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From the Office of the Director-General

Our Reference: 2015/2015

Ms Rebecca Gordon
Inquiry Secretary
House of Representatives Standing Committee on Infrastructure and Communications
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Ms Gordon

The National Archives of Australia is pleased to provide the attached submission to the House of Representatives Standing Committee on Infrastructure and Communications *Inquiry into the role of Smart ICT in the design and planning of Infrastructure.*

The Archives is the lead Australian Government agency responsible for the management of information and data across the Commonwealth.

The Archives would be pleased to provide more information to the Committee if required, and to serve in an advisory capacity to any initiatives related to national standards for data storage and access. Please contact Anne Lyons, Assistant Director-General, Government Information Assurance and Policy, at the National Archives on 02 6212 3639 or anne.lyons@naa.gov.au for more information.

Yours sincerely

David Fricker

29 June 2015

Your story, our history

NATIONAL ARCHIVES OF AUSTRALIA - SUBMISSION

House of Representatives Standing Committee on Infrastructure and Communications
Inquiry into the role of Smart ICT in the design and planning of Infrastructure

Context

The National Archives of Australia (the Archives) is pleased to provide this submission to the House of Representatives Standing Committee on Infrastructure and Communications *Inquiry into the role of Smart ICT in the design and planning of Infrastructure*.

The Archives notes that the terms of reference of the Inquiry include 'Harmonising data formats and creating nationally consistent arrangements for data storage and access'. The take-up of Smart ICT in the design and planning of infrastructure provides the opportunity to collect vitally important data that will both enable unprecedented gains in business productivity and also optimise the reliability and longevity of national infrastructure. However, this opportunity can only be realised by the recognition of information governance as a key attribute of the design and planning process.

Embedding contemporary practices of information governance into the design and planning of infrastructure will ensure that Australia's development and management of infrastructure is empowered by data that is secure, authentic, re-usable and interoperable with related activities such as urban development and emergency services.

The Archives is the lead Australian Government agency responsible for the management of government information and data. Government information is both a valuable national resource and a key business asset as Australia moves further into the global digital economy.

In keeping with the Australian Government's Digital Transformation program, the Archives is leading the information governance agenda across all Commonwealth Government agencies by providing standards, policies and guidance for sustainable digital information management.

The Archives would be pleased to serve in an advisory capacity to any initiatives related to national standards for data storage and access.

Key points

1. Smart ICT[1] technology is transforming government and industry business models and processes, resulting in the creation and collection of large volumes of data. While Smart ICT is the essential enabler for innovation, the enduring value exists in the data generated through the technology. Data provides new insights into how infrastructure investments are made, how infrastructure is developed and deployed, maintained and used, what future infrastructure demands might be and where efficiencies might be gained. It also ensures accountability of government and industry decision-making.

   Consequences of inadequate data and information management include data loss, poor business decisions, unnecessary risk and compromises to safety. A report by the US National Transportation and Safety Board (NTSB) on a natural gas pipeline rupture and fire in San Bruno, California, in September 2010, concluded that the 'pipeline integrity management program, which should have ensured the safety of the system, was deficient and ineffective because it was based on incomplete and inaccurate pipeline information'[2].

   In addition, access to comprehensive and reliable information can be a crucial factor in disaster response and recovery.

   Data management should be considered through all stages of infrastructure planning, development and maintenance. Creation and management of data should be incorporated into contract arrangements to ensure data remains available for the life of the infrastructure.

   It is essential to recognise that while 'technical obsolescence' is a necessary and indeed healthy aspect of an innovative approach to Smart ICT, 'information obsolescence' is regressive and must be avoided through adequate data management and information governance.

2. Use of Smart ICT in the design and planning of infrastructure will result in rapid creation of large amounts of valuable data. Information governance and digital continuity are essential to ensure that value from information and data can be optimised.

   Information governance is a strategic, multi-disciplinary approach to managing information at an organisational level to ensure regulatory, business and accountability requirements are met. It addresses how an organisation's information and data are managed to support business outcomes and should encompass governance of technology, security, risk and business continuity.

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[1] The Archives has taken smart ICT to include a range of advanced tools and techniques such as data analytics, optimisation, modelling & software systems, networked sensors, and integration with mobile devices and new ways of gathering data, such as social media and crowd-sourcing, https://www.nicta.com.au/content/uploads/2011/03/March2014-Response-Productivity_Commission_submission2.pdf

[2] Quoted in, Consumer Protection and Safety Division California Public Utilities Commission (5 March 2012) *Records Management within the Gas Transmission Division of Pacific Gas and Electric Company prior to the Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California September 9, 2010.* http://www.cpuc.ca.gov/NR/rdonlyres/23513DF5-28CB-425B-BAE4-0151981F0779/0/CPSD_Recordkeeping_OII_Report_Final.PDF

Information governance arrangements must be embedded in all technology, systems and processes to ensure that data is managed adequately, risks are considered, compliance obligations are met and accountability is achieved.

Digital continuity is an approach to keeping and managing digital information to ensure that it can be used in the way that is required for as long as required. Information governance is a key element of digital continuity.

The Archives has developed Digital Continuity Principles and a Digital Continuity Plan to assist agencies to ensuring that their information and data remain accessible and usable for as long as it is needed. Although they were developed for the Commonwealth sector, the principles and key actions of the Digital Continuity Plan are equally applicable in other jurisdictions and industry.

3. Harmonising data formats and creating nationally consistent arrangements for data storage and access will contribute to interoperability of systems and data.

However, metadata is crucial for interoperability and agreed metadata standards are essential to achieve data harmonisation.

Interoperability of data and systems based on standards allows data discovery, sharing, analysis and reuse, as well as enabling data to be stored, controlled, managed, understood and preserved over time. Agreed standards also enable data sharing for business continuity purposes and disaster planning and recovery.

The Archives has developed metadata standards for use in the Australian Government and is developing interoperability standards based on formats and metadata. These standards are applicable outside Government and some have been adopted as national standards.

Through membership of Standards Australia, the Archives is an active participant in the development, endorsement and use of national and international standards related to information management. These include ISO 16175 *Guidelines and functional requirements for records in business systems* and AS 5044 *AGLS Metadata Standard* to improve access to online resources.

The Archives participates in policy and standards development and endorsement through the Council of Australasian Archives and Records Authorities and its working group Australasian Digital Recordkeeping Initiative.

Government can promote preservation, interoperability and optimisation of data related to infrastructure by supporting the further development and adoption of format and metadata standards. The Archives is willing to continue to contribute to these initiatives to foster best practice.

Recommendations

The Archives recommends that:

1. The Inquiry recognises that the long term value of Smart ICT resides in the data that is created. Data management should be considered through all stages of infrastructure planning, development and maintenance from its inception.
2. Information governance and digital continuity should be integrated into all infrastructure planning, development and maintenance; ensuring valuable data is re-usable for the long term and survives the inevitable obsolescence of the technology that created it.
3. Metadata is crucial for interoperability and agreed metadata standards are essential to achieve data harmonisation.
4. Government contributes to preservation, interoperability and optimisation of data related to infrastructure by supporting the further development and adoption of format and metadata standards.
5. The Inquiry notes that the Archives would be pleased to serve in an advisory capacity to any initiatives related to national standards for data storage and access.

About the National Archives of Australia

The National Archives is an Executive Agency in the Attorney-General's portfolio and was established under the *Archives Act 1983*. Its role is to promote the creation, management and preservation of authentic, reliable and usable Commonwealth records and facilitate Australians' access to the archival resources of the Commonwealth.

The definition of 'Commonwealth records' in the Archives Act covers all information in digital and non-digital formats that is created, used or received as part of Government business. As a result email, social media content, databases, geospatial information, audio visual and business-related information in any other format constitutes the records of the Commonwealth.

The National Archives sets standards and policies and provides guidance and advice to build capability in agencies to achieve a transition to proper management of digital government information. This will ensure that reliable government information does not succumb to technical obsolescence and is accessible and usable for as long as it is required to support government outcomes; to underpin transparency and accountability; and protect the rights and entitlements of Australians.

Through its Digital Continuity 2020 Policy and its lead role in implementing the Commonwealth Digital Transition Policy and providing standards, advice and strategic direction to agencies, the National Archives of Australia is providing a foundation for current digital transformation initiatives across the Australian Government. Information policy and effective digital information management enable the Digital Transformation of government services and are essential prerequisites for achieving the Government's digital agenda.

The National Archives participates in a range of national and international forums and is recognised in Australia and overseas for its leadership in developing and promoting effective digital information management.