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Principles for archival information services in the public domain

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In 2010, in response to the Australian Government's November 2009 apology to Forgotten Australians and former child migrants, a scoping study was undertaken by the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) to assess the options for a national 'Find and Connect' service to allow people to locate and access relevant records and have recourse to support services. The scoping study noted that Pathways, a web-based public knowledge space and a product of the Victorian 'Who Am I?' research project, was a community-based information resource without equal in the out-of-home care sector in Australia or indeed internationally. The scoping team made the observation that Pathways, due to its quality of content and coherent structure, appeared to be based on a set of principles and wondered what they were. In response the research team set about articulating the principles that underpinned their approach to archival documentation and the use of digital technologies – principles that had emerged through more than two decades of public domain, archive-focussed projects. This paper presents those ten principles and discusses them within the context of Pathways and the 'Who Am I?' project. The principles played a key role in FaCHSIA adopting Pathways as the model for the national Find and Connect database and web resource, launched on 15 November 2011. The principles underpin community knowledge building in the fourth or pluralised dimension of the Records Continuum. The paper ultimately argues that all stakeholders (all people and organisations connected with records) should have the ability to contribute to the utilisation of those records through the improvement of documentation and that some archival systems do have a duty of care to ensure they can inter-operate with community-generated knowledge.

Keywords: public knowledge spaces; archives; information services; community welfare; principles of practice; Records Continuum

Introduction

> The records definitely need explaining as there could be further damage if the person just receives them cold.[1]

This statement comes from a scoping study commissioned by the Australian Government's Department of Families, Housing, Community Services and Indigenous Affairs

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(FaHCSIA), in response to the Australian Government's November 2009 apology to Forgotten Australians and former child migrants. The purpose of the study was to assess the options for a national 'Find and Connect' service to allow people to locate and access relevant records and have recourse to counselling and support services. At issue was that the records, in isolation or out of context, could not be effectively understood. Explanatory devices and services were required, as Gavan McCarthy had noted a decade earlier, 'records, at whatever stage of their existence, are only meaningful if they exist in an accessible contextual framework'.[2]

The study, released in September 2010, identified the website, 'Pathways: Historical resources for out of home "care" in Victoria from 1840 to the present'[3] (referred to hereafter as Pathways) as the preferred model for a national, generally available, web-based information resource or public knowledge space.[4] Pathways was produced by the 'Who Am I?' project, with funding for three years under the Australian Research Council Linkage scheme.[5] In a multi-disciplinary melting pot, the project brought together academic social workers, historians and archivists at the University of Melbourne and the Australian Catholic University, along with Victorian community service organisations, government agencies and people who had been in 'care'. The strap line for the project – 'The archive as central to quality practice for current and past care leavers (Forgotten Australians)' – identified records and archives as a possible means of transcending barriers that tend to isolate the present from the past. Of particular interest were the barriers that prevented people, especially Forgotten Australians, from accessing and understanding information about their time in care.

The broad aims of Pathways were twofold. Firstly, to provide multiple avenues through which individuals might discover information about records relating to their time in care, and secondly to provide information that would help them understand those records. The 'Who Am I?' team had much experience in this area and believed that much of the contextual information necessary to discover and understand records was already in the public domain, but was neither systemically accessible nor utilised.

The scoping study team, at a meeting with the 'Who Am I?' project stakeholder advisory group (1 July 2010), made the observation that Pathways (launched late 2009), due to its quality of content and coherent structure, appeared to be based on a set of principles. In response to the request for a document outlining those principles, the research team set about putting into words what had become the accepted philosophical and pragmatic underpinnings of the work of eScholarship Research Centre (ESRC) at the University of Melbourne.[6] These could be described as a set of tenets that included:

- the application of the standards underpinning archival documentation;
- the adherence to the scholarly imperative (that is citation or evidence-based assertions);
- the sustainable management and preservation of records and data, with a focus on the challenges posed by digital forms; and,
- the resilient and reliable utilisation of information technologies.

Furthermore, the ESRC had been using the term 'public knowledge space'[7] for some time to distinguish its public web-based information resources from the transient and non-historical websites that dominate the Internet. Some of the key characteristics of the ESRC public knowledge spaces, including Pathways, were:

- the creation of structured, stable content that does not need to be changed to remain accurate;
- the presentation of knowledge from multiple perspectives, that allows more effective searching, browsing, navigation and pathways for discovery;
- the use of information-rich relationships, both internal and external, in place of basic hyperlinks;
- the association of each page to an evidence base; and,
- the use of simple, unique and persistent uniform resource identifiers (URIs).

This paper presents the resultant ten principles and discusses them within the context of Pathways and the 'Who Am I?' project. The principles, drawing on the goals and the tenets presented above, ultimately played a key role in FaHCSIA adopting Pathways as the model for the national Find and Connect database and web resource, launched by Minister Jenny Macklin on 15 November 2011.[8] In terms of archival science, Pathways and similar public knowledge spaces are examples of archival information services designed explicitly to work in the fourth or pluralised dimension of the Records Continuum.[9]

This paper briefly explores the services, challenges and opportunities Pathways offered to all with an interest in the provision of out-of-home care in Victoria. Before Pathways there were no coherent public information infrastructure services for this community. What was in the public domain was ad hoc and conformed to the constraints of print-based publication. The existing archival and records services were focused on meeting the internal requirements of their organisations and thus firmly placed in dimensions one, two and three of the Records Continuum. Any public facing archival information services sat on the boundary of the third dimension looking out to the citizenry but without providing the services required. The principles outlined below are offered to the community for discussion and to assist others wanting to provide public domain based archival information services utilising web technologies.

Pathways Victoria and its underlying ten principles

> You can use Pathways to find information, including documents and images, about: institutions, organisations that managed children's institutions, policies, public figures, and legislation. You will not find personal information or private records in Pathways. This website contains only information that is already published and/or in the public domain. However, Pathways can help you locate and get access to your own personal records which may be kept by government departments or past providers of 'care'.[10]

The first edition of Pathways was published within the first year of the 'Who Am I?' project. This was possible because the underlying system, the Online Heritage Resource Manager (OHRM),[11] was already mature. Although the OHRM's conceptual foundations date to the beginning of the Australian Science Archives Project in 1985,[12] formal development as a generic contextual information management system started in 1999. It has since enabled the web publication of numerous public knowledge resources including the *Australian Women's Register*,[13] the *Encyclopedia of Australian Science*[14] and the *Australian Dictionary of Biography Online*.[15] Bringing together the OHRM and the prior experience of the Pathways historians and archivists meant that work started on the content as soon as the funding became available.

The principles, although not explicitly articulated at the time, formed the experiential backdrop to the project – they were the truths that were taken to be self-evident, embedded in the informatics and programming code of the OHRM, the web publication practices and processes, and in the experience and skills of the project team.[16]

As presented to the Find and Connect scoping study, the principles took the following form. A public knowledge space, such as Pathways, should be:

1. Standards based
2. Evidential
3. Persistent and meaningful through time
4. Resilient
5. Available through multiple access and reference points
6. Geared towards person-to-person knowledge sharing
7. Structured to enable computer-to-computer data sharing
8. Public knowledge focused
9. Based on the science of networks
10. Coherent and purposeful in its interface design

The principles were published in a shortened form in the Find and Connect scoping study.[17]

Find and Connect design imperatives

The scoping study noted that it was important that the website design was

> based on sound principles which will stand the test of time and cater to the complexity of the content and search functions. The design needs to cater for:
>
> • the capacity for numerous internal cross-references between and within entries;
> • a very easy and intuitive user-interface for searching and navigating the site, despite the complexity of the underlying informational relationships. This includes clear navigational aides or pathways for moving around the site;
> • the capacity to readily add or change information in a way which automatically flows to all related references to the updated material;
> • consistent structure for entries of the same type so that details about, for example, accommodation facilities, are always in the same format and new items can be electronically added with a minimum of labour.[18]

Unpacking the principles

The following discussion presents the principles in relation to a generic information system that has the purpose of producing a web-based public knowledge space. Examples from Pathways have been used to highlight specific issues.

Principle 1. Standards based

A public knowledge space should be supported by a system that builds on and works with widely accepted standards within cultural, professional and technical domains, and which enables both the import and export of content in standardised forms that can be transformed to comply with the expectations and needs of the community both locally and globally. For example, the description of archival materials should conform with

International Council on Archives (ICA) standard ISAD(G): General International Standard Archival Description.[19] Similarly the description of context entities should conform to the ICA standard ISAAR(CPF): International Standard Archival Authority Record for Corporate Bodies, Persons, and Families.[20] Publications and digital objects should be documented to International Federation of Library Associations (IFLA) standards.[21] The documentation of relationships is more problematic as this field is still emerging but the principles underpinning the semantic web as promulgated by the World Wide Web Consortium (W3C) are a good starting point.[22] As a general rule of thumb the capability of the system should exceed the limitations of any particular standards. Standards, by their nature, lag both the social and technological drivers.[23]

However, while the general harmonisation with international standards is important, the ability to export and import data in the local environment is more immediately useful. The ability to export content, using standardised Open Archives Initiative – Protocol for Metadata Harvesting (OAI-PMH) services,[24] in Encoded Archival Context-Corporations, Persons and Families (EAC-CPF) XML form[25] for ingest by the National Library of Australia's Trove information discovery service,[26] is a good example of local inter-operability.

The OHRM was developed in parallel with and in response to the maturation of international standards for recordkeeping and for archival description. Gavan McCarthy and Joanne Evans tell the story of the development of the OHRM within the broader context of utilising 'archival authority records' to better meet the needs of the community. Their case study, the mapping of the socio-technical complexity of the history of Australian science, revealed some of the latent potential in this field.[27]

From an archival perspective, it was critical that Pathways worked within the context of Australian archival practice. Content and descriptive guidelines were drawn up that specifically addressed local needs for whole-of-collection descriptions, as well as the documentation of series of records within archives. These were developed within the framework of standards published by the Australian Society of Archivists Inc.[28]

In a technology-rich and complex environment the principle of being standards-based has implications beyond the metadata and informatic conventions of the cultural sector. One of the primary outputs of the system is a set of persistent and uniquely identified web pages. Of the range of technical web standards there are two that deserve to be mentioned. For the purposes of establishing the identity and publication status of a web page, each page should contain embedded Dublin Core metadata.[29] In Australia this should harmonise with the Australian Government Locator Service (AGLS).[30] Equity of accessibility is also an issue of community concern and a useful standard for meeting compliance is the W3C Web Content Accessibility Guidelines (WCAG) 2.0.[31]

Principle 2. Evidential

A public knowledge space should be an authoritative and reliable source of information about the key organisations, people, places, events, legislation and policies relevant to its subject matter and purpose. Assertions of fact should be supported by evidence and appropriate citations made to the relevant sources. Content should be developed using defined research methods and supporting infrastructure based on the principles of a scholarly imperative[32] that recognises, respects and builds on the work of others.[33]

For Pathways, its subject matter was the history of child welfare in Victoria and its purpose was to make this information available primarily to those that had been in care at some point in their childhood. Content and assertions in Pathways can be explored

further, verified, disputed and otherwise contributed to by users by following the links to the supporting evidence and utilising the web-based feedback forms. From an informatic perspective the unique registration of evidential sources (publications, archival materials or specific digital objects) and the linking of these sources to all related entities not only makes sense in terms of efficiency but enables relationships between context entities to be triangulated, thus extending the open network structure of the resource as a whole.

Principle 3. Persistent and meaningful through time

A public knowledge space should be designed to persist and retain its meaning through time. Pathways was driven by the need to document key information about people, organisations and events in the history of child welfare in Victoria, in a way that can be understood now and meets the needs of the Forgotten Australian community. However, writing solely for the present, in the present tense, does not ensure persistence of meaning.

The statements in Pathways are written, as far as possible, in language that will retain meaning through time. For example, rather than writing 'The Broadmeadows Family Centre is based in Glenroy', Pathways states: 'In 1974, the Broadmeadows Family Centre was established in Glenroy at the former site of St Agnes' Girls' Home.' Other simple rules state that abbreviations should be studiously avoided, and doubtful assertions should be documented in transparent fashion.

It is a non-trivial task to negotiate the nuance and inflection of historic language and find a means of communicating clearly with future readers. The Pathways team strived for disambiguation of the language in the resource, as explained on the site's 'About' page:

> In Pathways, we have strived to use inclusive and non-derogatory language. We know there is no single term that is able to describe the wide and varied experiences … In most cases, we have fallen back on the terms 'care leavers', or 'people who were in "care" as children'. Where we are describing experiences specific to Indigenous people, we use the term 'members of the Stolen Generations' … Sometimes, we have reproduced the original language from our historical sources … such sources sometimes use language to describe people in derogatory and offensive ways that are totally unacceptable today. We use such terms in order to demonstrate the language (and thus, the thinking) of the time … we apologise for any offence or distress reading such language might cause … Pathways contains a Glossary, where we go into more detail about common terms and concepts in this field, and try to put them into context.[34]

Persistence also involves technology, systems, modes of publication and governance. A public knowledge space should be able to exist for as long as the community deems it worthwhile and is willing to support it. For Pathways, and for most public knowledge spaces, there is no foreseeable endpoint. Consequently, exit and migration strategies for structured and unstructured content, based on public standards, should be built into the system from the beginning.

Principle 4. Resilient

A public knowledge space should be constructed and managed so that it can withstand sudden changes in any aspect of its environment. At the technology level, server failures (hardware faults, software glitches, accidental power outages) can sometimes lead to damages which make recovery impossible. All OHRM websites (including Path-

ways) locate the authority database and the web publication and other outputs on physically separate servers, both of which are mirrored and backed up. The separation of structured content and associated programming code from dissemination outputs has enabled OHRM-based public knowledge spaces to successfully traverse over eighteen years of technology change.

In terms of the informatics, the utilisation of open network structures (rather than closed hierarchies), means the system can be both extensible and responsive to change without compromising existing data. The idea of resilience can be applied here in the same way as when used to describe the responsiveness of ecosystems.[35]

At the management and governance level, long-term strategic thinking is essential. Beyond current circumstances, management and governance plans should, at least in the broad sense, deal with inevitable political and administrative change. A simple example is the choice of domain name for a public knowledge space. A domain name independent of organisation (for example, .info) poses fewer problems of persistence than one with organisational dependencies.

The technology used to create Pathways supports the fundamental principle of freely sharing information in the public domain. It is vital that the system be a non-proprietary, open source technology, designed to keep up with and adapt to new ways of using and sharing data as they emerge. The use of non-proprietary, standardised technologies such as relational or SQL databases and XML – and the avoidance of proprietary products and formats – is a necessary component for long-term sustainability.

Principle 5. Available through multiple access and reference points

A public knowledge space should be discoverable in many ways. Perhaps the easiest way to achieve this objective is to publish on the web in such a way that major search engines can index all relevant content.[36] Beyond this, the results of indexing sessions should produce predictable and consistent results. In producing its web output Pathways constructs a network of information objects each with a unique identifier. In some disciplines these are known as 'first class objects'. Each entity or web page in Pathways is represented with a unique and persistent uniform resource locator (URL), and thus becomes a potential point of discovery, a means of access and a reference or citation point. Within Pathways there are also persistent defined relationships that connect the entities. These relationships are supported by the evidentiary sources but selected and defined so as to serve the overall purpose. Building on this principle other sustainable application interfaces could be developed for other web services (such as visualisation, data mining, or text analysis) to enhance utility.

Principle 6. Geared towards person-to-person knowledge sharing

A public knowledge space should first and foremost be geared to communicate with people and enable them to navigate through the network to find the information they desire.[37] Pathways was built using research processes and methodologies that harnessed human knowledge and wisdom to make that knowledge available to a much wider audience than had been possible in the print and paper worlds.

The primary goal of the system must be to communicate directly with all who have an interest. To achieve this the purpose of the project driving the system should be clearly thought through and articulated. However, project managers also need to ensure that very specific project needs do not override adherence to the standards and deeper

informatic structures that underpin resilience and sustainability. The Pathways web interface builds on a model of person-to-person knowledge sharing on the web. Individuals can cite specific information within Pathways with confidence (for example, they can copy and paste a URL to an entity page into an email, add it to a bibliography, refer to it in a blog, or mention it on Twitter or Facebook).

Principle 7. Structured to enable computer-to-computer data sharing

A public knowledge space should be able to provide information or data for use by other computer-based systems. This is an axiom of the Linked Data community[38] and underpins the development of semantic web applications, focussed on a particular technology, namely URIs and the Resource Description Framework (RDF). However, as there are other methods that can be utilised to transfer data between systems, it is important not to restrict import and export capability to one technology.

Pathways was created using information that had been structured to facilitate data sharing with other public knowledge spaces, in particular the National Library of Australia's Trove information discovery service utilising Encoded Archival Context XML.[39] Other OHRM projects have exported data in other XML forms including RDF. As more web information services develop this capability, further interconnections will become possible. Also, each web page in Pathways has embedded Dublin Core metadata which is compliant with the AGLS metadata standard developed by the National Archives of Australia. This computer readable data can be used to establish the identity and version of each page – an important consideration as the pages evolve over time.

Principle 8. Public knowledge focused

A public knowledge system should only contain information that is either already in the public domain or is intended for the public domain, although it is acknowledged that the concept of the public domain has a range of meanings depending on context and jurisdiction.[40] Pathways only contained information about resources that were publicly known, including publications, archival collections, photographs, newspaper articles, museum objects, legislation, and submissions to government inquiries. Importantly, Pathways pointed to the archival collections of public and non-government agencies where records of vital importance to the community were held. Also, the collection descriptions on Pathways were created for public consumption. Restricting content to information that is already in the public domain, or information that stakeholders wish to be in the public domain, substantially reduces the concerns surrounding privacy, moral rights and other intellectual property rights.

Principle 9. Based on the science of networks

The builders of public knowledge spaces should have a suitable understanding of the science of networks. For many archivists this may seem daunting but useful introductory texts written for the layperson provide a good starting point. In particular, it is worth tracking down the work of Mark Buchanan on the small world effect[41] and Albert-László Barabási on networks.[42]

In the print-based world, people's lives, the history of organisations, and series of events, are often presented as narratives. This can be extremely valuable, but narrative

is necessarily constrained by the need to present a single linear progression of events and ideas. Alternatively, encyclopaedias, guides and dictionaries (print-based or online) break knowledge into descriptions of individual people, places, concepts and moments in time. These too are relatively linear, relying on fixed hierarchical structures.

There are, however, many intersections between ideas, concepts and entities embedded within these texts, as there are in the world. The intention of information services such as Pathways is to draw out and 'hard code' these embedded intersections as defined, information-rich relationships, allowing users to navigate the complexity of what actually occurred and what had been recorded.[43]

Such open network systems are capable, within reason, of representing the complexity of society, and presenting it in a way that is clear and meaningful, creating opportunities for new discoveries and further knowledge. It is not a question of network methodologies replacing narrative-based forms but entangling the two to enable any and all stories to be told as needed.

Principle 10. Coherent in its interface design

A public knowledge space should have an interface that is effective for its target audience but it should also be extensible and have an air of timelessness. The ESRC had evolved a standardised interface design process that had been implemented on all OHRM projects to the extent that each budget allowed. Essentially the process involved an external design consultant taking the stakeholder group through a series of exercises to ensure that the purpose and target audience were clearly defined. The next step involved mock-up designs that worked within the structural constraints determined by the other public knowledge space principles, especially the accessibility requirements, and the capabilities of the underlying technology at the time. However, this was always just the beginning as both formal and informal useability testing and evaluation was undertaken following the launch into the public domain. The 'Who Am I?' project was able to take Pathways right through this process, including two years useability evaluation of the live site. The Find and Connect design imperatives, mentioned earlier, describe what Pathways had achieved and set the benchmark for the Find and Connect web resource.

Discussion

At the very start of the 'Who Am I?' project, the community service organisations acknowledged, in a forthright and honest manner, that they had significant difficulties in developing and sustaining effective archival programs that met the needs of their clients, in particular, the Forgotten Australians. To help this community develop a shared understanding of the complex underlying issues relating to archives and records, the concept of a continuum (that is a web of contiguous connections through time) was introduced and aligned with two records-related 'stories'. Firstly, there was the story in the records: what they are about, the events they document and the information about the people and organisations who were party to those events. Secondly, and this was not generally understood, there was the story of the records: who created them, why they were created, how they were created, how they were stored, how they were documented and who looked after them over time.

The Records Continuum[44] was introduced more formally by the archivists of the 'Who Am I?' project as a means for analysing and decoding what was being observed

in both public and private organisations in relation to their management of archives and records. The social workers and historians recognised that the Records Continuum model also supported the imagining of practical interventions that might bring about effective change, not just in archival practice and services but also in how frontline workers created records in the first instance. Later in the project it became the framework for evaluating those interventions, in particular Pathways and the underlying principles.

At issue were the rights of individuals, who as children were the subjects of records while in the care of the state or private organisations. As adults many of these individuals attempted to access records about their time in care only to be thwarted by access regimes ill suited for the purpose or by a lack of explanatory information that could help them interpret what was found.

As McCarthy had noted more than a decade earlier, fundamental principles have to be re-stated in terms that are not dependent on past or current practices. The aim would be 'to find statements of principles that will travel through time and through space. We must strive for a new level of international and cross cultural understanding and interoperability'.[45]

The principles can be understood as an articulation of duty of care in archival description and set a benchmark for archival information services in the public domain. It is in these spaces that the larger stakeholder community can contribute to dealing with the failings and inadequacies of the past. Co-creation of the record and its documentation crosses all dimensions. Many Forgotten Australians are happy to participate in this process so others do not experience what they experienced. They are happy to put their story in the public domain as an intervention to bring about improvement.

Through Pathways, the 'Who Am I?' project examined the proposition that all stakeholders (all people and organisations connected with records) should have the ability to contribute to the utilisation of those records through the improvement of documentation. Also under examination was the related assertion that agencies with archival systems have a duty of care to ensure they can inter-operate with community-generated knowledge.

Accountability is the modern mantra of many a twenty-first-century recordkeeping professional. Our standards of professional practice focus on the need for records to be created and kept, and for those of continuing value to come under archival control so that they can be made available and accessible. Yet how often do we turn the accountability lens onto our own archival systems? When we do, how do we judge whether they are meeting our operational, legal and social obligations? While we contend and critique appraisal theories and practices, we seem content to not pass the same critical eye over how and what we do with description and how this affects individuals.

From the time of their creation, records can form part of 'collective memory',[46] which creates powerful opportunities for the sharing and analysis of information, but also creates challenges. Documents which are available today on the Internet might not exist in the future as governments or private business produce new documents and try to construct and change their history in a favourable way. Maintaining online resources so that they are 'accessible and retrievable'[47] in the long term is vital in order to create an enduring understanding of events and their context. While this is a major concern for contemporary archivists,[48] at the same time, it provides a valuable source for research and decision making.

Conclusions

Prime Minister Kevin Rudd stated:

> As a nation, we must now reflect on those who did not receive proper care.[49]

The story of Pathways highlights the way the community can build a fourth dimension layer of documentation and mediation that can start to explain and remediate the inadequacies of past and present records and archives practice. It is proposed that the duty of care sits with all of us. But in particular, archives and archivists must build their systems so that society more generally can meet its responsibilities – if they do not then it could be argued that they are being negligent and not fulfilling their 'duty of care'.

Publicly and independently set up knowledge spaces, which allow accessibility to the evidence produced in the past, are a valuable resource in a world where the ability to disseminate and curate information has been opened to the citizenry.[50] Such public knowledge activity needs strong (public) partners to ensure that such knowledge remains available. *WikiLeaks* and other developments indicate the growing desire and need for high quality information and resources to bring transparency to public policy and decision making in our societies. This aligns strongly with the focus of archivists in Australia in the late twentieth century on the accountability of government and corporations more generally.

The application of archival principles, of evidence-based documentation and the use of archive informatics provides a means by which researchers and the community more generally can contribute to the work of archivists. By creating public knowledge spaces which contain broad contextual mappings not only will archivists have a major new tool in their records documentation armoury[51] but they will be more directly engaged with the community they serve.

For archivists, the Records Continuum[52] is a persuasive model and provides a means for understanding challenges to archives and records practices. It also provides a useful means by which the practical and conceptual underpinnings of recordkeeping can be explained to those in other fields. Sue McKemmish observes that in terms of the Records Continuum, 'the role of recordkeeping professionals relates to setting up recordkeeping regimes that can ensure that *from their creation*, records are managed in ways that enable them to fulfil their multiple purposes contemporaneously *and* over time'.[53]

Endnotes

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