

**THE DELETE GENERATION
CITIZEN-CREATED CONTENT, DIGITAL EQUITY AND THE PRESERVATION OF
COMMUNITY MEMORY
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Abstract: A quiet, web-roots-led, revolution is challenging the way librarians have traditionally viewed the protection and preservation of knowledge. While the complex issues concerning the protection and preservation of digital assets are better understood by the information professions, there is still much thinking required about the preservation and protection of the new wave of citizen-created content.

Traditionally information professionals in all types of memory institutions have clearly met the need for and nature of the preservation activities around formal and authoritative knowledge services and systems. However informal, citizen-created, knowledge activities are far less straightforward in terms of preservation. These activities arise and evolve as individual citizens develop as authors, content creators, thought leaders, film-makers, blog diarists, etc. There is at present an extraordinary unleashing of content creation by individual citizens.

This development challenges established organisational systems and professional practice in an unprecedented way. This paper outlines some of the issues involved in the preservation of digital assets in this environment. It explores how all memory institutions including archives, galleries, museums and libraries in particular, can value and protect a country's digital assets in both formal and informal arenas.

This paper explores the challenges and unlimited potential of Web 2.0, in reshaping thinking about what digital assets to collect and protect over time.

Introduction

It is a great pleasure to address you today in my second public lecture to mark the renewal of my term as Adjunct Professor to the [School of Information Management](#) and Victoria University of Wellington more generally in selecting the topic for today.

This is redefining for Librarians and Information Specialists internationally. I will talk to you today about the unacceptable loss of ideas, thought and memory in the digital domain. I will also talk about the age of information democracy where the established order of authoritative, trusted knowledge systems is being challenged by a new order of citizen-created content. In this paper I raise questions and provide some answers.

Please see this as a work in progress. I intend to work closely with colleagues in the School of Information Management during the next six months in preparation for a more defining paper at the [International Federation of Library Associations and Institutions](#) (IFLA) in Milan later this year.

The Delete Generation

We are all part of the “delete generation”. Every second of every minute of every day New Zealanders are deleting their history, their thoughts and arguments, which these days are invariably presented in a digital environment. Our understanding of the impact of this kind of loss has not really matured. It may take a generation to actually understand what this means for the transmission of ideas and information over time. Do we yet understand what we are losing and does it matter? What is the economic, social and cultural impact of this loss of data?

We have terms such as the ‘[Digital dark ages](#)’¹ or ‘[digital amnesia](#)’² or more recently ‘[digital landfill](#)’³ to jolt our consciousness into appreciating the urgency of the situation. So what do we do about it? All of us will have deleted valued information, often unintentionally. What are the professional challenges for librarianship? For centuries we have catalogued, indexed, described, and managed information in an ordered and predictable way so that it is protected and preserved for future generations to explore and enjoy. We also do this so it may be accessed and used to build new knowledge and understanding, as well as help us understand our past or to better understand the present. How uncomplicated and predictable the analogue, print and tangible world now seems!

The digital world has changed all of that and there is now a further layer of complexity to traverse as well. It is not only the sheer quantity of digital content which is being created but there is a changing order in terms of who is the writer, the artist, researcher, film-maker of the 21st century. The world of Web 2.0 (and 3.0, 4.0 and 5.0)⁴ is turning established, authoritative knowledge systems upside down.

There is a new equity emerging where individual citizens are using social networking sites like [Youtube](#), [Facebook](#), blogs and wikis to broadcast their ideas, views or news in a much more immediate way. Established ways of communication are being challenged. In the Web 2.0 environment an individual citizen is more likely than established news feeds to first transmit news of a cyclone devastating New Orleans or a bombing of the London underground. Do we judge the citizen-created content in a harsher way just because it appears to lack the customary formality of what we have grown used to?

In our throwaway society, are we making judgements about what is good content (and therefore worth keeping) and what is transitory, of little regard? What did we do in the analogue world? If something was published, did we not consider it worth keeping? If something was unpublished; a letter, manuscript or document of some description, did we not make a judgement in the same way to keep it, either because we hold the author or creator in some regard or because it depicted something which we thought was useful? As you will note I am posing a great many questions without giving any immediate answers. In the ‘delete generation’ in which we live there is no map; there are no easy answers as we struggle to understand that this is a social revolution and that the power of communication is spreading from the one to the many; from established authority to citizens’ empowerment, even anarchy at times.

¹ Term introduced in 1998 at the *Time and Bits* Conference
<http://www.longnow.org/projects/conferences/time-and-bits/>

² Penny Carnaby, ‘E-Learning and digital library futures in New Zealand’, *Library Review*, 54, 6, 2005, p. 353.

³ Hon Dr Richard Worth, Minister Responsible for the National Library.

⁴ Ajit Kambil, ‘What is your Web 5.0 strategy?’, *Journal of Business Strategy*, 29, 6, 2008, pp. 57 & 58.

Preservation and protection in the digital world

There is an emerging equity that needs to be understood and which enables all of us to potentially be a writer, creator, or film-maker. While the literature on community/citizen created content is clear about the worth of this content and the need to readily access and share it⁵, there is a deafening silence about the need to protect and preserve citizen-created content. This is so that we can harness the ideas of 21st century creativity and inspiration for future generations to understand, and draw new learnings.

To be fair we do not yet have a satisfactory answer to the preservation and protection of digital content from formal and authoritative knowledge systems. And it is not that we are signalling that citizen-created content is less valuable or significant; it is a complex intellectual problem to preserve and curate digital objects over time and in a way that ensures we can trust the authenticity of the original.

The loss of part of our digital memory, our data and information is of course completely unacceptable and it is redefining the thinking of the 2nd oldest profession - librarianship. Have we not managed information through the ages? Have we not protected and preserved knowledge so that there will be access and therefore creation of new knowledge? So what is different in the digital environment? What are the professional challenges for us as we seek to press 'save' (in perpetuity) as an alternative to delete?

We must shift our focus to what can be done to arrest this unacceptable loss of data rather than dwelling on the complexities of doing it. Here in New Zealand it may be that the 'number eight wire' mentality, that 'can do' Kiwi spirit, might well just mean that we will make an international contribution to this emerging field.

Last year I was struck by some feedback from an international symposium in Paris where the term 'digital curation' was becoming the preferred term for digital preservation. Clearly, this space is so new that even new descriptors are being invented. The symposium had been discussing the very complex issue of preserving digital objects ensuring that the researcher or seeker of the future could trust the authenticity and the reliability of the digital object to be exactly the same in 10, 50 or 100 years from when it was originally created. The research community here will understand the need to ensure the integrity of the original.

What was encouraging from a New Zealand perspective, when the [National Library of New Zealand](#) was about to present its paper, was the introduction by an academic who said something along these lines: "ladies and gentlemen we have just spent three days listening to the difficulty of this and the complexity of the issues, now for something a little different, we will hear from a team from New Zealand that is actually doing something about it. I suggest we listen carefully."

⁵ Peggy Anne Salz, 'Power to the people: do it yourself content distribution', *EContent*, 28, 6, 2005, p. 36.

Wan Wee Pin, 'Library 2.0: The New E-World Order', *Public Library Quarterly*, 27, 3, 2008, p.245.

Gobinda Chowdhury, Alan Poulter, David McMenemy, 'Public Library 2.0: Towards a new mission for public libraries as a "network of community knowledge"', *Online Information Review*, 30, 4, 2006, p. 456.

So what are we doing in New Zealand to arrest the loss of our digital heritage? Much of the NLNZ activity in this field is well known. To summarise briefly, the new [National Library of NZ Act](#) in 2003 made New Zealand one of the first countries internationally to legislate for the requirement of bringing legal deposit into an electronic or digital domain. This gave the National Library the mandate to collect and preserve New Zealand born-digital publications and all activity in New Zealand – blogs, wikis, anything publicly accessible on the web. In 2004 the New Zealand Government supported a \$24 million project to build a trusted, curated digital repository for the long-term protection and preservation of New Zealand's digital assets.

National Digital Heritage Archive (NDHA)

In February 2009 the Minister Responsible for the National Library, [Hon. Dr Richard Worth](#) launched the [National Digital Heritage Archive \(NDHA\)](#) the first fully contained commercial solution to the protection and preservation of digital heritage.

This solution was developed in partnership with [Ex Libris](#) and [Sun Microsystems](#) who were our software and hardware partners. Sun Microsystems has recently published a white paper - [Case Study: Digital Preservation at the National Library of New Zealand: Preservation: A Forward-Looking Mission](#) - on the information architecture reference site using the NDHA. The digital preservation system is marketed as [Rosetta](#) by Ex Libris.

It was very important from the outset that we also involved both the international and New Zealand stakeholders in how we ultimately shaped the NDHA. This included the Peer Review Group whose mandate was to guide the partnership and the resulting creation of a commercially viable solution, and included highly respected institutions such as the British Library, Cornell University Library, the Getty Research Institute, National Library of China and Yale University to name a few.

The NDHA is highly intuitive; essentially the Archive is warned when something is going out of date, and integrates the tools and services required to migrate from one generation to the next, thus ensuring that a digital object created in 2008 - perhaps a born-digital cartoon from one of our eminent cartoonists - will be exactly the same in 50 years time. This is a real breakthrough.

New Zealand Digital Content Strategy

The NDHA project needs to be seen in a broader context than the preservation of heritage material. First, New Zealand was a significant contributor to the [World Summit on the Information Society](#) (WSIS). New Zealand was successful in getting the principles of freedom of access to information enshrined in their (WSIS) [principles](#) of 2003.⁶

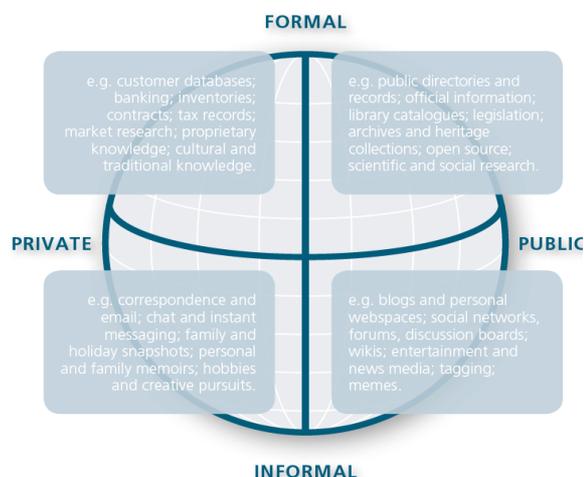


Figure 1: Digital Content Strategy – The Digital Space - page 12

In September 2007 the New Zealand Government launched the [New Zealand Digital Content Strategy \(NZDCS\)](#). The NZDCS is significant in that it does not discriminate between digital content created in the authoritative formal space and content which is community generated by an individual or group of citizens. Additionally, it provides a whole of government and strategic view of digital content that “is about making New Zealand visible and relevant in a connected digital world, ensuring we are innovative, informed and capable as a nation in creating our digital future and telling our stories to each other and the world.”⁶

The Strategy took an equitable approach to all aspects of how content is generated and in doing so valued citizen-generated content in a Web 2.0 environment alongside authentic, formal content. Another aspect of the Strategy which is worth noting is the end-to-end view it takes of a digital object, from creation through to discovery and access through to protection and preservation of that asset.

⁶ ‘Creating A Digital New Zealand: New Zealand’s Digital Content Strategy’, Wellington: National Library of New Zealand, August 2007, p. 5.



Figure 2: Digital Content Strategy – Five-Element Framework - page 7

This model traverses new ground in that it puts an equal weighting on creation (of the idea) through to protection and preservation (looking after the idea). The Strategy implies that new investment is needed, not only in the generation of new content, but also in the preservation of the digital asset. This is done for social, economic and cultural reasons so we can look back on New Zealand society in 50 or 100 years time and understand more about New Zealand intellectual and social activity on the web in 2009. Additionally, given the current global economic crisis it simply does not make sense to invest in content creation while failing to protect or preserve this content so it can be reused, repurposed for new research, thought generation or business opportunities.

It is important to realise that the economic argument for protection and preservation of digital assets is just as compelling as the better understood social and cultural reasons for doing so. After all, if New Zealand is to build economic growth, we have an obligation to ensure that our innovators, entrepreneurs and creatives have access to premium New Zealand content.

In the formal, authoritative arena of content creation there is good progress internationally, particularly in relation to research data. There is a great deal of research being applied to the re-use and re-purposing of research data sets. Arguably research funding could stretch much further if data could be re-used to support new research.

In New Zealand the [Education Sector ICCT Standing Committee](#) was established in September 2003 to drive and oversee a more collaborative and joined up approach to education and research sectors in New Zealand. The Committee comprises Chief Executives across a wide range of Government agencies including the National Library.

One of the priorities for the Standing Committee has been to develop an ICT Strategic Framework for Education focused on ICT investment. The intention is to build ICT interoperability and we have worked closely with colleagues in the [Joint Information Systems Committee](#) (JISC) in the UK; [SURF](#) in Holland and the [Department of Education, Employment and Workplace Relations](#) in Australia on sharing standards and interoperability frameworks.

We also share interests in, for example, the areas of repositories and digital rights, and managing research data (including open access), data curation and data re-use. Data curation is central to the NDHA which will be leveraged from the framework more locally by the State Services Commission which is looking to manage and protect data in a more joined up way.

The point I am making here is that, in New Zealand, where we have been discussing how to avoid loss of research data for some years, we now have the tools and a real opportunity to do something about it. Importantly, for librarians and information scientists, the skills being applied to solve this problem are quintessential information management skills; for example, in preservation terms a digital object is just that, with little discrimination as to whether it is a research, data moving image, or a citizen-created digit.

What the profession had not predicted was the degree of disruption to the established modes of scholarly communication. David Lewis⁷ observes that a new equity is emerging in terms of knowledge. What is undeniable is that “the wide application of digital technologies to scholarly communications has disrupted the model of academic library service that has been in place for the past century”, creating opportunities “for new forms of research and scholarship”,⁸ which will require new forms of infrastructure to ensure the availability of digital content.⁹

The “publish or perish” imperative for scholars in the print world, to a degree, still underpins the focus of scholarly communication. However where we publish and how we publish are very different indeed. Here in New Zealand the National Library offers a metadata harvesting service through the [Kiwi Research Information Service](#) (KRIS), which will harvest metadata across research repositories in all New Zealand’s universities and Crown entities and some polytechnics.

While this is a satisfactory way of ensuring New Zealand’s publicly-funded research outcomes are publicly accessible, it is not at this stage a protection from loss. While scholars still publish in recognised scholarly hard-copy and e-journals, open-access research repositories are rapidly gaining ground right around the world.

While the National Digital Heritage Archive could inject New Zealand’s publicly-funded research output into the Archive, it is not completely straightforward and I am unsure at this stage whether it comes under the provisions of e-legal deposit which I referred to earlier, nor have the universities asked us to do this. Perhaps this could be a first?

While there are emerging solutions in the formal authoritative space internationally, particularly in relation to research outputs, it is not completely straightforward in terms of IP. Digital curation is expensive and some of the latest thinking suggests that we may only have one or possibly two data stores in the future for the whole of New Zealand. We need new policy to decide now what is ingested and kept and what is deleted.

⁷ David W. Lewis, 'A strategy for academic libraries in the first quarter of the 21st century', *College & Research Libraries*, 68, 5, 2007, p. 418.

⁸ Ronald L. Larsen, 'On the threshold of cyberscholarship', *JEP: The Journal of Electronic Publishing*, 11, 1, 2008 - <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;cc=jep;q1=3336451.0011.1%2A;rgn=main;view=text;idno=3336451.0011.102>

⁹ Ronald L. Larsen, 'On the threshold of cyberscholarship', *JEP: The Journal of Electronic Publishing*, 11, 1, 2008 - <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;cc=jep;q1=3336451.0011.1%2A;rgn=main;view=text;idno=3336451.0011.102>

So while we can theoretically preserve data in New Zealand right now, it is by no means clear whether we will do it. The less resolved and arguably equally important space is how we manage citizen content in terms of long-term curation and protection. The loss in terms of our social history (for example, community stories) is no less significant than loss of authoritative knowledge systems, however our understanding of what to do is much less well understood. The delete generation is running rife in this Web 2.0 environment of citizen-created content and as well, in addition to this, it is challenging the way librarians have delivered information services.

Wan Wee Pin, manager of the Strategic Planning Office of the National Library of Singapore argues that “libraries must stop trying to change the (content creation) behaviour of their users. Libraries must give up control and allow engagement and sharing of information, rather than just being the providers of information.”¹⁰

The professional shift from information disseminator to collaborator is significant and challenges much of our established thinking in terms of services.

The really thought-provoking question in the informal knowledge systems sector is what content should we protect and preserve over time? We know the loss of something as simple as email activity may mean that over time we lose our understanding of human discourse and how we communicated with each other early in the 21st century. Many thoughts and ideas are simply deleted. This is exacerbated by the web 2.0 explosion of citizen created content. It is a wonderful unleashing of human creativity but what should and could we collect over time? What should we inject into New Zealand’s heritage archive and what are the technical issues which need to be resolved?

However, we shouldn’t be too hard on ourselves. We’ve made some good progress in addressing community-created content and some of the issues I have already raised. The following are two examples, Kete Horowhenua and Creative Commons Aotearoa, which I’d like to touch on.

Kete Horowhenua

A great example of a community repository is *Kete Horowhenua* horowhenua.kete.net.nz which a rich story of grassroots content, spontaneous content, collected by the communities within the Horowhenua. Kete Horowhenua has had an extraordinary journey - and is not only a strong example of how community and marae based repositories can work together and connect in the digital world, but also how they can be leveraged from, and be applicable to, every community around the country.

Creative Commons Aotearoa New Zealand

At another level, we have also addressed the protection issue through the international creative commons licences. Late last year, New Zealand launched its own [version](#) of these licences which give our commercial content creators and artists, authors, educators and researchers access to Kiwi-based free copyright licences which are accessible on line. It is a great step in freeing up access to content but protecting it as well. These New Zealand licences, drafted by an expert legal team, are available for use now.

¹⁰ Wan Wee Pin, 'Library 2.0: The New E-World Order', *Public Library Quarterly*, 27, 3, 2008, p. 245.

You might ask what is the relevance of these licences - for us the legitimacy of informal content - the citizens created content - is important. I recall when we initially brainstormed our digital content approach and brought together a great group of web experts into one room - and these people really pushed our thinking to include informal content, citizens created content. For example, the social network revolution we're seeing started to take hold with wikis, blogs, Flickr etc - they're all relevant and are really starting to impact on what I'd call mainstream content.

So the Creative Commons licences are really about protecting and looking after content - where a citizen can assert some rights around their content but also state who they will allow to use it, and how. This is, I know, of particular interest to iwi in the management of their intellectual property rights, alongside material relevant to iwi held in public institutions or in the public domain and we are now working with the international communities to see if an indigenous Creative Commons licence is warranted. New Zealand is leading the thinking in this domain.

Summary

Perhaps I am taking an overly optimistic view about our ability to protect user generated content in New Zealand. If we look at what we can do then the NDHA is a crucial part of the preservation puzzle. Theoretically, with the right presentation of metadata, community content could be injected into the Heritage Archive relatively easily. We do however need an interoperable standards-compliant environment and a robust policy framework to achieve this.

As an outcome of the New Zealand Digital Strategy 2.0 2008, new money was made available to develop a joined-up framework for open source community repositories in New Zealand. The first intervention was the need to lift the ability of communities to create content to contribute to community memory projects. The [Aotearoa People's Network](#), launched in 2007, is a strategy for getting broadband and internet into communities, particularly in rural and provincial New Zealand. The APN is run through local public libraries and it has been a real delight to see how minimal improvement to broadband capability has seen an extraordinary outpouring of community creativity.

Drawing from the very successful [kete](#) community repository project led by the Horowhenua Library Trust, open-source, open-standard community repositories are emerging all around the country. With the originators' permission through [Creative Commons Licences](#) the National Library continues harvesting metadata and ingesting digital objects into the Heritage Archive, thus ensuring some protection from losing this precious and unique story of New Zealand told from a community perspective.

Now the discerning ones of you in the audience will be thinking that the protection and preservation of community memory may be fraught with fishhooks and you would be right - it feeds nicely into my initial questions about deciding what we should keep? What will the .NZ domain define as special or important? And what are the conditions, standards and policy frameworks needed to harvest and protect New Zealand's informal knowledge systems in the future?

This leads me into some concluding comments about the professional challenges facing those preparing library and information professionals for the knowledge-led world of the 21st century. Are we preparing professionals to address the issues surrounding unacceptable loss of data, memory ideas and creativity? Are we preparing the new generation of professionals to understand the information management issues of the delete generation that they are themselves part of? Some of the issues we need to think about are strangely comforting for those of us who have spent our whole professional lives ensuring the free flow of information in our society. Structuring and understanding the digital is conceptually similar to the analog and print world most of us have grown up in.

Here I also draw from some of the thoughts of Steve Knight, the intellectual leader of the NDHA project and highly regarded internationally for his thought leadership in the preservation and curation of digital objects over time. From his perspective this is not primarily a technical problem but more one of how we re-engineer our current processes to accommodate the complexities of citizen-created content including asking some very important questions:

- What citizen-created content would most enrich our existing metadata?
- What do we need to know to assist users in determining the benefit, value, authenticity, integrity of citizen-created content? (source, authorship, affiliation, type of contribution, language, context...?)
- How do we make citizen-created content searchable in a seamless manner with other metadata content?
- How do we manage citizen-created content vocabularies (folksonomies) in the context of our usual taxonomies?
- Are there privacy issues for citizen-created content?
- Are there data ownership issues for citizen-created content?
- Does citizen-created content require editorial review?
- Are there legal or liability issues related to citizen-created content?

In summary I have taken a high level view of the unprecedented loss of New Zealand digital content both in the formal and authoritative knowledge systems as well as emerging user-generated content in a Web 2.0 environment. Early steps to address this loss have been described, focussing on the leadership role New Zealand currently plays in digital curation internationally, and particularly in relation to born digital publishing research data sets and web harvesting.

In the informal world of user-generated content, standards-based community repositories are emerging through a network of the Public Libraries in New Zealand, giving us the potential of protecting and preserving community heritage and memory.

New professional challenges are faced by library and information professionals worldwide as we move to make sense of the challenging throwaway knowledge habits of the delete generation.

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