

## IV in PIM: The Applicability of Intrinsic Value in Personal Information Management

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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 PIM collection Owners may take, is described; and Decisions about Content, about Digitisation and about Originals are explored in the literature. Three practical studies assessing the NARS and other retention criteria are described: a) a review of reasons for retaining 344 originals in a collection of thousands of personal Job Documents b) the identification of reasons for retaining 90 of 745 items being digitised in the Job Documents collection, and c) a review of reasons for retaining 109 originals in a collection of 400 Mementos. It was determined that seven of the IV criteria are applicable within the PIM domain, subject to changes in language and the addition of eleven other criteria. The set of 18 PIM Retention Criteria emerging from this work may be of use to PIM collection Owners 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.

### 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, pp.3 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, pp.402). 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.

These are essentially Retention Criteria which guide Archivists in deciding whether to keep originals of items either instead of, or as well as, microfilming or digitising them. The Owners of PIM collections can face similar decisions; however, the author has been unable to find such guidance in the PIM domain. 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 investigation, then, set out to answer the following questions:

- A. Are the NARS Intrinsic Value criteria applicable within the PIM domain?
- B. Do the NARS Intrinsic Value criteria 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, the retain/destroy decisions made for two personal collections were investigated with the aim of providing insights which could be used to inform subsequent, wider, more generalisable studies by other researchers.

## **Context and Related Research**

### *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 (subsequently referred to as “*Collections*”), are personally managed subsets of a PSI and are made up of Information items (subsequently referred to as “*Items*”), such as paper documents, electronic documents, digital music, emails, and web pages (Jones, 2011, pp.21 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 author's experience and aimed at providing the broad context within which the keeping of originals occurs.

The person a Collection belongs to is 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 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**.

The Current Owner can make decisions about what new Items to include in the Collection or what Items to remove from it. These are **Decisions about Content**. The content of a Collection may include:

- A. references or links to documents elsewhere (**Refs/Links to Items Located Elsewhere**);
- 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, or Word documents;
- 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).

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, removing it is highly unlikely and something the author has never encountered. It is only described here for completeness, and is not included in Figure 1.

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 a folder called 'archive'; 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**.

The above concepts and terms are illustrated in Figure 1.

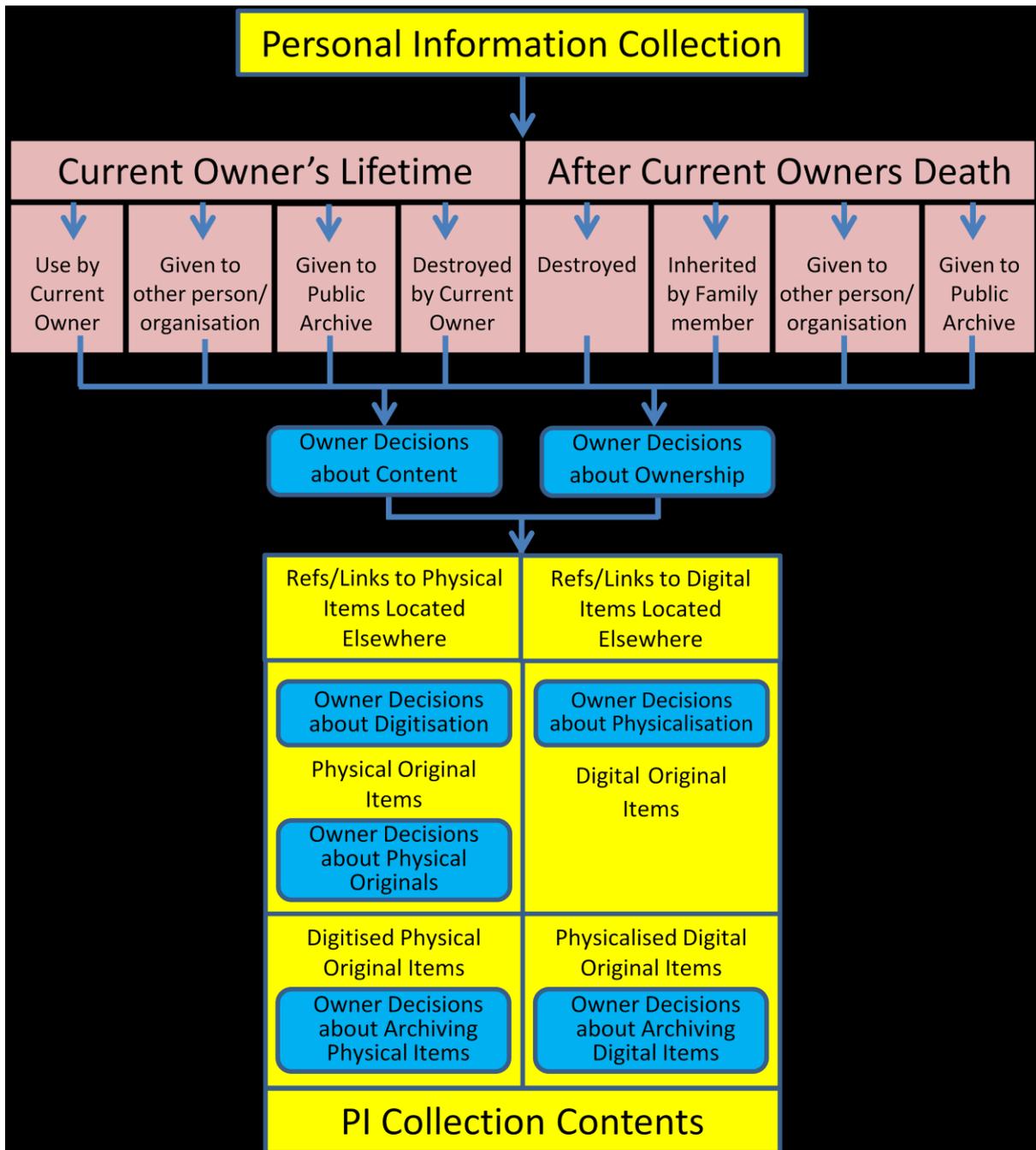


FIG. 1. Concepts and Terms relating to decisions associated with managing Personal Information Collections

Of the seven types of Owner Decisions highlighted in the blue rectangles in Figure 1, one is about what is to be done with the collection – **Decisions about Ownership**; two of them involve decisions about changing the form of the content – **Decisions about Digitisation** and **Decisions about Physicalisation**; two of them involve decisions about archiving content – **Decisions about Archiving Physical Items** and **Decisions about Archiving Digital Items**; and two of them 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 investigation is focused on, however, in reviewing the literature, **Decisions about Content** are also considered 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 scan it, they may well decide to keep the original for the same reason – and that is a Decision about Physical Originals. In similar vein, literature concerning **Decisions about Digitisation** will also be reviewed since they are closely tied to the point when Decisions about Originals are taken and may provide some relevant insights.

#### *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 summarised findings from a literature review documented in Williams et al (2009). It identified the following potential reasons why people keep files for the long term: 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, pp.12). The Digital Lives project also 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). After respondents had been requested to think about a recent computer file that is of great importance to them, they were asked: “What was the *primary* value to you of that particular computer file?” with the following options provided (the rounded percentages of first the Professional group and second the Digital Public group, that selected a particular option are shown in brackets after each option): B1.colleagues (5, 14); B2. final version (11, 4); B3. interest to future historians (46, 20); B4. sentimental (10, 18); B5. working document (3, 5); B6. sensitive, personal or financial information (23, 32); B7. personal reference (2, 2); B8. other (1, 6) (John et al, 2010, pp.31)

In addition to the online surveys described above, the Digital Lives project also interviewed 25 ‘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, pp.9#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 (Whittaker, 2011). The study identified the following reasons why people were keeping items: 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).

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

based on home visits and interviews with 11 UK families. 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.”* (Kirk & Sellen, 2010, pp.10:10). It documents 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 example 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, pp.10:37). 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”* (pp.10:34). The six values are (pp.10:15-10-29):

- 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, pp.144) provides further insight as to why such sentimental artefacts are so widely valued: *“The reason therefore why heirloom, 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, pp.13)

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”* (Marshall et al, 2007, pp.30). 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, pp.2-6).

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 in Table 1 (the numbering of the PIM values has been added for the purposes of this paper). 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, pp.66-67).

TABLE 1. Value Folksonomy for Personal Archives (from Bass 2013, pp.66-67)

|   |
|---|
| <p><b><u>PIM Identifications of Value</u></b></p> <p><b>H1. Identity Value:</b> Items involved in the continued construction and expression of the self.<br/> <b>H2. Personal Memory Value:</b> Items facilitating re-encounters with the personal past.<br/> <b>H3. Personal and Familial Historical Value:</b> Items recording individual and shared narrative.<br/> <b>H4. Emotional and Sentimental Value:</b> Items witnessing creativity and achievement, and eliciting emotion.<br/> <b>H5. Functional Value:</b> Items serving as reference or administrative utility in day-to-day life.<br/> <b>H6. Posterity and Legacy Value:</b> Items perpetuating a conception of a life or career for external consideration.</p> |
| <p><b><u>Archival Identifications of Value</u></b></p> <p><b>Evidential Value:</b> Records documenting functions, activities, and transactions of persons.<br/> <b>Informational Value:</b> Records providing information on significant persons and of potential use for historical and sociological research.<br/> <b>Narrative Value:</b> Records involved in the process of storytelling and autobiography.<br/> <b>Societal and Cultural Value:</b> Records documenting the contemporary character, personality, intimacy, beliefs, and spirituality of individuals within society.</p>  |

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 Table 2 – even though all of the material discussed in this sub-section is cited in Bass’s paper. Table 2 also provides a view as to whether originals are likely to be retained if the item was digitised.

TABLE 2. A possible categorisation of Why People Keep Things (WPKT) and assessment of whether originals would be retained if digitisation took place

| <b>Reason Why People Keep Things (WPKT)</b>   | <b>Contributing reasons from literature reviewed earlier in this 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; 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; 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; 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.   | Maybe - maybe not                                      |
| <b>WPKT7.</b> To frame the family   | E4. framing the family.  | Yes  |
| <b>WPKT8.</b> To fulfil 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                                      |

#### *Literature concerning Decisions about Digitisation*

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 (Metters, 2011, pp.45-50):

- 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);

- wider access to items that are in particularly high demand or that are closely controlled for security, fragility, or other reasons;
- for photos, Capell (2010) suggests that digitisation may enable content to be recovered from degraded negatives;
- digital images can provide higher visual quality than microfilm copies;
- digitisation can make pencil writing appear more clearly;
- digitisation enables you to zoom in and examine pen strokes and grain of paper.

Metters also identified the following reasons why digitisation should not be performed (Metters, 2011, pp.48-49):

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

Other reasons in the literature for not digitising include:

- 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, pp.24).
- A report from the Council on Library and Information Resources (CLIR) suggests that digitisation 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 and Smith, 2001, pp.25). 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 and Smith, 2001, pp.46).

Table 3 summarises the points described above and assesses what might be inferred about whether originals would be retained after digitisation.

TABLE 3. Reasons for and against digitising Items and assessment of whether originals would be retained if digitisation took place

| <b>Reasons for digitising items (RFD)</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  |
| RFD5. To provide wider access to items that are closely controlled for security, fragility or other reasons.                         | Maybe - maybe not  |
| RFD6. To recover content from degraded negatives.  | Maybe - maybe not  |
| RFD7. To obtain a higher visual quality than microfilm.  | Maybe - maybe not  |
| RFD8. To gain a clearer image of pencil writing.   | Maybe - maybe not  |
| RFD9. 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  |
| RAD5. There is a risk of disposing of the original in the incorrect belief that the digitised version is a perfect copy.             | If digitisation <i>did</i> occur, originals would be retained to mitigate against the risk                           |
| RAD6. There is a risk of providing a partial view of an object that is incomplete.   | As for RAD5.   |
| RAD7. There is a risk of de-contextualising the object in a way that prevents a full understanding of what the object is.            | As for RAD5.   |

#### *Literature concerning Decisions about Originals*

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, pp.104). It’s not surprising, then, that the NARS Committee used the term ‘Intrinsic Value’ to describe the criteria 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):

- Non-instrumental value - value that is not a means to some other end: value that is an end itself.
- 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.
- Objective value—value that an object possesses independently of the valuations of valuers.

However, some researchers believe that the NARS IV criteria do not comply with these definitions, and are in fact rather more subjective in nature (McRanor, 1996, pp.403). That may be a critical distinction for Archival theory (since Archivists are supposed to be impartial in their work - Eastwood, 1993, pp.237 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/or those which should be microfilmed or digitised. The following six criteria are listed:

- Testimony of unclarified or disputed authenticity or un-established origin (equivalent to NARS#6 - Questionable authenticity);
- 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);
- Special effective value through a connection to historical events or personalities (equivalent to NARS#7 – Association with famous or historically significant people, places, things, issues, or events);
- Didactic and exhibition value (equivalent to NARS#5 - Value for use in exhibits);
- Legal evidence – items for which there is a legal requirement for them to be kept in their original form) (no NARS equivalent);
- Testimony as to the history of archive and library collections (i.e. library working materials giving information about the collection in question) (no NARS equivalent).

In similar vein, the US CLIR document on 'The Artefact in Library Collections' reports that the library preservation community has agreed on the following features of physical objects that warrant their preservation in their original formats (Nichols & Smith, 2001, pp.9):

1. Age (equivalent to NARS#4 – Age);
2. Evidential value (similar to NARS#6 - Questionable authenticity);
3. Aesthetic value (equivalent to NARS#2 - Aesthetic or artistic quality);
4. Scarcity (no NARS equivalent);
5. Associational value (equivalent to NARS#7 - Association with famous or historically significant people, places, things, issues, or events);
6. Market value (no NARS equivalent);
7. Exhibition value (equivalent to NARS#5 - Value for use in exhibits).

Regarding point 2 (Evidential Value), the CLIR report states 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 and Smith, 2001, pp.10). It is the inclusion of these additional characteristics of originality, fidelity, fixity and stability that differentiate the CLIR feature from NARS#6.

Regarding characteristics that can't be adequately captured by digitisation, the following such points are recorded in Metters (2011):

- Digitisation cannot adequately capture paper quality, chain lines, binding/spines, and watermarks (pp.43) (this is addressed by NARS#3 - Unique or curious physical features).
- The surety of seeing and feeling a document in front of you is always missing from digital copies; the experiences of all of the senses (with the exception of sight) cannot be duplicated in a digital environment (pp.44) (no NARS equivalent).
- Some item's physical formats do not lend themselves to digitisation such as overlapping scrapbook items (pp.48) (this is addressed by NARS#3 - Unique or curious physical features).
- Research value (pp.37-38).
- Social/historical/cultural value (p38) (no NARS equivalent).
- Monetary value (pp.38) (no NARS equivalent).
- Digitising a photograph removes information about its size (pp.17-18) (no NARS equivalent).

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
- RKO2   Monetary value
- RKO3   Research value
- RKO4   Social/historical/cultural value
- RKO5   Legal requirement
- RKO6   Records about a collection
- RKO7   Evidentiary value which testifies that the item is original, faithful, fixed or stable
- RKO8   To preserve the original size of a photograph
- RKO9   To be able to experience an item with all the senses

#### *Literature concerning contemporary attitudes towards the NARS IV criteria*

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 (pp.37).
- Reading NARS' 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 (pp.38).
- 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 (pp.41).

## **Method**

The investigation made use of two sets of material: a collection of Job Documents and a collection of personal Mementos. Three studies of retain/destroy decisions were made across the two collections. A set of draft PIM Retention criteria (PIMRC) was derived in the first study and then refined in the second and third studies. The studies were performed by the author who is the Owner of the two collections, and 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 consistently applied across all of the material being investigated, they do nevertheless reflect the views of just one single individual.

### *First study - The Job Documents retain/destroy decision review*

The Job Documents collection is a personal collection of material relevant to the Owner's day to day work in four different organisations over 40 years (Wilson, 2001). It consists of about 180,000 pages of documents originating in paper format and about 5000 electronic application files. The contents cover a 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.. At the point when this study started, most of the paper originals had been digitised by scan or photo over the period 1995 to 2013, and, of those, 344 items (comprising some 11,300 pages) had been retained and were stored in three boxes as shown in Figure 2.



FIG. 2. The three boxes of retained Job documents at the start of the first study

In this first study, the 344 retained items were reviewed, one by one, and an assessment made as to whether any of the NARS IV criteria were the Primary or Secondary reasons for it having been retained and those applying were noted together with any comments regarding the reason for retention. Where none of the IV criteria applied as the Primary reason, the other reason why the item had been retained was noted. When all the items had been reviewed, the comments and other reasons were used in conjunction with the IV characteristics, and the allocations made to each, to produce a set of Draft PIM Retention Criteria (**Draft PIMRC**). Each of the 344 items in the study was then reviewed again and one or more of the newly derived Draft PIMRC was assigned to each one.

#### *Second study - Job Documents digitisation*

The Job Documents Digitisation study assessed the effectiveness of the **Draft PIMRC** for making retain/destroy decisions by reviewing items from the Job Documents collection as they were being digitised; and from this an **Updated PIMRC** was produced. The items concerned were 745 documents that had been archived many years ago and were the final set of documents to be digitised in the Job Documents collection. Figure 3 shows the 745 documents, consisting of 13550 pages, in their archive boxes before this study started.



FIG. 3. The four boxes of Job documents that had yet to be scanned at the start of the second study

Each of the 745 items was taken in turn, digitised and then assessed to decide whether to retain or destroy the paper originals. For those that were retained, all those Draft PIMRCs that applied as either Primary or Secondary reasons for retention were noted together with any general comments and other reasons for the physical item to be retained. 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 required to the Draft PIMRC. The Draft PIMRC was updated accordingly to produce the **Updated PIMRC**. Each of the retained items was then reviewed again and one or more of the newly derived Updated PIMRC was assigned to each one.

### *Third study - Memento retain/destroy decision review*

The Mementos collection is a personal collection of diverse items retained by the owner over the period 1958 – 1980. It reflects the interests and activities of an 8-30 year old individual's life and 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 after being digitised. Figure 4 shows the folders containing the original 696 items prior to being sorted and organised into a managed collection in 2013.



FIG. 4. The Mementos collection in three boxes prior to organising and digitising

In order to try and understand why people keep mementos, a record was kept in a spreadsheet of why items were included or excluded from the collection, and, if they were included, whether they were retained in physical form after being digitised.

The Memento retain/destroy decision review study assessed the effectiveness of the **Updated PIMRC** for making retain/destroy decisions for a contemporary collection of mementos, and produced an **Adjusted PIMRC**. Each of the items recorded in the memento spreadsheet as having been retained, was considered in turn and assessed against the Updated PIMRC to establish any PIMRCs that applied as either Primary or Secondary reasons for retention. Any general comments and other reasons for the physical item being retained were also noted. When this process had been completed for all items, the comments and other reasons were then reviewed, in conjunction with the Updated PIMRCs and the items that had been allocated to each, to identify changes required to the Updated PIMRC. The Updated PIMRC was adjusted accordingly to produce the **Adjusted PIMRC**.

### *Application of the Adjusted PIMRC to the items in the first, second and third studies*

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

### **Findings**

#### *Findings from the first study (Job Documents Retain/Destroy Decision Review)*

The number of times each IV criterion was identified as being the reason for retaining an item is shown in Table 4.

TABLE 4. Frequency of each IV criterion being cited as a retention reason in the 1<sup>st</sup> study

| IV criteria  | Cited as the <b>Primary</b> retention reason |            | Cited as the <b>Secondary</b> retention reason |      |
|--|--|------------|--|------|
|  | Frequency                                    | %          | Frequency                                      | %    |
| 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 that more than one IV criteria was cited for a particular item = 9 (2.6%)</b> |  |            |  |      |

The 313 'Comments and other reasons for retaining the physical item' that were recorded in this study were reviewed and significant features were noted. The notes were then used together with 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 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 and wireless keyboard 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 criteria "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. 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 criterion #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 criterion. 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 difficult 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 and disposing of 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 criterion #7 (General and substantial public interest because of direct association with famous or historically significant people, places, things, issues or events). The IV criterion 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 about 50 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 Office Automation 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 foldouts 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; and a 1994 Guardian personalised news sheet of the future produced on a very

tough but flexible 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 criterion #3 - "Unique or curious physical features", though the Owner's retention rationale was slightly different. For the IV criteria, 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 by the Owner with a presentation programme. This category is covered by IV criterion #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 was adopted in this study 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 criterion #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 criterion 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 were reviewed, as shown in Table 5, to identify any extra criteria that were needed in addition to those identified in the above paragraphs.

TABLE 5. Review of the IV criteria to identify if additional criteria need to be added to the Draft PIMRC

| <b>IV criteria</b>   | <b>Comments</b>   | <b>New criteria to be included in the Draft PIMRC</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 criteria  | 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 it 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 included 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"                       |

All of the Retention Criteria that were identified earlier in this section are listed in Table 6. This is the list of **Draft PIMRC** which was subsequently used in the second study reported in this paper. In the final part of this first study, the Draft PIMRC were assigned to each of the items originally reviewed 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 Table 6.

TABLE 6. Frequency of each Draft PIMRC being cited as a Retention Reason in the 1<sup>st</sup> study

| <b>Draft PIMRCs</b>   | <b>Number of times cited as the Primary retention reason</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   | 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>                      |  |   |  |

*Findings from the second study (Job Documents digitisation)*

Of the 745 items dealt with in this study, 90 were retained in their original format. For each of these 90 items, one or more of the Draft PIMRC criteria were identified as being the reason for their retention. The number of times each Draft PIMRC was identified as being the reason for retaining an item is shown in Table 7. There were no instances in which an item was retained for a reason which did not appear in the Draft PIMRC.

TABLE 7. Frequency of each Draft PIMRC being cited as a Retention Reason in the 2<sup>nd</sup> study

| Draft PIMRCs  | Number of times cited as the Primary retention reason | % of times cited as the Primary retention reason | Number of times cited as a Secondary retention reason |
|---|---|--|---|
| 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 was cited for a particular item = 25 (28%)</b>                       |   |  |   |

This study confirmed the desirability of having a ‘digitise later’ criteria. When there are large numbers 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 criterion 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 retention reason (comprising 22 instances) was “Items published by an organisation or programme that the Owner works/worked for”. The majority of these items were glossy magazines – some internal magazines for staff, and some technical magazines marketing the organisation’s capabilities. 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 whether he would be satisfied to retain just a few examples rather than large numbers of them.

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 criterion 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 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 were 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 an Alvey Programme offer document with a tear-off strip on the bottom and measuring approximately 11cm longer than an ordinary A4 page. All 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 which have particular qualities of impact and integrity), as opposed to being just difficult

to digitise (as defined by criterion #10 - Physical features which make it difficult to digitise the item and/or to reconstruct it from the digital copy). The latter criterion was cited four times as the reason for retention – and for a diverse range of reasons: including a 1990 mailout, which included a 5 inch floppy disk, providing access to an online Bulletin Board and Database for Technology Information; 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 had two sliding cards which could 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.

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 criterion ‘Items illustrating a physical form due to a development in technology’ was selected once for a set of overhead slides. No changes were required for this criterion.

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

- #2 Items to be put to work in their original form
- #3 Items for which only the originals confirm their validity
- #12 Age that provides a quality of uniqueness
- #13 Copying explicitly prevented by copyright
- #16 Items relating to the legality of an institution
- #17 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 Table 6 also apply to the Updated PIMRC.

*Findings from the third study (Memento retain/destroy decision review)*

Of the 400 items included in the Memento collection, 109 were retained in their original format and assessed to establish which of the Updated PIMRCs 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 Table 8.

TABLE 8. Frequency of each Updated PIMRC being cited as a Retention Reason in the 3<sup>rd</sup> study

| Updated PIMRCs  | Number of times cited as the Primary retention reason | % of times cited as the Primary retention reason | Number of times cited as a Secondary retention reason |
|---|---|--|---|
| 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 was cited for a particular item = 36 (33%)</b>                     |   |  |   |

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 PIMRCs – 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 including 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 1970s.
- **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. Table 9 compares this result with the PIMRCs which received no Primary allocations in the previous two studies.

TABLE 9. PIMRCs which received no Primary allocations in particular studies

| Draft and Updated PIMRCs   | Where the PIMRC originated       | Nil Primary Allocations |           |           | Nil Secondary Allocations |           |           |
|--|----------------------------------|-------------------------|-----------|-----------|---------------------------|-----------|-----------|
|  |                                  | 1st study               | 2nd study | 3rd study | 1st study                 | 2nd 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#2                             | x                       |           |           |                           | x         |           |
| For use in exhibits  | IV#5                             | x                       |           | x         | x                         | x         |           |
| Item relating to the legality of an institution                          | IV#8                             | x                       | x         | x         | x                         | x         | x         |
| Executive Policy document  | IV#9                             |                         | x         | x         | x                         | x         | x         |

Based on the usage information in Table 9, the three criteria, 'Copying explicitly prevented by copyright', 'Item relating to the legality of an institution', and '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.

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 a potential candidate for adding 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, 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 down where they should go up 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 them with others. In the digital medium they would be locked away with hundreds of other items and probably never 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 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 also had a digital version and 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 PIMR:

- ‘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 Table 10.

TABLE 10. Frequency of each Adjusted PIMRC being cited as a Retention Reason in all studies

| Adjusted PIMRC  | % of times cited as the Primary retention reason |                       |                       |
|---|--|-----------------------|-----------------------|
|   | 1 <sup>st</sup> study                            | 2 <sup>nd</sup> study | 3 <sup>rd</sup> 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 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 was cited for a particular item in 1<sup>st</sup> study = 32%</b>      |  |                       |                       |
| <b>% of times more than one Adjusted PIMRC was cited for a particular item in 2<sup>nd</sup> study = 28%</b>      |  |                       |                       |
| <b>% of times more than one Adjusted PIMRC was cited for a particular item in 3<sup>rd</sup> study = 72%</b>      |  |                       |                       |

## Discussion

This paper sought to establish if the NARS criteria 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.

*Are the NARS Intrinsic Value criteria applicable within the PIM domain?*

The frequency that the IV criteria were cited as a retention reason across the three studies is summarised in Table 11.

TABLE 11. Frequency of each IV criterion being cited as a retention reason across the three studies

| IV Criteria   | Percentage of times cited as the <b>Primary</b> retention reason |                       |                       | Percentage of times cited as the <b>Secondary</b> retention reason<br>(note – multiple Secondaries may have been cited for one item) |                       |                       |
|---|--|-----------------------|-----------------------|--|-----------------------|-----------------------|
|   | 1 <sup>st</sup> study  | 2 <sup>nd</sup> study | 3 <sup>rd</sup> study | 1 <sup>st</sup> 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 criterion 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 criterion 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 criteria was cited for an item</b> |  |                       |                       | 2.6  | 1.1                   | 13.8                  |

Table 11 shows that the IV criteria 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 criteria. The figures also reveal that some of the individual criteria 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 criteria 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 criteria 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, 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 criteria 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.

*Do the NARS Intrinsic Value criteria 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 criteria to cover all the reasons for keeping originals that were encountered. As already noted, some of the IV criteria 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 Table 12:

TABLE 12. Language changes to IV criteria that are represented in the Adjusted PIMRC

| Original IV language   | Language in Adjusted PIMRC   | Reasons for language change  |
|--|--|--|
| <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 in the explanation of this criterion in the NARS document).</li> </ul> |
| <b>IV#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 in the explanation of this criterion in the NARS document).</li> </ul>   |
| <b>IV#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>IV#4:</b> Age that provides a quality of uniqueness   | <b>PIMRC#12:</b> Same language used  |  |
| <b>IV#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>IV#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>  |

| Original IV language   | Language in Adjusted PIMRC   | Reasons for language change  |
|--|--|--|
| <b>IV#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 criterion 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> |

As well as including some of the IV criteria in the Adjusted PIMRC, the following items were added:

- #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 did emerge in each of the three studies and the literature review identified several other reasons not included in the Adjusted PIMRC.

*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 Table 10 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 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 Table 13. 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.

TABLE 13. Analysis of whether the Reasons for Keeping Originals identified in the literature review were included in the Adjusted PIMRC

| <b>Reasons for keeping Originals identified in the literature review</b>   | <b>Equivalent Adjusted PIM Retention Criteria</b>  |
|--|--|
| RKO1 Rarity value  | No equivalent in Adjusted PIMRC  |
| RKO2 Monetary value  | No equivalent in 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 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 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 fulfil a sense of duty towards the family   | No equivalent in 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 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 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 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 defined 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 – see Table 10). 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 it's 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:

1. **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.
2. **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.
3. **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.

## Conclusions

This work has established that the NARS Intrinsic Value criteria 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 criteria 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 17 PIMRCs that emerged from this paper are unlikely to be definitive or complete, and consequently an 'Other' criteria was included to make up the set of 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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