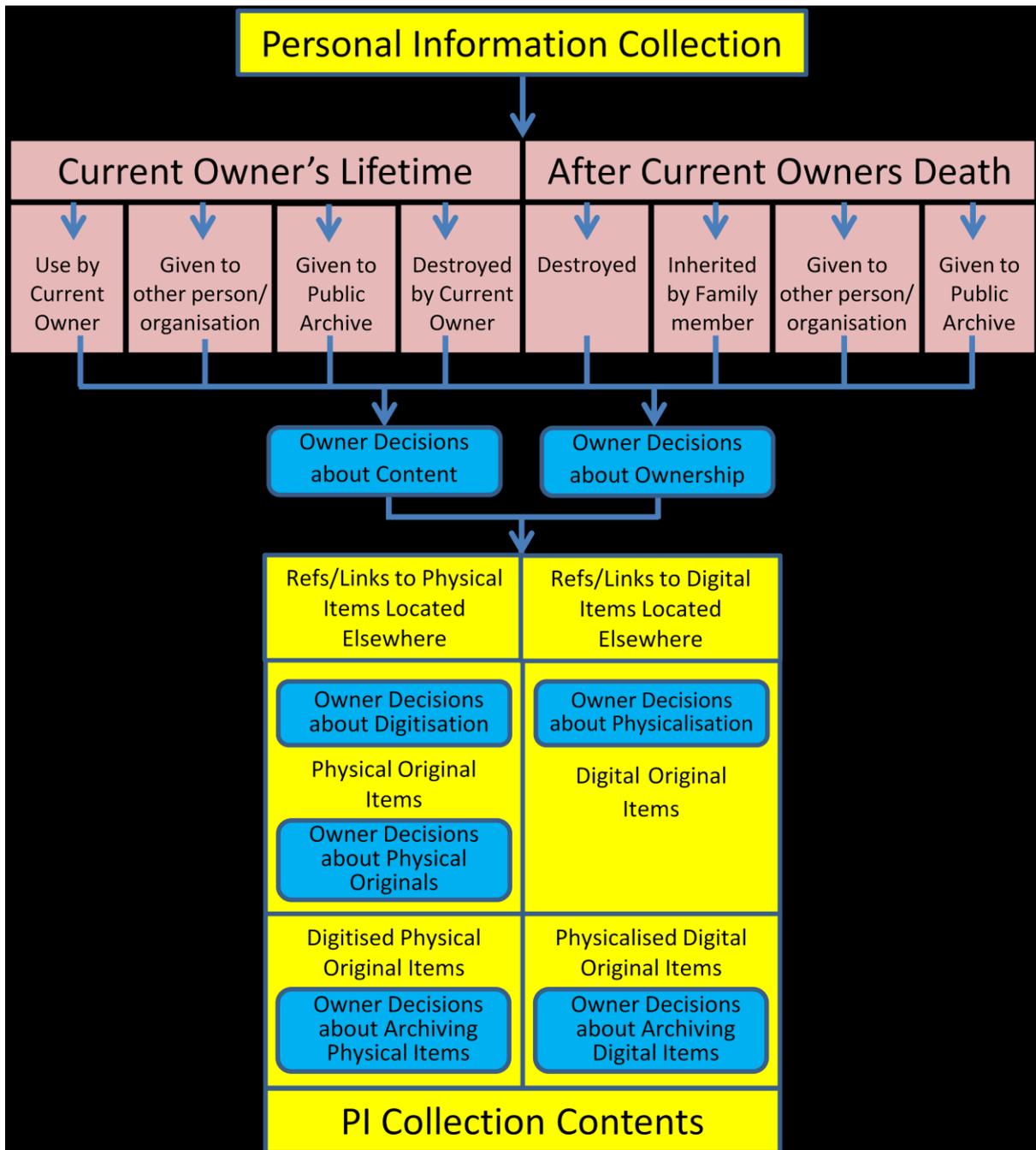


Figure 1 - Concepts and Terms relating to Decisions associated with managing Personal Information Collections

## 2.2 Related Literature

Of the seven types of Owner Decisions described in section 2.1 and highlighted in blue in Figure 1, one is about what is to be done with the collection – **Decisions about Ownership**; two involve decisions about changing the form of the content – **Decisions about Digitisation** and **Decisions about Physicalisation**; two involve decisions about archiving content – **Decisions about Archiving Physical Items** and **Decisions about Archiving Digital Items**; and two involve decisions about what to keep - **Decisions about Content** and **Decisions about Physical Originals**.

It is the final type of decision – **Decisions about Physical Originals** - that this paper is focused on, however, **Decisions about Content** also bear some scrutiny as there does seem to be a relationship between the two. For example, if people want to keep a magazine because it includes an article written by a friend, then they are making a Decision about Content. If they then they scan it, they may well decide to keep the original for the same reason – and that is a Decision about Physical Originals. It seems reasonable to speculate that some, but not all, of the reasons for including items in a collection may also be the same as the reasons for keeping the originals of the items concerned and therefore literature relating to Decisions about Content is worth reviewing. In similar vein, the literature relating to **Decisions about Digitisation** will also be considered since it is closely tied to the point when Decisions about Originals are taken and may also provide some relevant insights.

### 2.2.1 Literature concerning Decisions about Content

This section looks at reports in the literature for reasons why items are included in collections or why people keep things.

The Digital Lives Project (John et al, 2010) conducted two online surveys – one of professionals (a third of which were academics) and the other of members of the digital public (of which only about 3% were academics). Respondents were asked to think about “a recent example where you have created or acquired a computer file that is of great importance to you in your personal or working life”. In order to establish the options to give respondents to choose, the Project primarily used a literature review based almost entirely on a paper on the personal curation of digital objects (Williams et al, 2009) to answer questions such as why do people keep files, why should they, and what should be kept? The following potential answers were considered: A1. for recording past activity or events; A2. for sentimental reasons; A3. for witnessing creativity; A4. for sharing with colleagues, A5. for leaving to a successor or posterity; and A6. for future reference (John et al, 2010, p12)

In the Digital Lives survey itself, after respondents had been asked to think about a recent computer file that is of great importance to them, they were asked the following question: “What was the *primary* value to you of that particular computer file?” with the following options provided (the percentages of first the Academic group and second the Digital Public group, that selected a particular option are shown in brackets after each option): B1.colleagues (5, 13.6); B2. final version (10.6, 3.6); B3. interest to future historians (45.5, 20.2); B4. sentimental (10.2, 17.7); B5. working document (3.2, 4.8); B6. sensitive, personal or financial information (22.5, 31.5); B7. personal reference (2.4, 2.1); B8. other (0.6, 6.4) (John et al, 2010, p.31)

In addition to the online surveys described above, the Digital Lives project also interviewed 25 ‘established’ or ‘high profile’ people and established that the objects stored by this group of people are valued for their ability to C1. serve as reference information, C2. provide a source of creative work that can be re-used, C3. evoke personal memories and context, C4. promote self-esteem, C5. meet sentimental and memorial needs, and C6. witness an individual’s past effort and creativity (John et al, 2010, p9 #12)

None of these lists in the Digital Lives report precisely answers the question of why people decide to keep things – but they do give some pointers. Some other pointers come from a 2001 study of people about to move offices and who had to decide what information to keep and what to throw

away (described in Whittaker, 2011, section on ‘what do we keep and why do we keep it?’). The study looked at the properties of the information that people kept and their reasons for keeping it; and the following reasons emerged: D1. uniqueness (these data were highly associated with their archiver and 49% of it was of just three types of material – working notes, archives of completed projects, and legal documents); D2. availability (allowing relevant materials to be at hand when they are needed); D3. reminding (a personal copy prompts people about outstanding actions or simply reminds them that they are in possession of that information); D4. distrust of other archival institutions to keep the information they needed; D5. sentimental reasons ( it is part of an individual’s intellectual history and professional identity), D6. personal annotations in order to focus attention and improve comprehension of what is read (though this is only described as a potential reason for keeping personal copies so it sounds as though no instances were encountered in the study).

On the specific subject of item D5 in the above list – sentimental reasons – that term appears throughout the report of a study of values and practice in the home archiving of cherished objects. This study conducted home visits and interviews with 11 UK families (Kirk & Sellen, 2010). The report notes that “Sentimental artefacts can invoke and symbolize important places, times, things, people, and experiences. And it is through this process that they garner their value.”(p10:10) It concludes that “there are many reasons why sentimental artefacts (whether they be physical, digital or hybrid objects) are kept in the home, and these reasons pertain to six key values that underpin archiving practice”(p. 10:34). The six values are (p10:15-10-29):

E1. Defining the self (by storing things that embody aspects of one’s past, thereby triggering memories of personal events and relationships).

E2. Honouring those we care about (to draw attention to and honour others in the household or important family and friends);

E3. Connecting with the past (to draw closer to important people, places, times and events in the past; and to create a sense of a shared family past);

E4. Framing the family (display of objects to indicate “this is the type of family we are”);

E5. Fulfilling a sense of duty (to preserve artefacts for the sake of the household, for those whom one cares about, and sometimes even for no one in particular);

E6. Forgetting the past (items too important to discard but so painful they get stored in relatively inaccessible places);

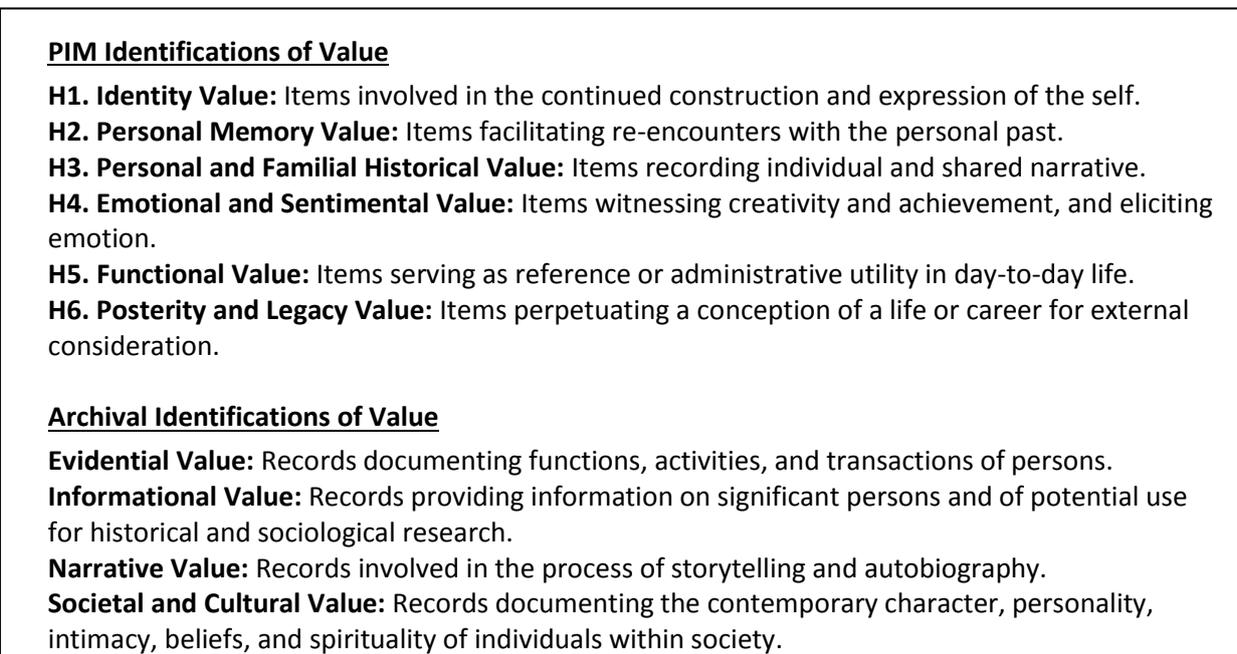
Rowlands (1993, p144) provides further insight as to why such sentimental artefacts are so widely valued: “The reason therefore why heirlooms, souvenirs and photographs have this particular capacity to evoke and establish continuities with past experience is precisely because, as a material symbol rather than verbalised meaning, they provide a special form of access to both individual and group unconscious processes.” (taken from Taylor, 1995, p13)

In another study on the home, but this time focusing on computer usage, in-depth interviews were held with twelve home computer users. It was found that the value of digital assets “may be calculated by using heuristics based on at least five factors” and that “These heuristics may be used

to organize stored materials for access and to guide any curation processes” (Marshall, Bly, and Brun-Cottan, 2007, p30). The five factors were: F1. demonstrated worth (for example, how often an asset has been replicated), F2. creative effort (for example, the asset’s genre and mode of creation), F3. labour (for example, time spent in creation), F4. reconstituteability (in terms of an asset’s source, the source’s stability, and the asset’s cost); and F5. emotional impact (a factor which may be inferred by who items have been shared with).

Kaye et al report on a study of not just computer usage but also the physical files and documents of forty-eight US academics. The study observed that the individuals concerned archived for multiple reasons and in multiple ways, yet there seemed to be five goals and uses for the archives that were common to all of them: G1. finding it later (to store and retrieve information for later use); G2. building a legacy (as a testament to personal and professional achievement); G3. Sharing resources (to facilitate access by others); G4. fear of loss (out of anxiety about losing important information); and G5. identity construction (as a reflection or expression of themselves) (Kaye et al, 2006, p2-6).

In his paper on Leveraging PIM research, Bass (2013, p51) “seeks to outline the context of creation and use of personal digital records before they are acquired by archival institutions in order to discover why, how, and where individuals create and preserve documentary forms in the digital era”. After conducting an extensive survey of the literature, Bass puts forward the “Value Folksonomy for Personal Archives” shown below in Figure 2 (the numbering has been added for the purposes of this report). He defines a Value Folksonomy as “a classification of terminology often used by both individual records creators and archivists to describe the values of personal archives.” (Bass, 2013, p66-67).



**Figure 2: Value Folksonomy for Personal Archives (from Bass 2013, p66-67)**

Bass’s folksonomy lists values in both the PIM and Archival fields. However, focusing on ‘why people keep things’ can produce a different categorisation as shown in Figure 3 – even though all of the material discussed in this section 2.2.1 is cited in Bass’s paper. Figure 3 also provides a view as to

whether originals are likely to be retained in each case if the item was digitised. The numbered points from the literature reviewed in this section that contribute to each of the categories, are shown in the second column of Figure 3.

<b>Reason Why People Keep Things (WPKT)</b>	<b>Contributing reasons from literature reviewed earlier in this sub-section</b>	<b>Would Originals be retained after digitisation?</b>
<b>WPKT1.</b> To continue to make use of the items for the purpose they were intended	A4. for sharing with colleagues; A6. for future reference; B1. colleagues; B5. working document; C1. serve as reference information; C2. provide a source of creative work that can be re-used; D2. Availability; D3. Reminding; D6. personal annotations; F1. demonstrated worth; G1. finding it later; G3. sharing resources; H5. functional value.	Maybe - maybe not
<b>WPKT2.</b> To avoid losing these items	B6. sensitive, personal or financial information; D1. uniqueness (these data were highly associated with their archiver); D4. distrust of other archival institutions to keep the information they needed; F4. reconstituteability; G4. fear of loss.	Maybe - maybe not
<b>WPKT3.</b> To be reminded about who you are	B2. final version; B7. personal reference; C4. promote self-esteem; E1. defining the self; G5. identity construction (as a reflection or expression of themselves); H1. identity value.	Maybe - maybe not
<b>WPKT4.</b> To witness high levels of creativity or hard work	A3. for witnessing creativity; C6. witness an individual's past effort and creativity; F2. creative effort; F3. labour.	Maybe - maybe not
<b>WPKT5.</b> To create a set of material for posterity or a legacy	A5. for leaving to a successor or posterity; B3. interest to future historians; G2. building a legacy; H6: posterity and legacy Value.	Maybe - maybe not
<b>WPKT6.</b> To honour those we care about	E2. honouring those we care about (to draw attention to and honour others in the household or important family and friends).	Maybe - maybe not
<b>WPKT7.</b> To frame the family	E4. framing the family.	Yes
<b>WPKT8.</b> To fulfill a sense of duty	E5. fulfilling a sense of duty.	Yes
<b>WPKT9.</b> To remember (or forget) past activity or events	A1. for recording past activity or events; A2. for sentimental reasons; B5. sentimental; C3. evoke personal memories and context; C5. meet sentimental and memorial needs; D5. sentimental reasons; E3. Connecting with the past; E6. forgetting the past; F5. emotional impact; H2. personal memory value; H3: personal and familial historical value; H4. emotional and sentimental value.	Maybe - maybe not

**Figure 3: A possible categorisation of Why People Keep Things (WPKT) and assessment of whether originals would be retained if digitisation took place**

It must be emphasised that there is nothing definitive or special about the categorisation in Figure 3. The points it is constructed from were not derived in a consistent manner or even for consistent

purposes; and the categorisation itself is only one of many ways that the items could be grouped. However, it does enable us to explore reasons for keeping originals by thinking about whether items in any of the categories would require an original to be retained after digitisation. As can be seen in the third column in Figure 3, It is thought that, in most cases, originals may or may not be retained depending on the items concerned and the Owners inclinations. The two for which it is believed that originals would definitely be retained are WPKT7 (To frame the family by putting artefacts on show) and WPKT8 (To fulfill a sense of duty to preserve artefacts for the family).

Before leaving Decisions about Content, it is worth noting that, for electronically generated files, the low cost of digital storage is tending to make retention the norm (Bass, 2013, p61)(Whittaker, 2011 section on Technology Trends).

## **2.2.2 Literature concerning Decisions about Digitisation**

This section addresses the broad reasons for digitising or not digitising items, *regardless of the quality of the resulting digital surrogate*. Detailed issues about what can and can't be captured in a digital surrogate are addressed in section 2.2.3.

Deciding whether to digitise physical originals or not is often prompted, at least in part, by a shortage of space – as was the case when NARS was prompted to create its report on Intrinsic Value. However, other reasons make digitisation an attractive proposition including the ability to access the item remotely (and thereby also enabling users to compare, side by side, individual items which in the physical world exist at separate institutions (Metters, 2011, p50); and wider access to items that are in particularly high demand or that are closely controlled for security, fragility, or other reasons. For photos in particular, Capell (2010) suggests that digitisation may enable content to be recovered from degraded negatives (taken from Metters, 2011, p19). At a more detailed level, Metters conducted interviews with ten Librarians and Archivists and they suggested the following other ways in which the look or use of an item could be improved upon with a digital copy (Metters 2011, p49-50):

- digital images can provide higher visual quality than microfilm copies made of originals;
- digitisation can make pencil writing appear more clearly;
- digitisation enables you to zoom in and examine pen strokes and grain of paper in ways you cannot with just two hands and the piece of paper.

Metters' interviews also identified the following reasons why digitisation should not be performed (Metters, 2011)

- Some items are too fragile to digitise and the handling and flattening during scanning might damage them (p48).
- The cost of the equipment and staff to perform the digitisation and subsequent management of digital content, may be more than can be afforded (p49).

Other reasons in the literature for not digitising include the following:

- Perminova et al. (2006) studied the effects of three different types of scanner on the physical properties of three different types of paper. The study concluded that digitization affects the tear resistance and relative lengthening of paper, as well as the growth and development of mushrooms, indicating changes in the papers material properties and bio-stability (taken from Metters, 2011, p24).

- A report from the Council on Library and Information Resources (CLIR) suggests that digitization is not yet an acceptable preservation format because there is as yet no reason to be confident that digital files will last as long as microfilms, or be as easy to manage over time (Nichols & Smith, 2001, p25). It is not known if CLIR have changed their opinion now some 13 years later.
- The CLIR report also identifies three risks of digitising originals. There is a risk that: i) the originals are disposed of because it is wrongly believed that the digital surrogate is a perfect substitute; ii) digital surrogates will provide a partial view of an object that appears to be complete; and iii) digital surrogates will become de-contextualised such that users fail to understand the context within which the original exists/existed (Nichols & Smith, 2001, p 46).

The table in Figure 4 below summarises the points described above. It also includes an assessment of what might be inferred about whether originals would be retained after digitisation.

<b>Reasons for digitising items (RFD=Reasons For Digitising)</b>	<b>Would originals be retained after digitisation?</b>
RFD1. To overcome physical space limitations.	The originals are unlikely to be preserved unless they are stored in a location where space is at less of a premium.
RFD2. To be able to access the item remotely.	Maybe - maybe not
RFD3. To be able to compare items in two separate locations, side by side on the screen(s).	Maybe - maybe not
RFD4. To provide wider access to items that are in high demand.	Maybe - maybe not
RFD 5. To provide wider access to items that are closely controlled for security, fragility or other reasons (this is slightly similar to NARS#7 (wide public interest)	Maybe - maybe not
RFD 6. To recover content from degraded negatives.	Maybe - maybe not
RFD 7. To obtain a higher visual quality than microfilm.	Maybe - maybe not
RFD 8. To gain a clearer image of pencil writing.	Maybe - maybe not
RFD 9. To be able to zoom in and examine pen strokes and grain of paper.	Maybe - maybe not
<b>Reasons for not digitising items (RAD=Reasons Against Digitising)</b>	
RAD1. Some items are too fragile to digitise and scanning might damage them	If digitisation <i>did</i> occur, originals would be retained
RAD2. The cost of digitisation and subsequent management of the digital content, may be more than can be afforded.	If digitisation <i>did</i> occur, maybe - maybe not
RAD3. Scanning may affect the tear resistance and relative lengthening of paper, as well as the growth and development of mushrooms.	If digitisation <i>did</i> occur, maybe - maybe not
RAD4. Lack of confidence that digital files will last as long as microfilm, or be as easy to manage over time.	If digitisation <i>did</i> occur, originals would be retained
RAD 5. There is a risk of disposing of the original in the incorrect belief that the digitised version is a perfect copy (this reinforces NARS#6 (questionable authenticity) reason for retaining an item.	If digitisation <i>did</i> occur, originals would be retained to mitigate against the risk
RAD 6. There is a risk of providing a partial view of an object that is incomplete.	As for RAD 5.
RAD 7. There is a risk of de-contextualising the object in a way that prevents a full understanding of what the object is.	As for RAD 5.

**Figure 4: Summary of Reasons For and Against Digitising Items**

### 2.2.3 Literature concerning Decisions about Originals

This section addresses reports in the literature which suggest reasons why artefacts should be retained or which identify characteristics that would not be captured during the digitisation process thereby giving a reason for the originals to be retained.

It will be apparent from the previous sections that the word 'value' appears in many reports about reasons for keeping things. This is because it is an established term, not least in the Archiving profession which talks about, for example, "Measuring the societal significance of past facts by analysing the value which their contemporaries attached to them should serve as the foundation for all archival efforts towards forming the documentary heritage" (Booms 1987, p104). It's not surprising, then, that the NARS Committee used the term 'Intrinsic Value' to describe the characteristics which they believed should preclude the destruction of original artefacts and which have already been listed at the beginning of this paper (NARS, 1982).

The notion of 'intrinsic value' is a long-standing concept in philosophy which debates at least three senses of the term (the following is taken from O'Neill, 2010, p120 and 123):

- a. Non-instrumental value - value that is not a means to some other end: value that is an end itself.
- b. Non-relational value - value that a thing has in virtue of its non-relational properties. There are two interpretations of what these properties are: i) properties of an object that persist regardless of the existence or non-existence of other objects, or ii) properties that can be characterised without reference to other objects.
- c. Objective value—value that an object possesses independently of the valuations of valuers.

However, some researchers believe that the NARS IV characteristics do not comply with these definitions, and are in fact rather more subjective in nature (McRanor, 1996, p403). That may be a critical distinction for Archival theory (since Archivists are supposed to be impartial in their work - Eastwood, 1993, p237 and 241), however, it is of no consequence for Owners of Personal Information Collections who are, by their very nature, totally partial in their decision making.

Menne-Haritz and Brübach (2001) describe the results of a project at the Marburg Archive School to develop a list of criteria to select those documents requiring preservation in their original state, and those which should be microfilmed or digitised. The following six criteria are listed (the equivalent NARS quality is included in brackets):

- i) Testimony of unclarified or disputed authenticity or un-established origin (equivalent to NARS quality #6 - Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination);
- ii) Rarity and monetary value, great age, high market value, small number of extant copies (only the age part of this is addressed in NARS #4 - Age that provides a quality of uniqueness);
- iii) Special effective value through a connection to historical events or personalities (equivalent to NARS #7 - General and substantial public interest because of direct association with famous or historically significant people, places, things, issues, or events);
- iv) Didactic and exhibition value (equivalent to NARS #5 - Value for use in exhibits);
- v) Legal evidence – items for which there is a legal requirement for them to be kept in their original form) (no equivalent NARS quality);

- vi) Testimony as to the history of archive and library collections (i.e. library working materials giving information about the collection in question) (no equivalent NARS quality).

In similar vein, the US CLIR report on the Artefact in Library Collections states that the library preservation community has agreed on certain features of physical objects that warrant their preservation in their original formats (Nichols & Smith, 2001, p9). The seven features are listed below and the equivalent NARS quality, if one exists, is included next to it in brackets:

- Age (NARS #4 – Age that provides a quality of uniqueness);
- Evidential value (similar to NARS #6 - Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination);
- Aesthetic value (NARS #2 - Aesthetic or artistic quality);
- Scarcity (no NARS equivalent);
- Associational value (NARS #7 - General and substantial public interest because of direct association with famous or historically significant people, places, things, issues, or events);
- Market value (no NARS equivalent);
- Exhibition value (NARS #5 - Value for use in exhibits).

Regarding Evidential Value, the CLIR report claims that the value of an artefact for research purposes is chiefly evidentiary in that it testifies that the item is original (i.e. not a copy), faithful (i.e. includes content and physical clues giving evidence of its authenticity), fixed (i.e. the content has been recorded at one instant in time), or stable (i.e. the item's physical substrate does not change over time) (Nichols & Smith, 2001, p10). It is the inclusion of these additional characteristics of originality, fidelity, fixity and stability that differentiate the CLIR feature from NARS #6.

Appendix 3 in the CLIR report also includes two other lists of reasons for keeping originals – one from Cornell University shown below; and the other from RLG which is too long to include here (Nichols & Smith, 2001, Appendix 3). Both largely map onto the generic CLIR feature listed above and/or to the NARS qualities, but nevertheless provide tangible illustrations of the application of those features.

**Cornell University Library – Library material to be retained in their original format**

1. Pre-1850 imprints and imprints issued after 1850 that can be considered rare or especially interesting because of time, place, and subject;
2. Materials having notable illustrations, maps, engravings etc, adding to the work's interest and/or value;
3. First editions of significant works;
4. Books with bindings of special interest because of type, period or binder;
5. Manuscripts and typescripts;
6. Association copies and materials having autographs of significance.;
7. Material having added notes, annotations, marginalia etc. Adding to the interest and or value of the work
8. Materials in special closed collections;
9. Rare ephemera and other elusive items, such as songsters, sheet music, broadsides, almanacs, charts, original historic photographs, etc.;
10. Notable standard reference works no longer in print such as dictionaries and encyclopaedias.

In stark contrast to the Library and Archive perspectives described above, Kirk & Sellen report on the home archiving of cherished objects. This identifies instances of objects being retained because they are unique in the circumstances that they are being remembered for; for example, a cog from a motorcycle accident. Any copy would undermine the value of the object because it simply wouldn't be the object in question. Another instance of a physical object that was being retained was a ladle handed down from a grandmother and continuing to be used – the memory of the grandmother being sparked by the use of the ladle. The study also observed physical objects put on display, and the article notes that physical objects naturally afford the kind of persistent but peripheral display that allows us to surround ourselves with the things that are meaningful to us (Kirk & Sellen, 2010, p10:37). It is interesting that, like this latter point about putting objects on display, NARS quality #5 (for use in exhibits) is about putting documents on display.

Regarding characteristics that can't be adequately captured by digitisation, the following such points emerged in interviews with ten Librarians and Archivists conducted by Metters (2011) (the equivalent NARS qualities are included in brackets after each point):

- Digitisation cannot adequately capture paper quality, chain lines, binding/spines, and watermarks (p43) (this is addressed by NARS #3 - Unique or curious physical features).
- Some participants felt that the surety of seeing and feeling a document in front of you is always missing from digital copies, and that the experiences of all of the senses (with the exception of sight) cannot be duplicated in a digital environment (p44) (no NARS equivalent).
- Some item's physical formats do not lend themselves to digitisation such as overlapping scrapbook items (p48) (this is addressed by NARS #3 - Unique or curious physical features)
- research value (p37-38) (no NARS equivalent)
- informational (p38) (no NARS equivalent – but it is not understood how the information content cannot be captured digitally, therefore, in this study, this is not considered a valid reason for keeping originals)
- social/historical/cultural value (p38) (no NARS equivalent)
- monetary value (p38) (no NARS equivalent)
- interestingly, four interviewees' responses suggest that newsprint typically falls outside the domain of intrinsic value and therefore does not require that the originals be retained (p39)

Metters also notes in the report that digitising a photograph removes information about its size, since the size of a digital surrogate of a photo is not determined with inches or centimetres, but rather with bits and pixels (Metters, 2011, p17-18)

By assembling all the reasons for keeping originals mentioned above, and eliminating any that duplicate those in the NARS list, the following set of reasons for keeping originals (RKO), *in addition to the NARS qualities*, emerges:

- RKO1 - Rarity value (this was also identified as "scarcity");
- RKO2 - Monetary value (this was also identified as "market value) ;
- RKO3 - Research value;
- RKO4 - Social/historical/cultural value;
- RKO5 - Legal requirement (this was originally titled "legal evidence);

- RKO6 - Records about a collection (this was originally titled “testimony as to the history of archive and library collections”);
- RKO7 - Evidentiary value (testifies that the item is original (i.e. not a copy), faithful (i.e. includes content and physical clues giving evidence of its authenticity), fixed (i.e. the content has been recorded at one instant in time), or stable (i.e. the item’s physical substrate does not change over time));
- RKO8 - To preserve the original size of a photograph;
- RKO9 - To be able to experience an item with all the senses (originally described as “Some participants felt that the surety of seeing and feeling a document in front of you is always missing from digital copies, and that the experiences of all of the senses (with the exception of sight) cannot be duplicated in a digital environment”)

To this list can be added the possible reasons for keeping originals identified in sections 2.2.1 and 2.2.2:

- WPKT7 - Items to put on show to frame the family;
- WPKT8 - Items to be preserved out of a need to fulfill a sense of duty towards the family;
- RAD1 - Items that are too fragile to digitise
- RAD4 - Lack of confidence that digital files will last as long as microfilm, or be as easy to manage over time
- RAD5 - Items for which there is a risk of disposing of the original in the incorrect belief that the digitised version is a perfect copy
- RAD6 - Items for which there is a risk that a digital version may only provide a partial view;
- RAD7 - Items for which there is a risk of being de-contextualised if they are looked at in their digitised form.

One final aspect will be considered in this review of the literature - contemporary attitudes towards the NARS Intrinsic Values as discerned by the interviews with ten Archivists and Librarians conducted by Metters (2011). These may be useful in understanding how lists of criteria to retain originals may or may not be used/useful in the PIM community. Key points to emerge from the interviews were:

- Before interviewees were provided with the NARS definition of intrinsic value, most of them had their own loose definitions of the concept, though many admitted that it was a difficult thing for them to define. Both in their initial definitions and throughout the questioning process, interviewees pulled other types of value into their descriptions of intrinsic value and their discussions of digitisation and preservation (p37).
- Reading NARS’s definition of intrinsic value did not seem to change the professionals’ minds about intrinsic value. Four of them recalled reading this definition in the past. Nobody reacted negatively to the definition; reactions generally ranged from hearty agreement with the qualities it listed to an interest in applying those qualities to their collections (p38).
- None of the interviewees specifically consider the whole concept of intrinsic value when appraising items, though they do consider its components. No one presented a specific system of assigning weights or levels of importance to the different components of intrinsic value, since most of them had a fairly fluid definition of the concept (p41).

### **3. Method**

The study made use of two sets of material: a collection of job documents built up over the last 40 years and comprising mainly paper originals but including a significant number of items that originated in electronic form; and a collection of personal mementos from the period 1958 – 1972 comprising mainly paper items but also including some physical objects. Both collections have been digitised by scanning or photographing the paper originals, and by photographing the objects. However, while the digitisation work had been completed for the Mementos collection, approximately 5% of the Job Documents collection had yet to be digitised.

Three studies of retain/destroy decisions were made across the two collections. First, for the Job Documents, a previous categorisation of 'Reasons for not destroying the paper' (RFND criteria), made before the owner was aware of the NARS Intrinsic Value report, were compared with the NARS Intrinsic Value (IV) characteristics and a draft set of PIM Retention Criteria (PIMRC) were derived from the results. The second and third studies progressively refined the Draft PIMRC by using them to make retain/destroy decisions in the Job Documents collection and the Mementos collection respectively. The studies were performed by the Owner of the two collections, who was responsible for deciding what to include in the collections in the first place and for all the retain/destroy decisions that were made prior to the start of the studies. Therefore, while the results of the studies are based on a highly knowledgeable view of the material being investigated, they do nevertheless reflect the views of just one single individual.

#### **3.1 The collections**

##### **3.1.1 The Job Documents collection**

The Job Documents collection is organised by each document having a reference number comprising an Owner Identifier (for example, PAW); a Set identifier (for example, DOC); a serial number (for example, 3010) and a sub-serial number (for example, 01). So, a typical reference number looks like this: PAW/DOC/3010/01. The purpose of the owner identifier is twofold; first to allow two or more people to each generate unique numbers, and secondly to enable references to other people's documents to be included in one's own index while being clear about their physical location. The object of the set identifier is to allow an individual owner to have several different physical sets of information. The purpose of the serial number is to enable new documents to be given the next number on the list, i.e. the number signifies nothing other than the physical location of the document in the file. The purpose of the sub-serial number is to enable two or more documents to be kept physically together in a file if thought appropriate by the owner.

Each document in the collection is given an entry in an Index held in a Filemaker database. Digitised versions of documents are held in a Document Management System called Fish (currently supplied by a UK company called M-Hance). The Index is integrated with the Document Management System by way of control key combinations which, when selected within Filemaker, copy specified information on the screen, import it into Fish and enact a Fish action such as searching for a document or creating a new entry (Wilson, 2000). The Index and digitised documents are held on a laptop. The paper documents are held in file boxes – three boxes of retained documents, and four boxes of documents that had yet to be digitised prior to the study.

At the beginning of August 2012, the overall collection comprised approximately 17,060 separate Index entries, comprising some 11,300 paper pages and 170,000 electronic files (note that each digitised page has its own file in the Document Management System, i.e. a twenty page document when digitised would have twenty separate electronic files).

The collection contains a very diverse range of material including memos, reports, manuals, working papers, presentations, meeting minutes, publications, articles, standards documents, brochures, marketing material, travel documents, maps, conference materials etc.. They reflect the working life of the Owner in the topic he got a degree in (Ergonomics and Human Factors), in the area in which the Owner worked (Information Technology), and in the four organisations he was employed.

Digitisation of the paper originals started in 1995, some fourteen years after the collection was initiated. As at the start of this study, all of the paper originals had been scanned apart from four boxes as shown in Figure 5.



**Figure 5 - The four boxes of Job documents that had yet to be scanned at the start of the study**

All the other paper documents had already been digitised, and, of those, 344 (comprising some 11,300 pages) had been retained and were stored in three boxes as shown in Figure 6.



**Figure 6 - The three boxes of retained Job documents at the start of the study**

### 3.1.2 The Mementos collection

Each item in the Mementos collection has a reference number as described in section 3.1.1 above for the Job Documents collection, however, the Mementos collection is not supported by Document Management software. Instead, it has an Index in an Excel spreadsheet, and files of the digitised items are held in a single folder within the Windows file management system. The title of each electronic file starts with the reference number, thereby enabling a particular digitised document to be found by identifying the reference number in the Excel Index and then searching within the Windows folder.

Before the collection was organised, indexed and digitised it resided in folders in three boxes, as shown in Figure 7.



**Figure 7 - The Mementos collection in three boxes prior to organising and digitising**

The originals that were retained after digitisation are stored in presentation folders and in the bottom shelf of a display cabinet as shown in Figure 8.



**Figure 8 - Storage for the retained items in the Mementos collection**

The organisation and digitisation process started in November 2012. In order to decide which items to include in the collection, and to try and understand why people keep mementos, a set of reasons for including items in the collection ('Inclusion Criteria') were developed. This was done by iteratively looking at example mementos and applying the criteria. The Inclusion Criteria that emerged are described below because there may be a relationship between Inclusion Criteria and Retention Criteria. The Inclusion Criteria that emerged identified three main perspectives:

- in the owner's lifetime for use by the owner;
- in the owner's lifetime for use by others;
- later (i.e. after the owner has died).

Under each of these categories some or all of the following reasons might apply:

N - to help you not to forget

RM - to remind you

RF - as a reference for some information

P - because it's associated with something you feel proud of

H - to pass family history on to your relations

S - because it's too special to get rid of

U - because it's very unusual and has novelty value

In addition, in the 'Later' category, options for advising those inheriting the item as to what to do with it were provided:

- K - Keep
- D - Destroy
- KD - Keep or Destroy

During the organisation and digitisation process, a full record was kept of all the decisions made, and the reasons they were made, as each memento was assessed. The record was made in an Excel spreadsheet called "Wish Table" with the headings shown in Figure 9.

	In my Lifetime by me	In my Lifetime by others (state who if not immediate family)	Later (state by whom if not immediate family)	Include in Digital collectn Yes/No	Include in Physical collectn Yes/No	How the digital item will be displayed	How the physical item will be displayed/stored	Not Wanted	Reason why this item is not wanted in either the physical or digital collections and is to be got rid of	Ref No
Item / Type of Item	N - Not forgotten P - Reference PF - Feel Pride H - Pass on family history S - Too special to get rid U - Unusual X - No entry	N - Not forgotten P - Reference PF - Feel Pride H - Pass on family history S - Too special to get rid U - Unusual X - No entry	K - Keep D - Destroy K or D N - Not forgotten M - Be reminded of RF - Reference P - Feel Pride H - Pass on family history S - Too special to get rid U - Unusual X - No entry					X - Not wanted at all		

Figure 9 - Wish Table headings

The Mementos collection contains a hugely diverse range of items reflecting the interests and activities of an individual's life from 8 -30 years old. It includes school calendars, school play programmes, exam papers, team sheets, sports programmes, membership cards, payslips, drill bits, tickets, theatre programmes, booklets of matches, scribbled notes, party invitations, cardboard novelties etc.. Much of it is paper-based – but some are physical artefacts such as the rejected drill bits from a holiday job as a lathe operator.

Of the overall 696 items which were considered for the collection, 400 items were included in the collection, and, of those, 109 items were retained in their original form.

### 3.2 The Studies

#### 3.2.1 The Job Documents retain/destroy decision review study

This study derived Draft PIM Retention Criteria (**Draft PIMRC**) by reviewing the set of previously compiled reasons why items in the Job Documents collection had been retained after being digitised. The digitisation of these documents started in 1995, and the 'reasons for not destroying the paper' (RFND) designations were made in September 2013. At the point when the RFND designations were made, there were some 344 retained items comprising some 11,300 pages stored in the boxes shown in Figure 5. When performing the RFND designation exercise, the owner had no knowledge of the NARS IV characteristics. Therefore, this exercise provides an opportunity to test the IV characteristics against a genuinely different point of view.

The analysis of RFND criteria was undertaken at the suggestion of Ann O’Brien as a precursor to starting work on a paper on “The artefact in the digital age”. A very rapid analysis was performed by assessing each of the retained documents in turn and making rough notes on why it had not been destroyed after digitisation. When all the items had been assessed, the notes were reviewed, similar notes grouped together, overlaps eliminated by either creating new groups or moving a reason between groups, doing a final refinement and finally defining each criteria in words. The final set of RFND criteria was then used to create a list of which criteria applied to each of the 344 retained items (the RFND item list). The nineteen categories of RFND criteria that emerged from this process are shown in Figure 10.

1	You get a better appreciation of it if it’s on paper
2	This is the original bit of paper which I might want to frame, bind, or just get the touch and feel of
3	This is an A3 document which looks better on paper and I don't have an A3 printer
4	Designed to be put to use in paper or laminated format
5	Needs to be scanned in colour and at the time I didn't have a colour capability
6	A booklet/newsletter which has a physical look and feel which needs to be handled and flicked through to fully appreciate it and which you can't experience just by looking at the scanned image on screen
7	Paper retained after scanning (or scanning put off till another day) because I thought I might want to make use of the document downstream or show it to others and would want to have it in paper form while I was using it
8	Documents of some significance which are retained in their original form because it is only the actual artefact that can be claimed to be the actual item
9	Documents which I believed to have particular significance at the time but don't any longer
10	Published documents which mention myself or people I know
11	Waiting for the PDF version to become available so that I can store that and destroy the paper version
12	This is a large document which needs photographing to retain it as an integral document in digital format
13	Legal document for which I believe the original is required
14	Needed to quickly file these and do the time consuming scanning job at a later date
15	Documents which are of significance to myself and which I want to have a paper copy to hand to make it a more visible and tangible item
16	Decision to scan these items was made after they had been included in the hardcopy box, but haven't got round to doing it yet
17	Hardcopy retained until time can be found to separate items within it to be scanned and thrown away from artefacts to be retained
18	Retained until I could do a 'really high quality' B&W scan
19	Contains a diverse set of material which you wouldn't get the feel for if it was just scanned documents on a screen

**Figure 10 - Reasons for not destroying the paper (RFND) criteria**

Before undertaking the decision review study, the IV characteristics were reviewed to ensure familiarity with each of the elements and their meanings. The decision review study was then

undertaken by placing each retained item on a desk in turn, reviewing its index entry, and recording on the RFND item list which, if any, of the IV characteristics were the reason(s) for it having been retained, and also noting any general comments or other reasons for it being retained. The RFND criteria previously ascribed to each item was hidden from view while this was taking place. When this exercise was complete, the following analysis and refinement process was followed:

- a) The number of times each IV characteristic was identified as a reason for retaining an item was expressed as a percentage of the total number of retained items in this study.
- b) Each IV characteristic was reviewed in turn to identify which items they had been applied to and which RFND criteria had been previously assigned to those items. From this was derived an overall mapping of IV characteristics to RFND criteria.
- c) The comments and other reasons were then reviewed and used in conjunction with the RFND characteristics and the IV characteristics, and the allocations made to each, to produce a set of **Draft PIM Retention Criteria (PIMRC)**. RFND characteristics were included, excluded or renamed as appropriate in this exercise, however, in order to continue to assess the IV characteristics throughout the subsequent studies, all IV characteristics were included in the Draft PIMRC in some form or other – even if no instances of the use of a particular characteristic was identified in the study.
- d) Each of the items in the study was then reviewed again and one or more of the newly derived Draft PIM Retention Criteria were assigned to them.
- e) The number of times each of the Draft PIMRC elements were identified as a reason for retaining an item was expressed as a percentage of the total number of items in this study.

### 3.2.2 The Job Documents digitisation study

The Job Documents Digitisation study assessed the effectiveness of the **Draft PIMRC** for making retain/destroy decisions for a contemporary document collection and produced an **Updated PIMRC**. The documents concerned were those in the Job Documents collection which had yet to be digitised, and comprised the 745 items consisting of 13550 pages shown in the boxes in Figure 4. Each item was taken in turn, digitised and then assessed against the draft PIMRC to decide whether to retain or destroy the paper originals, and all those PIMRC elements that applied were noted. Any general comments and other reasons for the physical item to be retained, were also noted. When this process had been completed for all 745 items, the following analysis and refinement process was followed:

- a) The number of times each IV characteristic or its equivalent in the Draft PIMRC, was identified as a reason for retaining an item was expressed as a percentage of the total number of retained items in this study. NOTE: At this point it was realised that specifying multiple PIMRC elements to particular items was producing unclear results which were difficult to compare across studies. Therefore, the results of both the first and second studies were revised to define the PRIMARY reason for retention, i.e. for each item allocated multiple IV characteristics or PIMR criteria, one of those characteristics or criteria was identified as being the Primary reason which prompted the keeping of the original of the item. From this point onwards the results of both study 1 and study 2 were analysed and reported in terms of both Primary usage and of Secondary applicable characteristics or criteria.

- b) The comments and other reasons were then reviewed in conjunction with the Draft PIMRCs and the items that had been allocated to each one, to identify changes to the Draft PIMRC required to ensure that, for each of the items that had been kept, there was a suitable criteria which explained why the item had been retained. The Draft PIMRC was adjusted accordingly to produce the **Updated PIMRC**.
- c) The assignment of particular PIMRCs to retained items was then revised as necessary to accommodate the Updated PIMRC emerging from b).
- d) The number of times each of the Updated PIMRCs were identified as a reason for retaining an item was expressed as a percentage of the total number of items that had been retained in this study.

### 3.2.3 The Memento retain/destroy decision review study

The Memento study assessed the effectiveness of the **Updated PIMRC** for making retain/destroy decisions for a contemporary collection of mementos, and produced an **Adjusted PIMRC**. The mementos concerned were all those items recorded in the Memento collection's so-called Wish Table. Each item on the Wish Table was considered in turn and those which had previously been retained were assessed against the Updated PIMRC to establish the Primary reason for retention. Any additional reasons that applied were noted as Secondary reasons for retention. Any general comments, and other reasons not on the Updated PIMRC for the physical item to be retained, were also noted. When this process had been completed for all items, the analysis and refinement process described below were followed:

- a) The number of times each IV characteristic was identified as a reason for retaining an item was expressed as a percentage of the total number of retained items in this study.
- b) The comments and 'other' reasons were then reviewed, in conjunction with the Updated PIMRCs and the items that had been allocated to each one, to identify changes to the Updated PIMRC required to ensure that, for each of the items that had been kept, there was a suitable criteria which explained why the item had been retained. The Updated PIMRC was adjusted accordingly to produce the **Adjusted PIMRC**.
- c) The assignment of particular PIMRCs to retained items, was then revised as necessary to accommodate the Adjusted PIMRC emerging from b).
- d) The number of times each of the Adjusted PIMRC elements was identified as a reason for retaining an item was expressed as a percentage of the total number of retained items in this study.

### 3.2.4 Application of the Adjusted PIMRC to the items in the first and second studies

To enable a comparison to be made across all three studies, the allocation of reasons for retaining items in the first and second study were revised using the Adjusted PIMRC.

## 4 Findings

### 4.1 Findings from the Job Documents Retain/Destroy Decision Review study

#### 4.1.1 IV characteristics Usage

The number of times each IV characteristic was identified as being the reason for retaining an item is shown in Figure 11 below:

IV Characteristic	Allocated as the <b>Primary</b> reason for retention		Allocated as the <b>Secondary</b> reason for retention	
	Number of times	%	Number of times	%
1. Physical form	3	0.9	3	0.9
2. Aesthetic quality	0	0	1	0.3
3. Physical features	10	2.9	3	0.9
4. Age	3	0.9	4	1.2
5. Use in exhibits	1	0.3	0	0
6. To answer authenticity Questions	4	1.2	1	0.3
7. Significant links	21	6.1	14	4.1
8. Legality of an institution	0	0	0	0
9. Executive policy document	4	1.2	0	0
Zero IV Characteristics selected	298	86.5	318	92.3
<b>Totals</b>	<b>344</b>	<b>100</b>	<b>344</b>	
<b>Number of times more than one IV characteristic allocated for a particular item = 9 (2.6%)</b>				

**Figure 11 - Number of times IV characteristics were a reason for an item being retained in the Job Documents Retain/Destroy Decision Review study**

#### 4.1.2 Mapping of IV characteristics to RFND criteria

For each instance of an IV characteristic being cited as either a Primary or a Secondary reason for retention, all the RFND criteria previously recorded for the item are listed in Figure 12 below. Note that the number of times an IV characteristic is cited may differ from the total number of RFND criteria cited because there is not a one-to-one mapping of Primary and Secondary selections.

IV Characteristic	Number of times cited	RFND criteria previously assigned to the item concerned	Number of times this RFND was cited
1. Physical form	6	4. For use as paper or laminate 8. Significant item - original required 12. Large doc needs photographing 15. To make it a more visible/ tangible	3 1 1 2
2. Aesthetic quality	1	8. Significant item - original required	1
3. Physical features	13	4. For use as paper or laminate 5. Needs colour - no colour scanner 6. Booklet/leaflet special look & feel 8. Significant item - original required 9. Used to think this was significant 15. To make it a more visible/tangible	11 2 2 2 1 3

IV Characteristic	Number of times cited	RFND criteria previously assigned to the item concerned	Number of times this RFND was cited
4. Age	7	6. Booklet/leaflet special look & feel 8. Significant item - original required 12. Large doc needs photographing 15. To make it a more visible/tangible	1 4 1 2
5. Use in exhibits	1	4. For use as paper or laminate 12. Large doc needs photographing	1 1
6. To answer authenticity Questions	5	2. To frame, bind or get the feel of 8. Significant item - original required 9. Used to think this was significant 13. Legal document - original needed 15. To make it a more visible/tangible	1 2 2 1 1
7. Significant links	35	4. For use as paper or laminate 6. Booklet/leaflet special look & feel 8. Significant item - original required 10. Physical features difficult to digitise 11. Tech Dev Physical form 12. Age	4 12 29 1 1 3
8. Legality of an institution	0	None	
9. Executive policy document	4	8. Significant item - original required	4

**Figure 12 - Mapping of the usage of IV characteristics to the usage of RFND criteria**

#### 4.1.3 Derivation of Draft PIMRC

The 313 'Comments and other reasons for retaining the physical item' that were provided in the first part of the study were reviewed and significant features of the items concerned and the reasons they were retained were noted. The notes were then used together with the RFND criteria, the IV characteristics, and the descriptions of the items concerned, to derive the Draft PIM Retention Criteria (PIMRC) as described below.

An immediate observation from a review of the 'other' comments was that several documents had been retained merely to delay the digitisation process for a variety of reasons. These included waiting for PDFs to become available; and waiting until a system capable of scanning in colour became available. This Draft PIMRC was generalised to '**Digitisation to be performed later**'.

Of the documents that were actually digitised, the most tangible reasons for retaining the originals were to do with wanting to actually work with the documents. For example, manuals for a printer, wireless keyboard and scanner which the Owner preferred to put next to the equipment whilst setting them up or troubleshooting them; and an article on digitising cassette tapes which the Owner wanted to have immediately to hand as the digitising was being done. In similar vein were some documents which were retained in case the Owner wanted to show someone their contents - such as the magazine that contained pictures of an impressive modern building in which he worked; and an example of a Rich Picture illustrating a system development. Finally, there were the hard copy masters of papers and project newsletters published by the Owner that had been retained to either lend to other people or to make copies of to give to other people. Of course, all of these requirements could be met to some extent using the digital versions, however the Owner had, at the

time of keeping, made the choice to employ them in their original paper format. Since then, the Owners perceptions of whether a hard copy format is better to work with had changed – and may well continue to change - as technology and the culture of its use had developed. Owners will always have this choice to make with respect to items that are to be put to continued use. This retention criterion was generalised to ***"Items to be put to work in their original form"***.

There were a number of items that were retained simply because of their uniqueness. These included signed certificates signifying some achievement; and a software licence agreement. For these items, it was judged to be necessary to retain the original to be able to prove their existence. This is equivalent to the IV characteristic "Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination. However a modified title was defined - ***"Items for which only the originals confirm their validity"***.

Another category first presented itself in the form of the last edition of Business Systems & Equipment magazine, and the first issue of e-Doc magazine (the successor to Document World). Although the 'last' and 'first' criteria might seem clear cut, in fact the retention of the 1000th issue of the UK's Computer Weekly magazine (1986), and of the 5th issue of MacUser magazine of March 1986, seems to belie that notion. The Apple Macintosh world was somewhat niche back then, but those in the know already sensed that it was something special and exciting. Getting and reading an issue of MacUser reinforced that feeling for the Owner, so a pristine issue - even if only the fifth issue - from that era was something worth retaining. Likewise, the retained Apple brochure for the Newton hand held machine, had a similar cache. In similar vein was the Guardian's 1995 supplement on a Non-User's Guide to the Internet. These items are a little unusual and, although widely published, are probably not that commonly available - a bit like trophies one might put on display. They perhaps come under the auspices of the IV characteristic #7 "General and substantial public interest because of direct association with famous or historically significant people, places, things, issues or events". Another item - the agenda for a training day signed by the inspirational speaker Roger Black, the athlete - certainly matched that IV characteristic. Finally, one of the retained items was a printout of an email message saying that the recipient should regard the email it forwarded as a collector's piece. The forwarded email was from a senior manager confirming that a few days of this year's holiday could actually be carried forward to next year. It was a humorous message, sent by someone whose humour was always enjoyable to be about, and the very fact that the missive said it should be regarded as a collector's piece meant that it became so. Despite the fact that the original was electronic, the Owner still printed out a version on paper thinking that, perhaps, one day, it could be framed or at least shown to some colleagues. It was the notion of collectability that seemed to bind all these examples together. They were all special in their own way, and they had been retained simply to enable the owner to be reminded of, and to enjoy, what they represent. These were defined as ***"Trophy items to be collected and enjoyed in the future"***.

Next came the large documents - many of them colour poster sized glossies such as a process flow representation of how company accounts work; a Personal Computer World double-sided poster showing benchmark information for all personal computers in 1987 and with the benchmark algorithm that was used written in six different programming languages on the reverse; a table showing European email connectivity in 1995; and a year 2000 illustration of the way the Cast product discovers and represents the inner workings of software applications. At the time these

were retained, it was practically impossible for the Owner to digitise them effectively. Now, though, they could just be photographed with a modern digital camera to produce a JPG image that is stored. This meant that the owner now had the option of digitising the original of several A3 sized originals including a hierarchical representation of the Owner's Workgroup Computing activities; an e-business process flow; and an HCI component hierarchy. However, there was still a question concerning the *viewing* of the very large documents; could the full impact, integrity and viewing experience of a large document (A2 and bigger) be achieved when looking at them on a relatively small screen? This concern also applied to broadsheet newspaper supplements such as the Financial Times' 1984 twenty page report on the Desk Top Revolution; and the Observer 1990 twelve page section on Mobile Communications. There was also one final concern which applies to all professionally printed and published publications - once they are destroyed the individual is unlikely to be able to reproduce anything like the look and feel and, for large documents, the size of the original. Whether one is willing to lose those qualities forever, is a particularly pertinent question at the point of digitisation. This retention criterion, then, was defined as ***"Large documents which have particular qualities of impact and integrity"***.

Small publications, typically, but not exclusively, of A4 size or less, mirror some of the above concerns. Although they are easily scanned, to do so may require their bindings to be stretched or even dismembered, such that they may never regain their exact original form. Furthermore, it is unlikely that small publications printed on special papers and with stapled or glued spines, can be successfully recreated by a non-specialist from their digital copies. Examples encountered included a booklet on 'Static at Work: the shocking truth'; the UK Department of Trade & Industry's 1986 reports on the Office Automation Pilots; and US Robotics' 1993 Sportster Guide to On-Line Services. These types of publications formed the criterion ***"Small publications of around A4 size or less with fixed spine bindings and/or special papers"***.

Up to this point, the items discussed were publications with which the Owner of the collection had had no prior involvement. However, an owner's association with an item does provide another set of possible reasons for retaining it. The first of these to be considered was the circumstance whereby a friend or colleague had been either responsible for a publication or was mentioned within it. For example, the reprint of the Fortune magazine article on Doug Vogel's electronic meeting room in Arizona which the Owner had visited; and the front page of a 1989 issue of the UK MacUser magazine which included the photo of a friend. These imparted a personal interest of the sort alluded to by the IV characteristic #7 (General and substantial public interest because of direct association with famous or historically significant people, places, things, issues or events). The IV characteristic deals with public interest and famous people, whereas in the personal arena it is a personal interest in someone you know who is, de facto, 'famous' because of their appearance in the publication. It may not be an exact analogy, but, nevertheless, it was that sort of thinking that had resulted in these particular examples being retained in their original format. Some publications mentioned the Owner himself and for these there was an even stronger desire to retain the original - even if it was only an extract from the publication such as a newspaper cutting. These types of items were defined as ***"Publications which mention friends, colleagues or the owner"***.

Individuals might also feel an emotional attachment to publications that are produced by the organisation they work for. Examples encountered were on a wide variety of subjects, for example,

business updates, product guides, letters to staff from the Chairman, and internal newsletters. The latter is a particularly good example since they often included some information of direct relevance to the Owner, sometimes mentioned the Owner or his colleagues, and in some instances included photos of colleagues. Having said that, one of the newsletters in this collection started to be simultaneously published in electronic (PDF) format as well as in hardcopy, and from then on the owner stopped retaining the hardcopy. This indicates that, when an official version that is designed for use on screen is produced, the desire to retain hardcopies may be diminished. Closely related to publications produced by one's employer is the programme or project that an individual participates in. In this study, the Owner was heavily involved in the Alvey Cosmos (Configurable Structured Message System) project, and the Hicom HCI conferencing system, and consequently retained many of the Cosmos and Hicom documents and publications in their original form. All of these types of materials inspired the definition of the criterion titled **"Items published by an organisation or programme that the owner works/worked for"**.

Above and beyond the organisation's publications, however, it is the things that people produce themselves that they often value the most. Documents or reports or papers that they have jointly or solely authored - particularly if they are in any way creative, innovative or strategic - are often things that individuals are proud of and may want to retain. If the item is published to even only one or two people, then individuals will be likely to want to retain the original in its published form. Some examples in this collection of items produced by the Owner were NCC's 1981 Management Guideline No 67 on 'Designing systems for people'; the 1984 issue of Design Studies in which the paper 'Towards the electronic pocket diary' appears; all 6 issues of the Cosmos Information Exchange Newsletter from the late 1980s; and the 1996 application architecture diagrams for a large utility company. There were also instances of documents and sets of documents that weren't published as such, but which the owner created or assembled and which were valued sufficiently to be retained, for example, spiral bound sets of reports of visits to different organisations in the course of Office Automation projects in the 1980s; and a spiral bound volume of all the documents associated with an early 80s project on the development of guidelines for evaluating and selecting OA products. All such items were defined as **"Items that the owner has written, produced, assembled or made a significant contribution to"**.

With the exception of large documents, most of the types of items previously described could be viewed successfully in their digital form on a display screen. However, there were some items which had a physical construction which was difficult, if not impossible, to digitise and replicate the experience of interacting with the physical item. Such items were also likely to be very difficult to reconstruct once again from their digital copies so that if the original were to be destroyed it would effectively be gone for good. Examples of such items encountered in this study included the 1982 BLEND project's user guide with progressively longer pages to enable different sections to be turned to from the front of the document; the 1991 rectangular packet containing the Nautilus Intro CD and with fold outs from three of the sides of the rectangle and with one of those sides containing four quarter-segments hinged at the edge so that they could be splayed out; instances of the foldable paper diary the Owner carried in his wallet in the early 1980s to explore the concept of the personal electronic diary; two examples of laminated cue cards and checklists; and a 1994 Guardian personalised news sheet of the future produced on a very tough material called Tyvek. Interestingly, a number of instances of photos were also encountered in this study and it is thought that they were

kept because, at the time they were retained, it wasn't that easy to reproduce photographs at will on ordinary home computer equipment. That is not the case today, though individuals may still feel that the physical composition of a photo - special photographic paper or a particular size - might merit its retention. All these sorts of items mapped closely onto the IV characteristic #3 - "Unique or curious physical features", though the Owner's retention rationale was slightly different. In the IV case, it is the unusualness of the physical features that provides a reason for retaining items, whereas in this study the Owner cited difficulties in scanning, in replicating an equivalent interaction experience on screen, and in reconstructing the item from the digital copy, as the retention rationale. Consequently, the IV terminology was not used and this criterion was named ***"Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy"***.

A few items exhibited another physical characteristic – their formats were examples of technological developments. For example, a book review from the early 1980s for the BLEND electronic journal project that had been produced on a printout from the teletype machine which was used to participate in the project; and the first set of overhead slides ever produced with a presentation programme by the Owner. This category is covered by IV characteristic #1 - "Physical form that may be the subject for study if the records provide meaningful documentation or significant examples of the form". A modified title will be used here to convey a greater clarity of meaning – ***"Items illustrating a physical form due to a development in technology"***.

Four items encountered in this study suggested that IV characteristic #4, ***"Age that provides a quality of uniqueness"***, was at least part of the reason for retaining them. They included a handwritten talk on the history of computing in government produced by the Owner for his university course in 1971; all the handouts from a three day Kodak System Acquaintance course attended by the Owner and collected into a single spiral bound volume; and a single page from the early 1990s, very worn and raggedy, completely filled with contact names and phone numbers in very small writing. As the IV description makes clear, 'Age can be a factor even with comparatively recent records'. For the handwritten talk the retention rationale was the fact that it came from an era long ago in the individual's life. In the case of the Systems Acquaintance course it was the fact that it encapsulated an era long ago very early in the history of commercial computing that provided the retention rationale; and in the case of the raggedy contact list the retention rationale was the heavy use over a long period of time. Since the IV characteristic was an exact match to the equivalent criteria in the PIM domain, the IV name was employed here.

Finally, just one item was encountered which explicitly forbade copying. It was a four page, A4 foldout questionnaire called Strength Deployment Inventory which was intended to be filled in and retained by the individual, and had a big bold message down the side saying "Making copies of this material by any method is a violation of copyright law". This criterion was defined as ***"Copying explicitly prevented by copyright"***.

This concluded the derivation of criteria from a review of the 'other' comments and from the items in the collection under study. Next, the IV characteristics and RDFN criteria were reviewed, as shown in Figure 13 below, to identify any extra criteria that were needed in addition to those identified in the above paragraphs.

<b>IV characteristic or RFDN criterion</b>	<b>Review Comments</b>	<b>New criteria to be included in the Draft PIMRC</b>
<b><i>IV Characteristics</i></b>		
1. Physical form that may be the subject for study if the records provide meaningful documentation or significant examples of the form	Already in Draft PIMRC as “Items illustrating a physical form due to a development in technology”.	None
2. Aesthetic or artistic quality	One item identified in this study – so the retention reason was included in the Draft PIMRC.	Include with IV terminology – “Aesthetic or artistic quality”
3. Unique or curious physical features	Already in Draft PIMRC as “Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy”	None
4. Age that provides a quality of uniqueness	Already in Draft PIMRC with same name as IV characteristic	None
5. Value for use in exhibits	No items identified in this study but it was thought that such items may be encountered in PIM, so the retention reason was included in the Draft PIMRC.	Include with slightly modified IV terminology – “For use in exhibits”
6. Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination	Already in Draft PIMRC as “Items for which only the originals confirm their validity”	None
7. General and substantial public interest because of direct association with famous or historically significant people, places, things, issues, or events	Already covered in Draft PIMRC as “Trophy items to be collected and enjoyed in the future”.	None
8. Significance as documentation of the establishment or continuing legal basis of an agency or institution	Unlikely to be encountered in PIM – but include in the Draft PIMRC for completeness.	Include with modified IV terminology – “Item relating to the legality of an institution”
9. Significance as documentation of the formulation of policy at the highest executive levels when the policy has significance and broad effect throughout or beyond the agency or institution	A few items were identified in this study so the retention reason was included in the Draft PIMRC.	Include with modified IV terminology – “Executive Policy document”
<b><i>RFDN Criteria</i></b>		
1. You get a better appreciation of it if it's on paper.	Already included in the Draft PIMRC as “Large documents which have particular qualities of impact and integrity” and “Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy”.	None

<b>IV characteristic or RFDN criterion</b>	<b>Review Comments</b>	<b>New criteria to be included in the Draft PIMRC</b>
2.This is the original bit of paper which I might want to frame, bind, or just get the touch and feel of.	Already included in the Draft PIMRC as "Items for which only the originals confirm their validity".	None
3.This is an A3 document which looks better on paper and I don't have an A3 printer.	Already included in the Draft PIMRC as "Large documents which have particular qualities of impact and integrity".	None
4.Designed to be put to use in paper or laminated format.	Already included in the Draft PIMRC as "Items to be put to work in their original form".	None
5. Needs to be scanned in colour and at the time I didn't have a colour capability.	Already included in the Draft PIMRC as "Digitisation to be performed later".	None
6. A booklet/newsletter which has a physical look and feel which needs to be handled and flicked through to fully appreciate it and which you can't experience just by looking at the scanned image on screen.	Already included in the Draft PIMRC as "Small publications of around A4 size or less with fixed spine bindings and/or special papers".	None
7.Paper retained after scanning (or scanning put of till another day) because I thought I might want to make use of the document downstream or show it to others and would want to have it in paper form while I was using it.	Already included in the Draft PIMRC as "Items to be put to work in their original form".	None
8.Documents of some significance which are retained in their original form because it is only the actual artefact that can be claimed to be the actual item.	Already included in the Draft PIMRC as "Items for which only the originals confirm their validity".	None
9.Documents which I believed to have particular significance at the time but don't any longer.	Such a criteria is not useful for initial digitisation decisions – so this retention reason was excluded from the Draft PIMRC.	None
10.Published documents which mention myself or people I know.	Already included in the Draft PIMRC as "Publications which mention, friends, colleagues or the owner".	None
11.Waiting for the PDF version to become available so that I can store that and destroy the paper version.	Already included in the Draft PIMRC as "Digitisation to be performed later".	None
12.This is a large document which needs photographing to retain it as an integral document in digital format.	Already included in the Draft PIMRC as "Large documents which have particular qualities of impact and integrity".	None
13.Legal document for which I believe the original is required.	Already included in the Draft PIMRC as "Items for which only the originals confirm their validity".	None
14.Needed to quickly file these and do the time consuming scanning job at a later date.	Already included in the Draft PIMRC as "Digitisation to be performed later".	None

IV characteristic or RFDN criterion	Review Comments	New criteria to be included in the Draft PIMRC
15. Documents which are of significance to myself and which I want to have a paper copy to hand to make it a more visible and tangible item.	Already covered in the Draft PIMRC by several of the criteria.	None
16. Decision to scan these items was made after they had been included in the hardcopy box, but haven't got round to doing it yet.	Already included in the Draft PIMRC as "Digitisation to be performed later".	None
17. Hardcopy retained until time can be found to separate items within it to be scanned and thrown away from artefacts to be retained.	Already included in the Draft PIMRC as "Digitisation to be performed later".	None
18. Retained until I could do a 'really high quality' B&W scan	Already included in the Draft PIMRC as "Digitisation to be performed later".	None
19. Contains a diverse set of material which you wouldn't get the feel for if it was just scanned documents on a screen.	Already included in the Draft PIMRC as "Items that the owner has written, produced, assembled or made a significant contribution to" and "Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy".	None

**Figure 13 - Results of the review of the IV characteristics and the RFDN criteria to identify any additional criteria that needed to be added to the Draft PIMRC**

All of the Retention Criteria that were identified earlier in this section are listed below. The list constitutes the **Draft PIMRC** that will be used in the second and third studies reported in this paper.

1. Digitisation to be performed later
2. Items to be put to work in their original form
3. Items for which only the originals confirm their validity
4. Trophy items to be collected and enjoyed in the future
5. Large documents which have particular qualities of impact and integrity
6. Small publications of around A4 size or less with fixed spine bindings and/or special papers
7. Publications which mention friends, colleagues or the owner
8. Items published by an organisation or programme that the owner works/worked for
9. Items that the owner has written, produced, assembled or made a significant contribution to
10. Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy
11. Items illustrating a physical form due to a development in technology
12. Age that provides a quality of uniqueness
13. Copying explicitly prevented by copyright
14. Aesthetic or artistic quality
15. For use in exhibits
16. Item relating to the legality of an institution
17. Executive Policy document

#### 4.1.4 Draft PIMRC usage

The Draft PIMRC were assigned to each of the items in the first study, and the number of times each Draft PIMRC was identified as being the reason for retaining an item is shown in Figure 14 below:

	<b>Number of times allocated as the Primary reason for retention (out of 344 possible times)</b>	<b>% allocated as the Primary reason</b>	<b>Number of times allocated as a Secondary reason for retention</b>
1. Digitisation to be performed later	52	15.1	0
2. Items to be put to work in their original form	15	4.4	4
3. Items for which only the originals confirm their validity	4	1.2	1
4. Trophy items to be collected and enjoyed in the future.	19	5.4	16
5. Large documents which have particular qualities of impact and integrity.	27	7.8	2
6. Small publications of around A4 size or less with fixed spine bindings and/or special papers	35	10.2	92
7. Publications which mention, friends, colleagues or the owner	7	2	1
8. Items published by an organisation or programme that the owner works/worked for	90	26.2	10
9. Items that the owner has written, produced, assembled or made a significant contribution to	73	21.2	8
10. Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy	10	2.9	3
11. Items illustrating a physical form due to a development in technology	3	0.9	3
12. Age that provides a quality of uniqueness	4	1.2	4
13. Copying explicitly prevented by copyright	1	0.3	0
14. Aesthetic or artistic quality	0	0	1
15. For use in exhibits	0	0	0
16. Item relating to the legality of an institution	0	0	0
17. Executive Policy document	4	1.2	0
<b>Total</b>	<b>344</b>	<b>100%</b>	<b>125</b>
<b>Number of times more than one Draft PIMRC allocated for a particular item = 115 (33%)</b>			

**Figure 14 - Frequency of each Draft PIMRC being identified as a Retention Reason in the 1st Study**

## 4.2 Findings from the Job Documents digitisation study

### 4.2.1 IV characteristics Usage

The number of times each IV characteristic was identified as being the reason for retaining an item in the Job Documents Digitisation Study is shown in Figure 15 below. The data was derived from the Draft PIMRC allocations according to the mapping shown in column 2:

IV Characteristic	Equivalent Draft PIMRC categories	Allocated as the <b>Primary</b> reason for retention		Allocated as the <b>Secondary</b> reason for retention	
		Number of times	%	Number of times	%
1. Physical form	11. Physical form	1	1.1	2	2.2
2. Aesthetic quality	14. Aesthetic quality	1	1.1	0	0
3. Physical features	10. Physical features	4	4.4	1	1.1
4. Age	12. Age	0	0	0	0
5. Use in exhibits	15. Use in exhibits	1	1.1	0	0
6. To answer authenticity questions	3. Originals confirm identity	0	0	0	0
7. Significant links	4. Trophy items	14	15.6	2	2.2
8. Legality of an institution	16. Legality of an institution	0	0	0	0
9. Executive policy document	17. Executive Policy Document	0	0	0	0
None of the above		69	76.7	86	94.5
	<b>Totals</b>	<b>90</b>	<b>100</b>	<b>91</b>	
<b>Number of times more than one IV characteristic allocated for a particular item = 1 (1.1%)</b>					

**Figure 15 - Frequency of IV Characteristics being identified as a Retention Reason in the 2nd Study**

### 4.2.2 Derivation of Updated PIMRC

Of the 745 items dealt with in this study, 90 were retained, in whole or in part, in their original format. The partial retentions reflected the heterogeneous nature of the items: some consisted of only one page whereas others consisted of many pages, often stapled, but sometimes loose in A4 envelopes. Partial retentions were made when only a subset of the pages in an item were deemed worthy of keeping.

The Draft PIMRC were assigned to each of the items in the study, and the number of times each Draft PIMRC was identified as being the reason for retaining an item is shown in Figure 16 below:

<b>Draft PIMRC</b>	<b>Number of times cited as the Primary reason for retention (out of 90 possible times)</b>	<b>% of times cited as the Primary reason</b>	<b>Number of times cited as a Secondary reason for retention</b>
1. Digitisation to be performed later	5	6	0
2. Items to be put to work in their original form	0	0	0
3. Items for which only the originals confirm their validity	0	0	0
4. Trophy items to be collected and enjoyed in the future	14	16	2
5. Large documents which have particular qualities of impact and integrity	11	12	1
6. Small publications of around A4 size or less with fixed spine bindings and/or special papers	14	16	16
7. Publications which mention, friends, colleagues or the owner	3	3	1
8. Items published by an organisation or programme that the owner works/worked for	22	24	1
9. Items that the owner has written, produced, assembled or made a significant contribution to	14	16	4
10. Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy	4	4	1
11. Items illustrating a physical form due to a development in technology	1	1	2
12. Age that provides a quality of uniqueness	0	0	0
13. Copying explicitly prevented by copyright	0	0	0
14. Aesthetic or artistic quality	1	1	0
15. For use in exhibits	1	1	0
16. Item relating to the legality of an institution	0	0	0
17. Executive Policy document	0	0	0
<b>Totals</b>	<b>90</b>	<b>100</b>	<b>28</b>
<b>Number of times more than one Draft PIMRC allocated for a particular item = 25 (28%)</b>			

**Figure 16 - Frequency of Draft PIMRC being identified as a Retention Reason in the 2nd Study**

This study confirmed the desirability of having a "digitise later" criteria. When there are a large number of items to deal with, it is more efficient to keep going with the primary equipment/process. In this case, a scanner was being used and four items requiring photographs (two conference floor plans, and foldout maps of Ipswich and Brussels), were allocated to this criteria. Another item was

also given this criteria because it had very faint text and required special adjustment of the scanner software which, at the time, the Owner was not familiar with.

Across the 90 retained items the most prevalent reason for retention (comprising 22 instances) was “Items published by an organisation or programme that the Owner works/worked for”. In the majority of these cases the items were glossy magazines – some internal communication magazines for staff, and some technical magazines marketing the organisation’s capabilities to its customers. One point that arose when dealing with these items was the Owner’s concern that keeping all these publications was going to require more storage space than had been anticipated. This prompted the Owner to plan to investigate, sometime in the future, whether he would be satisfied to retain just a few example of these publications rather than whole series of them. This is reminiscent of the paragraph in the NARS report which advises considering the whole series as well as individual items within a series which may have special characteristics, when making these determinations (NARS, 1982).

Not all the 22 instances where retention was primarily due to an organisational connection, involved organisations that the individual was contractually employed by. Five of the items were from voluntary activities associated with the owner’s work - a User Guide and a re-launch letter from the Hicom Computer Conferencing system for HCI professionals; and two versions of the prospectus, and the Articles of Association, for a proposed Foundation for Cooperative Work. In fact, the owner had been involved to some extent in the creation of all of these items and therefore a choice had to be made as to whether to cite the organisational criterion or the ‘written by the owner’ criterion as the reason for retention. A similar choice had to be made for a Business Options report for which the Owner eventually decided to allocate “written by the owner” as the retention reason. These examples illustrate the close connection in some circumstances between the two criteria “Items published by an organisation or programme that the owner works/worked for” and “Items that the owner has written, produced, assembled or made a significant contribution to”. However, the latter is the narrower criterion and was found to be easy to understand and apply in this study (items retained for this reason included technical reports, internal memos, an exchange of correspondence with “The Ergonomist” and a published conference paper). The former is a broader criterion, but, again, no problems were encountered in interpreting it. Therefore no changes were proposed for either criteria as a result of the second study.

Just three items were retained because they were publications which mention friends, colleagues or the owner. Only one of these was widely published in the conventional sense (a reprint of the 1988 paper on the Psychology of Personal Information Management by Lansdale with whom the owner had some communication). The other two items were documents produced by colleagues and distributed to limited circulations – one a “Ringi Meeting Handbook” by Denis O’Brien and the other the results of a literature search undertaken by Boerries Ludwig on the subject of the Group Knowledge Development Process for the CoTech ITSforGK Working Group in 1991. No changes were required for this criterion as a result of the second study.

The Small Publications criteria was cited as the primary reason for retention for 14 of the 90 items. In many of these cases the items were actually published documents with ISBN numbers, for example, a CCTA methodology on Office Automation system evaluation; three 1991 CCTA reports on aspects of User Interfaces; a 1988 NEDC report on UK Office Automation Strategy; and a 1991 CEC

report on the European IT industry. However, this criterion also happily accommodated such things as the cue card for the NOTICE email service; a brochure on the Atari Pocket PC; Blackburn College's use of a broadband network; and a brochure on the Japanese Centre for Global Communication. This last item, however was significantly longer in length than an A4 page whereas the criterion was defined as "Small publications of around A4 size or less.....", therefore it was decided to adjust the definition to "Publications with fixed spine bindings and/or special papers".

Eleven items were retained under the Large Documents criterion, even though they varied greatly in size, for example, a large A1 wall chart compiling 69 returns of a questionnaire; a 6 page foldout brochure on the Xerox DocuTeam software (each page measuring 28x21.5 cm); a 24 sided foldout Japanese brochure on Sharp calculators (each page measuring 10x21cm); and a SERC Alvey Programme offer document with a tear-off strip on the bottom and measuring approximately 11cm longer than an ordinary A4 page. All of these documents were judged to be unlikely to generate the same impact and experience on screen as they do in their original form (as defined by criterion #5 - Large Documents), as opposed to being just difficult to digitise (as defined by criterion 10). The latter criterion was cited four times as the reason for retention – and for a diverse range of reasons: some originals of the foldable wallet diary the owner experimented with prior to the emergence of personal organiser machines; a 1990 mailout providing access to an online Bulletin Board and Database for Technology Information which included a 5 inch floppy disk; a three page folding brochure describing the RARE organisation for European networking researchers and which was produced in a flexible laminated format; and a cue card for the VMX voice mail system which has two sliding cards which can be moved to change what is displayed in cut-out areas on the main cards. This variety of materials indicated the advisability of having the generic criterion "Physical features which make it difficult to digitise....". Despite the potential overlap of the Large Documents and Difficult to Digitise criteria, no problems in distinguishing between the two were experienced in this study so no changes to the criteria were proposed.

The decision to include Trophy items in the Draft PIMRC was vindicated in this study as 14 items were retained for this reason, for example, signed letters from two computer journalists – Jack Schofield and Tony Durham; a brochure on "the world's first digital camera" – the Dycam; an unopened pack of delegate materials from the first European Conference on Computer Supported Cooperative Work in 1989; a bound copy of William Wolf's proposal to set up a National US Collaboratory; and letters announcing the first, second and third CSCW Pub Get-togethers which the Owner took part in. This criteria was also identified as the retention reason for the first set of overhead slides created by the Owner using Aldus Persuasion in 1989 – an item which seems very similar to the item in the first study described as the "first set of overhead slides ever produced with a presentation programme by the Owner" and which was give the retention reason "Items illustrating a physical form due to a development in technology". As well as illustrating the fact that two or more retention criteria may be applicable when a single item is retained, two other inferences can be drawn from this seeming inconsistency: i) over time individuals may forget some details about things they have done and experienced, ii) there is no guarantee that individuals will apply checklists or guidance consistently.

The "aesthetic or artistic quality" criterion was selected just once as the retention reason - for a set of photos of the Owner originally used for press releases. This was not an obvious decision as it was not until the NARS definition of "aesthetic or artistic quality" was checked and discovered to

explicitly include photos. For clarity it was decided to include the words “including photos” into the name of this criteria.

The inclusion of the “for use in exhibitions” criteria in the PIMRC was vindicated by it being allocated to a single item - a set of material that had been used as a poster display at the Interact conference in London in 1984.

The final criteria to be cited as a reason for retention (physical form due to a development in technology) was selected for a set of overhead slides. No changes were required for this criterion as a result of the second study.

The remaining six items listed below were not cited at all in this second study so there was no reason to specify any changes to them.

- Items to be put to work in their original form
- Items for which only the originals confirm their validity
- Age that provides a quality of uniqueness
- Copying explicitly prevented by copyright
- Item relating to the legality of an institution
- Executive Policy document

There were no instances in which an item was retained for a reason which did not appear in the Draft PIMRC, therefore no additional criteria were proposed. In summary, changes were only required to the following two criteria in order to form the **Updated PIMRC**:

6. “Small publications of around A4 size or less with fixed spine bindings and/or special papers” was changed to “Publications with fixed spine bindings and/or special papers”

14. “Aesthetic or artistic quality” was changed to “Aesthetic or artistic quality including photos”

These changes did not impact the allocations of Draft PIMRC to retained items, therefore the statistics reported in Figure 15 still stand for the Updated PIMRC.

### 4.3 Findings from the Memento retain/destroy decision review study

#### 4.3.1 IV characteristics Usage in the Memento study

The number of times each IV characteristic was identified as being the reason for retaining an item in the Memento study is shown in Figure 17 below . The data was derived from the Updated PIMRC allocations according to the mapping shown in column 2:

IV Characteristic	Equivalent Updated PIMRC categories	Allocated as the <b>Primary</b> reason for retention		Allocated as the <b>Secondary</b> reason for retention	
		Number of times	%	Number of times	%
1. Physical form	11. Physical form	7	6.4	1	0.9
2. Aesthetic quality	14. Aesthetic quality	1	0.9	5	4.6
3. Physical features	10. Physical features	3	2.8	7	6.4
4. Age	12. Age	1	0.9	8	7.3
5. Use in exhibits	15. Use in exhibits	0	0	1	0.9
6. To answer authenticity Questions	3. Originals confirm identity	1	0.9	5	4.6
7. Significant links	4. Trophy items	17	15.6	8	7.3
8. Legality of an institution	16. Legality of an institution	0	0	0	0
9. Executive policy document	17. Executive Policy Document	0	0	0	0
None of the above		79	72.5	80	73.4
<b>Totals</b>		<b>109</b>	<b>100</b>	<b>109</b>	
<b>Number of times more than one IV characteristic allocated for a particular item = 15 (13.8%)</b>					

**Figure 17 - Frequency of IV Characteristics being identified as a Retention Reason in the 3rd Study**

#### 4.3.2 Derivation of Adjusted PIMRC

Of the 400 items included in this collection, 109 were retained in their original format and assessed to establish which of the Updated PIMRC were applicable to each. The number of times each of the PIMRCs was identified as being the reason for retaining an item is shown in Figure 18 below.

Updated PIMRC	No of times allocated as the Primary reason for retention	% times allocated as the Primary reason for retention	No of times allocated as a Secondary reason for retention
1. Digitisation to be performed later	0	0	0
2. Items to be put to work in their original form	0	0	0
3. Items for which only the originals confirm their validity	1	0.9 %	5
4. Trophy items to be collected and enjoyed in the future	17	15.6 %	8
5. Large documents which have particular qualities of impact and integrity	0	0	2
6. Publications with fixed spine bindings and/or special papers	9	8.3 %	29
7. Publications which mention, friends, colleagues or the owner	4	3.7 %	22
8. Items published by an organisation or programme that the owner works/worked for	3	2.8 %	13
9. Items that the owner has written, produced, assembled or made a significant contribution to	1	0.9 %	5
10. Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy	3	2.7 %	7
11. Items illustrating a physical form due to a development in technology	7	6.4 %	1
12. Age that provides a quality of uniqueness	1	0.9 %	8
13. Copying explicitly prevented by copyright	0	0	0
14. Aesthetic or artistic quality including photos	1	0.9 %	5
15. For use in exhibits	0	0	1
16. Item relating to the legality of an institution	0	0	0
17. Executive Policy document	0	0	0
None of the above	62	56.9 %	35 (32.1%)
<b>Total</b>	<b>109</b>	<b>100</b>	<b>141</b>
<b>Number of times more than one Updated PIMRC allocated for a particular item = 36 (33%)</b>			

**Figure 18 - Frequency of Updated PIMRCs being identified as a Retention Reason in the 3rd Study**

Although 10 of the 17 Updated PIMRCs were allocated as the Primary reason for retention at least once, it was apparent that the majority of the Primary allocations were made to just 3 of the PIMRC – Trophy Items; Items with fixed spine bindings; and Items illustrating a Physical Form. The most Primary allocations (some 15% of all the allocations made) were made to **Trophy Items** such as one of the Owner’s out of date Passports; a booklet for the Kodak Works Photographic Society’s 1974-75 syllabus; a booklet describing services and menus for Singapore’s famed but long since gone Cockpit Hotel; a ferula remission slip; and the 1962 Independence Supplement cover for the Uganda Argus. **Publications with fixed spine bindings and/or special papers** made up about 8% of the Primary allocations with items such as a guide to the switch to decimal currency; the 1972 Loughborough University Rag magazine; and a booklet about Fosters Steak House in Singapore. **Items illustrating a physical form due to a development in technology** constituted about 6% of the Primary allocations, however this was somewhat misleading as a) all seven of the items concerned were pocket diaries, and b) keeping seven similar items was hardly just keeping an example of a physical form.

Of the remaining Updated PIMRCs, at least one Primary allocation was made to each of the following criteria and, on that basis, they were kept in the Adjusted PIMRC:

- **Publications which mention, friends, colleagues or the owner** - four Primary allocations such as a page from a 1973 issue of the Singapore Straits Times with an advert for the shop managed by the Owner's mother; a 1972 Melody Maker article which mentioned someone who the Owner knew; and a page from a 1978 local newspaper with an advert inserted by the Owner.
- **Items published by an organisation or programme that the Owner works/worked for** – three Primary allocations such as a 1978 UK National Computing Centre Newposter; and a 1970 booklet on the first ten years of the Loughborough University Ergonomics Department.
- **Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy** – three primary allocations: one of the Owner's extracted teeth with a filling and large root; a letter with a packet of cut hair from a rag week charity head shave in 1972; and a pack of computer punched cards for stock control at Kodak from the early 1970s.
- **Items for which only the originals confirm their validity** – one Primary allocation – the Owner's UK identity card from 1949.
- **Items that the owner has written, produced, assembled or made a significant contribution to** - one Primary allocation – a small poster of things for sale hand-drawn by the Owner in the 70s.
- **Age that provides a quality of uniqueness** - one Primary allocation – front and back pages of a copy of the Daily Mirror dated 17Sep1949 found by the Owner in an attic.
- **Aesthetic or artistic quality including photos** - one Primary allocation – 1970s postcards of Le Bischenberg, the very stylish study centre for Credit Mutual, in Obernai near Strassbourg in France which the Owner stayed at for an HCI workshop.

Seven of the Updated PIMRCs received no Primary allocations at all. Figure 19 below compares this result with the PIMRCs which received no Primary allocations in the previous two studies.

Draft and Updated PIMRCs	Where the PIMRC originated	No Primary Allocations			No Secondary Allocations		
		1st study	2nd study	3rd study	1 <sup>st</sup> study	2 <sup>nd</sup> study	3rd study
Digitisation to be performed later	First study			x	x	x	x
Items to be put to work in their original form	First study		x	x		x	x
Items for which only the originals confirm their validity	First study - equivalent to IV #6		x			x	
Large documents which have particular qualities of impact and integrity.	First study			x			
Age that provides a quality of uniqueness	Equivalent to IV #4		x			x	
Copying explicitly prevented by copyright	Derived from the First study		x	x	x	x	x
Aesthetic or artistic quality	IV characteristic #2	x				x	
For use in exhibits	IV characteristic #5	x		x	x	x	
Item relating to the legality of an institution	IV characteristic #8	x	x	x	x	x	x
Executive Policy document	IV characteristic #9		x	x	x	x	x

**Figure 19 - PIMRCs which received no Primary allocations in particular studies**

Based on the usage information in Figure 18, the three criteria a) Copying explicitly prevented by copyright, b) Item relating to the legality of an institution, and c) Executive Policy document, were excluded from the Adjusted PIMRC list on the basis that their occurrence in the three studies was low or non-existent. Instead, the criterion **“Other – specify reason”** was added to cater for the possible occurrence of these or any other reasons that may occur (both the literature review and these three studies have indicated that a very diverse range of reasons is possible and that additional ones could well emerge in different collections).

For 62 of the 109 items assessed in the memento study, the primary reason for their retention did not appear in the Updated PIMRC list. One of these items was a set of family photos found in the loft of a house 40 years ago and which presumably belonged to a previous owner of the house. The Owner did not destroy them believing he did not have the right and had always intended to try and find relatives to return the photos to. This, then, was another potential criterion to add to the Adjusted PIMRC, though it was questionable that a single instance across all three studies merited its inclusion. However, on the basis of the author’s experience, both in forgetting to give back items that he has been lent, and in not receiving back items he has lent out, the criterion was included in the Adjusted PIMRC as **“Does not belong to the Owner”**.

A group of seven items pointed to another gap in the Updated PIMRC. These were items which might be described as unusual, novelty or funny items. For example, an Ede & Ravenscroft card flyer showing the type and price of university gowns available for hire in 1972; a beer mat advertising the Snowball drink using a very not-politically-correct drawing of a scantily clad lady; an Escher drawing playing with perspective showing steps appearing to go up where they should go down etc. and with arrowed lines noting where the Owner’s career was then and where it would be in the future; a newsletter from a UK member of Parliament summarising the activities performed by Parliament in 1972-3; and a small matchbook size cardboard container saying “Pussy Stretcher” on the outside and opening up to show a piece of cardboard with a picture of a cat lying down on an ambulance stretcher (well what else?). The Owner wanted to keep these items in order to enjoy their novelty value and to share it with others. In the digital medium they would be locked away with hundreds of other items and probably wouldn’t ever be looked at. In a presentation folder on a bookshelf, however, they are easy to access and to take to show somebody else. Therefore, another category was added to the Adjusted PIMRC – **“For easy access and showing to others”**.

All the remaining 54 items for which there was no appropriate primary criterion in the Updated PIMRC list, had all been retained for a variety of sentimental, emotional and personal reasons. These included the following different sub-categories:

**As mementos of events and activities the Owner had taken part in.** For example, a programme for the school Sports Day; programmes for secondary school plays; the annotated text of a poem performed at a school elocution competition; documents associated with a university Rag Week raffle for which the Owner and a friend won the first prize of a weekend for two in Paris for selling the most tickets; and a hand drawn map of the USA showing stops in a one week business trip;

**As mementos of events the Owner had attended.** For example, tickets to see rock bands such as Fleetwood Mac; a ticket to a Cincinnati Reds baseball game; University Hall Formal Dinner menus; and programmes to various theatre productions.

**As mementos of places that had been visited:** For example, a brochure on the Houston Astrodome.

**As mementos of other aspects of the Owner's life.** For example, school class lists and term calendars, a business card from a couple who ran the local pub for a while before returning to New Zealand; a circular from the Owner's university department listing the final year results and grades achieved by the Owner and other people on the course; a single blank page of headed notepaper with the address of the Owner's grandmother's house; and copies of invites the Owner sent out for flat parties when he was younger.

**As mementos of the Owner's parents.** For example, business cards of the Owner's father; and a 1959 booklet on the Singapore Harbour Board with much information and many pictures relating to the Owner's father's job as a shipping agent.

**As mementos of the owner's views and opinions:** For example, a 1973 newspaper article about yet another British tennis hopeful; and a 1979 newspaper editorial.

Some of the items in this set of 54 represented particularly significant aspects of the Owner's life, whilst others were of relatively minor aspects but important in their own way. All meant a lot to the Owner, so much so that he believed that not to have the original would detract a little from his understanding and knowledge of himself, his experience, his history and his place in the world. Of course the Owner could still have had a digital version, or, if not even that, the memory of the item. However, it is the physical object – the original form in which the memento became a memento – that provides the strongest hook to recollect and reconfirm whatever it is representing.

To cater for all these types of memento the following criterion was added to the Adjusted PIMRC: **"Items that the Owner wants to keep as mementos of his/her life"**.

As a result of all the analysis described in this section, the following changes were made to the Updated PIMRC list to form the Adjusted PIMRC:

- "Copying explicitly prevented by copyright" was removed.
- "Items relating to the legality of an institution" was removed.
- "Executive Policy document" was removed.
- "Other – specify reason" was added.
- "Does not belong to the Owner" was added.
- "For easy access and showing to others" was added.
- "Items that the Owner wants to keep as mementos of his/her life" was added.

The Adjusted PIMRC to emerge from these studies, and the percentage primary allocations made to each criterion in the Adjusted PIMRC across all the studies is shown in Figure 20 below.

Adjusted PIMRC	% of times allocated as the Primary retention reason		
	1 <sup>st</sup> study	2nd study	3rd study
1.Digitisation to be performed later	15	6	0
2.Items to be put to work in their original form	4	0	0
3.Items for which only the originals confirm their validity	2	0	1
4.Trophy items to be collected and enjoyed in the future	5	16	15
5.Large documents which have particular qualities of impact and integrity	8	12	0
6.Publications with fixed spine bindings and/or special papers	10	16	8
7.Publications which mention, friends, colleagues or the Owner	2	3	4
8.Items published by an organisation or programme that the Owner works/worked for	27	24	3
9.Items that the Owner has written, produced, assembled or made a significant contribution to	21	16	1
10.Physical f features which make it difficult to digitise the item and/or to reconstruct it from the digital copy	3	4	3
11.Items illustrating a physical form due to a development in technology	1	1	6
12.Age that provides a quality of uniqueness	1	0	1
13.Aesthetic or artistic quality including photos	0	1	1
14.For use in exhibits	0	1	0
15.Items that the Owner wants to keep as mementos of his and her life	0	0	48
16.For easy access and showing to others	0	0	8
17.Does not belong to the Owner	0	0	1
18.Other – specify reason	1	0	0
<b>Totals</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>% of times more than one Adjusted PIMRC allocated for a particular item in 1<sup>st</sup> study = 32%</b>			
<b>% of times more than one Adjusted PIMRC allocated for a particular item in 2nd study = 28%</b>			
<b>% of times more than one Adjusted PIMRC allocated for a particular item in 3rd study = 72%</b>			

**Figure 20 - Frequency of Adjusted PIMRCs being identified as a Retention Reason in all Studies**

## 5 Discussion

This paper seeks to establish if the NARS characteristics are applicable within the PIM domain; if they need adjusting for effective use within the PIM domain; and what set of Retain/Destroy criteria would be most useful in the PIM domain. Each of these points is discussed below in the light of the results described in the previous section.

### 5.1 Are the NARS Intrinsic Value characteristics applicable within the PIM domain?

Allocations made to the IV characteristics in each of the three studies are summarised in Figure 21 below.

IV Characteristic	Percentage of times cited as the <b>Primary</b> reason for retention			Percentage of times cited as the <b>Secondary</b> reason for retention (note – multiple Secondaries may have been allocated to one item)		
	1st study	2 <sup>nd</sup> study	3 <sup>rd</sup> study	1st study	2 <sup>nd</sup> study	3 <sup>rd</sup> study
1. Physical form	0.9	1.1	6.4	0.9	2.2	0.9
2. Aesthetic quality	0	1.1	0.9	0.3	0	4.6
3. Physical features	2.9	4.4	2.8	0.9	1.1	6.4
4. Age	0.9	0	0.9	1.2	0	7.3
5. Use in exhibits	0.3	1.1	0	0	0	0.9
6. To answer authenticity Questions	1.2	0	0.9	0.3	0	4.6
7. Significant links	6.1	15.6	15.6	4.1	2.2	7.3
8. Legality of an institution	0	0	0	0	0	0
9. Executive policy document	1.2	0	0	0	0	0
<b>An IV characteristic WAS chosen</b>	<b>13.5</b>	<b>23.3</b>	<b>27.5</b>	<b>7.7</b>	<b>4.4</b>	<b>26.6</b>
<b>An IV Characteristic was NOT chosen</b>	<b>86.5</b>	<b>76.7</b>	<b>72.5</b>	<b>92.3</b>	<b>95.6</b>	<b>73.4</b>
Total Percentage	100	100	100	100	100	100
Total number of items in study	344	90	109	344	90	109
<b>% of times more than one IV characteristic allocated for an item</b>				2.6	1.1	13.8

**Figure 21 - Allocations made to the IV Characteristics across the three studies**

Figure 21 shows that the IV characteristics were only allocated to, at most, a third of the items scrutinised i.e. at least two thirds of the items were retained in their original form for reasons other than those defined by the IV characteristics. Having said that, though, the figures reveal that some of the individual characteristics were allocated more than others. Most use was made of #7 (association with famous or historically significant people, places, things, issues, or events) and #3 (unique or curious physical features); whilst no use was made of #8 (legal basis of an agency or institution), and little use was made of #9 (formulation of policy). These findings show that some of the IV characteristics are applicable in PIM, but that many other reasons for retaining originals are encountered within the PIM domain. Hence the final list of PIM Retention Criteria (the Adjusted PIMRC) includes elements of the IV characteristics augmented by eleven other reasons.

Why is this the case? One reason which emerged in the literature survey is that the Archival domain, for which the IV characteristics were devised, is different from the PIM domain. The Archival domain aims to provide an impartial, long term, public record using established collections, whereas, in the PIM domain, collections are being built by partial individuals for their own purposes. Little wonder, then, that the Intrinsic Value characteristics are not an exact fit in PIM.

Perhaps there is also a clue in the word “value”. As we have seen in the literature survey, this is a term with a considerable philosophical track record, and is used generously within the Archiving profession for both Decisions about Content and Decisions about Originals. However, within the PIM domain there is more usage of terminology like “reasons for keeping things”. Perhaps a more detailed exploration of these different terminologies is a potential area for further study of the relationship between the Archival and PIM domains.

**5.2 Do the NARS Intrinsic Value characteristics need adjusting to enable them to be used effectively within the PIM domain?**

In the case of the three studies described in this paper, substantial adjustments were made to the set of IV characteristics to cover all the reasons for keeping originals that were encountered. As already noted, some of the IV characteristics were excluded from the final list of PIM Retention Criteria which emerged at the end of the third study. In addition, it was also deemed necessary to adjust some of the language of those characteristics that were included as summarised in Figure 22:

Original IV language	Language in Adjusted PIMRC	Reasons for changed language
<b>IV#1:</b> Physical form that may be the subject for study if the records provide meaningful documentation or significant examples of the form	<b>PIMRC#11:</b> Items illustrating a physical form due to a development in technology	<ul style="list-style-type: none"> <li>To eliminate the notion of “study” which is not a general PIM objective.</li> <li>To make the connection to technology developments explicit (as is done in the explanation of this criterion in the NARS document).</li> </ul>
<b>#2:</b> Aesthetic or artistic quality	<b>PIMRC#13:</b> Aesthetic or artistic quality including photos	<ul style="list-style-type: none"> <li>To make the inclusion of Photos explicit (as is done in the explanation of this criterion in the NARS document).</li> </ul>
<b>#3:</b> Unique or curious physical features	<b>PIMRC#10:</b> Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy	<ul style="list-style-type: none"> <li>To emphasise the specific PIM concerns of difficulties in scanning, of replicating an equivalent interaction experience on screen, and of reconstructing the item from the digital copy.</li> </ul>
<b>#4:</b> Age that provides a quality of uniqueness	<b>PIMRC#12:</b> Same language used	
<b>#5:</b> Value for use in exhibits	<b>PIMRC#14:</b> For use in exhibits	<ul style="list-style-type: none"> <li>The word “value” is excluded as this is not a term in common use in PIM, and the remaining phrase provides a clear reason to retain an item.</li> </ul>
<b>#6:</b> Questionable authenticity, date, author, or other characteristic that is significant and ascertainable by physical examination	<b>PIMRC#3:</b> Items for which only the originals confirm their validity	<ul style="list-style-type: none"> <li>The title was changed to reflect the more immediate PIM-type issue of “do I need this to prove I have this or I did that?” as opposed to the more academic Archival view of verification of historical items.</li> </ul>
<b>#7:</b> General and substantial public interest because of direct association with famous or historically significant people, places, things, issues, or events	<b>PIMRC#4:</b> Trophy items to be collected and enjoyed in the future	<ul style="list-style-type: none"> <li>There is not a one-to-one relationship between these two – more that the IV characteristic is potentially a subset of Trophy items.</li> <li>The words of the PIM criterion are chosen deliberately to emphasise collecting and future use; and to eliminate the notion of a widespread audience as opposed to the rather more general IV term “public interest”.</li> </ul>

**Figure 22 - Language changes to IV characteristics included in the PIM Retention Criteria**

The language changes reflect the notion that the PIM domain has different objectives from the Archival domain. Consequently, the wording changes generally do two things, a) remove activities and terminology such as “study”, “physical examination” and “value” which are unlikely to be prominent or even recognised in the PIM domain, and b) make the name more explicit so that further description, as in the NARS characteristics, is unnecessary. For example, the inclusion of “development in technology” in PIMRC#11; the inclusion of “including photos” in PIMRC#13; and the inclusion of “features which make it difficult to digitise the item and/or to reconstruct it from the digital copy” in PIMRC#10.

As well as including some of the IV characteristics in the Adjusted PIMRC, the following additional items were included:

- #1. Digitisation to be performed later
- #2. Items to be put to work in their original form
- #5. Large documents which have particular qualities of impact and integrity
- #6. Publications with fixed spine bindings and/or special papers
- #7. Publications which mention, friends, colleagues or the owner
- #8. Items published by an organisation or programme that the owner works/worked
- #9. Items that the owner has written, produced, assembled or made a significant contribution to
- #15. Items that the owner wants to keep as mementos of his and her life
- #16. For easy access and showing to others
- #17. Does not belong to the owner
- #18. Other – specify reason

All but the first and last of the above additional criteria emerged during the three studies as genuine reasons for keeping specific originals. The first and last criteria are to do with the practicalities of the PIM domain. In the case of the first one (digitisation to be performed later), the experience of these studies indicates that, amid busy schedules, or when without appropriate technology, or possibly for a myriad other reasons, individuals may well put off the digitisation process. Regarding the last criteria (other – specify reason), it seems only prudent to allow for the possibility of more criteria emerging, since new reasons for keeping originals emerged in each of the three studies and the literature review identified other reasons not included in the Adjusted PIMRC.

### **5.3 What set of Retain/Destroy Criteria would be most useful in the PIM domain?**

On the assumption that the three studies described in this paper are reasonably representative of at least the documents and mementos parts of the PIM domain, then the Adjusted PIMRC list in Figure 20 is a good first approximation of a set of Retain/Destroy criteria for those parts of the PIM domain. However, three key points need to be borne in mind when using the criteria:

- a) **The Adjusted PIMRC is not an exhaustive definitive list of possible criteria.** It is clear from the literature review, and the three studies reported here, that the types of materials which may be encountered within the PIM domain varies hugely, and there are many different ways of categorising objects and the rationale for keeping them. Despite the Adjusted PIMRC listing seventeen different possible reasons for retaining originals after digitisation, there were still several other reasons identified in the literature review that didn’t make it into the Adjusted

PIMRC list as shown in Figure 23. This work provides a strong indication that it is unlikely that there could ever be a single definitive list of PIM Retention Criteria. Hence the importance of having an “Other” category in the Adjusted PIMRC.

<b>Reasons for keeping Originals identified in the literature review in sections 2.2.1-3</b>	<b>Equivalent Adjusted PIM Retention Criteria and/or NARS IV criteria</b>
RKO1 - Rarity value	No equivalent in the Adjusted PIMRC
RKO2 - Monetary value	No equivalent in the Adjusted PIMRC
RKO3 - Research value	Could come under Adjusted PIMRC #2 (Items to be put to work in their original form)
RKO4 - Social/historical/cultural value;	Could come under Adjusted PIMRC #4 (Trophy items to be collected and enjoyed in the future)
RKO5 - Legal requirement	Covered by Adjusted PIMRC #3 (Items for which only the originals confirm their validity)
RKO6 - Records about a collection	No equivalent in the Adjusted PIMRC
RKO7 - Evidentiary value	Covered by Adjusted PIMRC #3 (Items for which only the originals confirm their validity)
RKO8 - To preserve the original size of a photograph	Covered by Adjusted PIMRC #13 (Aesthetic or artistic quality including photos)
RKO9 - To be able to experience an item with all the senses	No equivalent in the Adjusted PIMRC
WPKT7 - Items to put on show to frame the family	Could come under Adjusted PIMRC #4 (Trophy items to be collected and enjoyed in the future)
WPKT8 - Items to be preserved out of a need to fulfill a sense of duty towards the family	No equivalent in the Adjusted PIMRC
RAD1 - items that are too fragile to digitise	Same as Adjusted PIMRC #10 (Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy)
RAD4 - Lack of confidence that digital files will last as long as microfilm	No equivalent in the Adjusted PIMRC
RAD5 – Items for which there is a risk of disposing of the original in the incorrect belief that the digitised version is a perfect copy	No equivalent in the Adjusted PIMRC
RAD6 - Items for which there is a risk that a digital version may only provide a partial view	Could come under Adjusted PIMRC #10 (Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy)
RAD7 - Items for which there is a risk of being de-contextualised if they are looked at in their digitised form	No equivalent in the Adjusted PIMRC

**Figure 23 - Assessment of whether the reasons for retaining originals identified in the literature review in sections 2.2.1-3 are included in the Adjusted PIMRC**

- b) **The PIMRCs that emerged from the studies reported here are not mutually exclusive.** Several of the PIMRCs may apply to one item. Indeed it was for this reason that the three studies elected to define both Primary and Secondary reasons for retaining originals in order to produce more focused results. Although a mutually exclusive set of retention criteria may be feasible in principle, these studies suggest it is highly unlikely. Many instances of two or more retention criteria applying to one item occurred in these three studies (32%, 28% and 72% respectively when the Adjusted PIMRC were allocated retrospectively – see Figure 19). Indeed, it is quite possible in the partial world of the PIM owner, that a multiplicity of applicable PIMRCs might tip the balance in favour of retaining an item; and, commensurately, that the borderline applicability of more than one PIMRCs may not be sufficient to persuade the Owner to retain an original.
- c) **When in doubt, retain don't destroy.** It is the experience of the Owner of the collections in the studies reported here, that opinions and feelings about items within collections can change with time and circumstances. However, once an item is destroyed there is no getting it back. Hence, it is prudent to err on the side of caution when applying the PIMRCs - if there is any doubt, retain don't destroy. Once an original is gone its gone for good.

The question of what use can be made of a set of Retain/Destroy criteria is an interesting one. In the Literature review we saw that the Archivists interviewed by Metters were not all fully aware of the IV characteristics and did not apply any such list of criteria in any kind of rigorous way. Owners in the PIM domain are likely to be even less inclined to follow guidelines and checklists and much more likely to do what they feel is best at the time. Even if this is the case, however, a set of retain/destroy criteria might still have the following uses:

- i. **Background guidance for Owners:** As the practice of Personal Information Management becomes recognised as a useful, if not essential, activity for individuals, families and their descendants, so more people may look for general guidance on what to do. This is not just a fanciful conjecture - the Library of Congress already makes such guidance available to the general public (Library of Congress, 2014). A set of Retain/Destroy criteria to assist in Decisions about Originals might be useful to include in any such general guidance. Indeed, such guidance might advise that best practice would be to record reasons for retaining particular items as a potential aid to new Owners who inherit or are given collections downstream.
- ii. **As a checklist for inheritors:** For those PIM collections that get inherited or given away, the new Owners may be more impartial and more inclined to take a considered view about a collection. Such people may want a checklist that they can apply methodically as they assess the collections they have come to possess.
- iii. **As an aid to research:** The PIM field is still young and is likely to continue to be significantly affected by changing technology for the foreseeable future. Given both these points, more understanding about specific aspects such as Decisions about Originals, may assist the general research effort.

## 6. Conclusions

This paper has established that the NARS Intrinsic Value characteristics provide a useful starting point for considering the question of what originals to retain in those PIM collections dealing with documents and mementos; but that only seven of the nine IV characteristics are applicable within the PIM domain and that some of those seven require adjustment to their scope and naming. Furthermore, they need to be accompanied by a further 11 additional criteria to make a comprehensive set of PIM Retention Criteria (PIMRC) suitable for use with collections of documents and mementos.

The set of 18 PIMRCs that emerged from this paper are unlikely to be definitive or complete, and consequently an “Other” criteria has been included as one of the 18. Nor are the PIMRCs mutually exclusive. The studies reported in this paper indicate a high occurrence of two or more criteria applying to any one item.

It is thought unlikely that individual Owners of PIM collections will want to apply a checklist of PIMRCs methodically, but are far more likely to use such information as background guidance. Owners who inherit or are given collections may be more inclined to use the PIMRCs particularly for their initial assessment of a collection. It is believed that knowledge about PIMRCs will assist the general ongoing research into the PIM domain.

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## Change Log

#	Date/ version	Change	Reason for change
0	02Apr14 v1.0		
1	04Apr14 v1.1	Fig. 10 – Number of times more than one IV characteristic allocated for a particular item changed from 10 (2.9%) to 9(2.6%)	Error discovered when tidying up the results spreadsheet
2	04Apr14 v1.1	Fig 10 - The total percentage box for secondary reasons was greyed out.	It was realised that, because multiple secondary reasons can be cited for one item, then the total including the number of times no characteristics were cited, can be more than the total number of items.

#	Date/ version	Change	Reason for change
3	04Apr14 v1.1	First para of section 4.1.2 – it is now made clear that Fig. 11 records the number of times EITHER Primary or Secondary reasons for retention were cited; and that the total number of times an IV characteristic was cited may differ from the total number of equivalent RFND criteria cited.	Fig. 11 was originally produced before the distinction between primary and Secondary allocations was introduced.
4	04Apr14 v1.1	Fig 11 – changes throughout to the numbers and the RFND criteria listed.	As above for Change #3
5	04Apr14 v1.1	Section 4.1.3 - Date of the MacUser magazine mentioned in the 5 <sup>th</sup> para changed from 1996 to 1986.	Factual error
6	04Apr14 v1.1	Fig 13 – Number of Primary allocations for Draft PIMRC #3 changed from 5 to 4; for Draft PIMRC #4 changed from 16 to 19; and for Draft PIMRC #8 change from 92 to 90. Percentages were changed accordingly. The percentage for Primary allocations for Draft PIMRC #6 was corrected from 1.2 to 10.2.	Fig. 11 was originally produced before the distinction between primary and Secondary allocations was introduced and some errors were made in the transition.
7	04Apr14 v1.1	Fig 13 – The number of Secondary allocations for Draft PIMRC #3 changed from 0 to 1; for Draft PIMRC #4 changed from 2 to 16; for Draft PIMRC #7 from 0 to 1; for Draft PIMRC #8 from 8 to 10; for Draft PIMRC #10 from 2 to 3; and for Draft PIMRC #12 from 3 to 4.	As above for Change #6
8	04Apr14 v1.1	Fig 14 – The number of times no IV characteristics were cited as a secondary reason for retention was changed from 85 to 86. Also the total percentage box for secondary reasons was greyed out	As above for Change #2
9	04Apr14 v1.1	Fig 16 – The number of times no IV characteristics were cited as a secondary reason for retention was changed from 74 to 80 and the equivalent percentage changed from 68 to 73.4. Also the total percentage box for secondary reasons was greyed out	As above for Change #2
10	04Apr14 v1.1	Fig 17 - The number of times no Updated PIMRC characteristics were cited as a secondary reason for retention was changed from 28(25.7%) to 35(32.1%) and the total changed commensurately from 106 to 141.	An error was discovered in the Results spreadsheet.
11	04Apr14 v1.1	Para below Fig 17 - The claim that 36% of all the allocations had been made to Trophy items was changed to 15%.	This was an error in the text.
12	04Apr14 v1.1	Fig 18 – The PIMRC “Aesthetic or artistic quality” was included and it was indicated that it had had no primary allocations in the 1 <sup>st</sup> study and no secondary allocations in the second study. It was indicated that the PIMRC “Items for which only the originals confirm their validity” did have a secondary allocation in the 1 <sup>st</sup> study.	Errors were discovered in the Results spreadsheet.
13	04Apr14 v1.1	Fig 20 – the number of times an IV characteristic WAS chosen and was NOT chosen as a Secondary reason for retention in the 2 <sup>nd</sup> study were changed from 94.5% to 95.6% and from 5.5% to 4.4% and respectively. For the same figures in the 3 <sup>rd</sup> study, 68% was changed to 73.4% and 32% was changed to 26.6%. The fact that no changes were required to the 1 <sup>st</sup> study figures is coincidental.	It was realised that, because multiple secondary reasons can be cited for one item, then the percentage of items for which no secondary reasons were cited is the anchor number which must be deducted from 100% to obtain the number of items for which a secondary item WAS chosen.
14	04Apr14 v1.1	Fig 20 – The figure for the % of times more than one IV characteristic allocated for an item for the 1 <sup>st</sup> study was changed from 2.9% to 2.6%	An error was discovered in the Results spreadsheet.

#	Date/ version	Change	Reason for change
15	20Apr14 v1.2	Section 2.2.1 – correction to the numbering of the B references which previously went from B1 to B9 leaving one number out. The B numbers now go from B1 to B8.	This was an error in the text.
16	20Apr14 v1.2	The list at the end of Section 2.2.1, and the subsequent commentary about whether originals would be retained for each element on the list, has been put into table format as Figure 3. The prefix for the numbering of the elements in the list has been changed from RIC (Reasons for Including in Collections) to WPKT (Why People Keep Things). All subsequent Figures in the paper have been renumbered.	These changes have been made to make it easier to read and understand the points that are being made.
17	20Apr v1.2	The Figure in section 2.2.2 (now Figure 4 – previously Figure 3) has been adjusted to include a column indicating whether originals would be retained or not (this information was previously in text below the figure).	These changes have been made to make it easier to read and understand the points that are being made.
18	20Apr v1.2	Section 2.2.2 - the designation of RFD5 has been changed from “it may be desirable to retain the originals after digitisation” to “Maybe - maybe not”. The designations of RAD1 and RAD4 have been changed from “it is not possible to infer that originals would be retained or not” to “If digitisation did occur, originals would be retained”. For RAD5 the designation has changed from “the original is clearly not retained” to “originals would be retained to mitigate against the risk”.	On further review it was decided that these were the correct inferences to make.
19	20Apr14 v1.2	Section 2.2.3 - The points in the paragraph describing aspects of the Kirk & Sellen reference have been removed and included in the Kirk & Sellen paragraph that was already in section 2.2.1. The equivalent RKO item at the end of the section (RKO9 - Items that are unique in the circumstances that they are being remembered; and RKO10 - Items which, when used, spark a memory) have been removed.	The points highlighted in the Kirk & Sellen reference were not points about keeping originals after digitisation but points simply about keeping things i.e. they were incorrectly included in section 2.2.3
20	20Apr v1.2	Section 2.2.3 – bullets from Metter’s interviews regarding characteristics that can’t be captured by digitisation: notes added after the “Informational” bullet to the effect that this will not be regarded as a valid reason for keeping originals. This item has also been excluded from the list of reasons for keeping originals at the end of the section.	On further review it was decided that it is incorrect to assume that this is a valid reason for keeping originals.
21	20Apr14 v1.2	In the summary list of Reasons for Keeping Originals at the end of section 2.2.3, The “Informational content” point (designated RKO4) has been removed and the remaining RKO points renumbered.	On further review it was decided that this iss not a valid reason for keeping originals.
22	20Apr14 v1.2	A table has been added to section 5.3 showing an assessment of whether the reasons for retaining originals identified in the literature review in sections 2.2.1-3 are included in the Adjusted PIMRC.	To make use of the intellectual work done it the literature review by comparing it against the results of the studies.
23	18May14 v1.3	Inclusion of Decisions about Ownership into Figure 1 and in the paragraph at the beginning of Section 2.2.	These types of Decisions are clearly implied by the options for what to do with a collection shown in the top half of the diagram, and therefore need to be included for completeness.