

Need of Legislation and Digital Preservation Policy Framework in Indian Context

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ABSTRACT

This paper provides a comparison between the American and Indian digital preservation programmes based on the essential building blocks such as national legislation for digital preservation, basic legal framework, national digital preservation initiative, digital preservation tools, standards and practice guidelines, digital repository infrastructure, and audit and certification. Selected digital preservation policies of the organisations from UK, USA, Canada, and Australia are also analysed. The gap analysis shows that in the Indian context, legislation on digital preservation of electronic records and institutional digital preservation policies are the missing elements, which need to be addressed on high priority. The preservation policy is a mandatory requirement for the audit and certification of trustworthy digital repositories.

Keywords: Digital preservation policy, trustworthy digital repository

1. INTRODUCTION

The objective of this paper is to identify gaps and differences in the Indian versus International digital preservation programmes, particularly the US initiative, so as to enable the Indian government in taking necessary steps towards bridging the gaps and strengthening its own National Digital Preservation Programme (NDPP). Selected institutional digital preservation policies are also studied to derive guidance on the coverage, structure and focus of the policies.

The legislation can drive the digital preservation initiatives at national level and the institutional policies can drive the digital preservation activities at the organisation level.

2. BACKGROUND

The National Study Report on Digital Preservation Requirements of India¹ of Department of Electronics and Information Technology (DeitY), Government of India, indicates the enlarging volumes of born digital information through the 27 mission-mode projects of National e-Governance Action Plan (NeGP) and digitalisation initiatives of other government departments in India. The report also highlights the unpreparedness of the record producing organisations and the potential threats to this

digital information due to digital obsolescence. Therefore, the DeitY promptly took the initiative to formulate the NDPP for India. As per the recommendations in the National Study Report, DeitY has sponsored to establish the Centre of Excellence for Digital Preservation at C-DAC Pune, with a mandate to develop the pilot digital repositories for e-District Mission Mode Project of NeGP, National Archives of India, and Indira Gandhi National Centre for Arts. In this project, C-DAC is also developing various tools, standards and best practices for digital preservation.

3. COMPARISON OF DIGITAL PRESERVATION PROGRAMMES

3.1 Parallel Initiatives

Figure 1 shows the comparison based on the building blocks (middle column) of digital preservation programmes launched by USA and India. Though there may be differences in volume, scope, budget, and execution strategies, it is possible to draw the parallels between similar initiatives taken by both USA and India such as availability of basic legal framework, national digital preservation initiative, efforts on evolving standards and practice guidelines, development of digital preservation tools and digital repositories.

USA		Building Blocks	India	
Competencies for Trustworthy Digital Repository Certification	✓	8 Audit and Certification	Not ready as yet	-
Digital repository infrastructure development by Library of Congress	✓	7 Digital Repositories	Digital repository development projects with NAI, IGNC, E-district, E-court	✓
Digital preservation tools by NDIIPP partner organizations	✓	6 Digital Preservation Tools	Centre of Excellence for Digital Preservation is developing various digital preservation tools and systems	✓
ISO standards and institutional practice guidelines	✓	5 Standards and Practice Guidelines	e-gov digital preservation standards and best practices are being developed	✓
Digital preservation policies by libraries, archives and repositories	✓	4 Institutional Digital Preservation Policies	Need to be defined	-
National Digital Information Infrastructure and Preservation Program (NDIIPP)	✓	3 National Digital Preservation Initiative	Centre of Excellence for Digital Preservation, as part of the National Digital Preservation Program (NDPP) of Department of Electronics and Information Technology (DeIT)	✓
Presidential Library Act, e-Government Act, Government Paperwork Elimination Act, Information Security Act, Copyright Act, Electronic Signatures in Global and National Commerce Act, Privacy and Data Protection Act, etc	✓	2 Legal Framework	Information Technology Act, Public Records Act, Right To Information Act, Copyright Act, etc.	✓
NDIIPP Congressional Legislation passed in 2000	✓	1 National Digital Preservation Legislation (National policy)	Need is recognized	-

Figure 1. Comparison between American and Indian digital preservation programmes.

3.2 Gaps in the Building Blocks

As per Fig. 1, the most notable difference or the gap between American and Indian digital preservation programmes is at its origin and the main driving force. In case of US, the National Digital Information Infrastructure and Preservation Program (NDIIPP) came into being after the US Congress passed NDIIPP legislation in December 2000². The legislation empowered the Library of Congress as the lead coordinating agency to implement the program by involving the key government agencies, namely, the Department of Commerce, the White House Office of Science and Technology Policy, and the National Archives and Records Administration—and with those entities with expertise in the collection and maintenance of archives of digital materials—the National Library of Medicine, the National Agricultural Library, the National Institute of Standards and Technology, the Research Libraries Group, the OCLC Online Computer Library Center, and the Council on Library and Information Resources—as well as with the wide group of private sector institutions working in digital formats. The Presidential Memorandum on Managing Government Records³ by Barack Obama issued on November 28, 2011 is accessible from the website of the White House. It

specifies the commitments to record management reforms and the record management directives with clear time limits and deadlines. The congressional legislation on preservation of digital information being produced across a wide spectrum of domains is evidently the main driving force behind the unambiguous commitment towards digital preservation.

On the India side, the draft Electronic Service Delivery Bill⁴ is ready and due to be passed by the Indian parliament, which makes it mandatory for all government agencies to offer citizen services through electronic means within next 5 years but it is silent on the digital preservation of electronic records. The legal justification for digital preservation in India largely rests upon the retention requirements or indirect/derived triggers for preservation as per the provisions in Information Technology Act, Right To Information Act, Copyright Act and the Public Records Act. Most of these laws need to be upgraded and harmonised for addressing the digital preservation requirements of electronic records. The Centre of Excellence for Digital Preservation has ensured the participation of some of the key stakeholders like National Informatics Centre, National Archives of India, Indira Gandhi National Centre for Arts, STQC, NeGP, etc.,

but is currently limited by the project duration. The active participation from Department of Culture, Department of Commerce and other ministries is equally important.

3.3 Need of Legislation on Digital Preservation of Electronic Records and Digital Information

Therefore, in the Indian context, the legal justification for digital preservation is inadequate to generate a national level momentum and a landslide change in the policies. The present initiatives can build the competencies, tools and standards necessary for developing the digital repositories but it may not be sufficient to spread the digital preservation movement across all ministries and departments at central and state level. Therefore, the Indian government must formulate and pass the legislation on digital preservation of electronic records and digital information on priority. The proposed legislation on digital preservation of electronic records and digital information and rigorous follow up action will help in propagating the digital preservation.

3.4 Need of Institutional Digital Preservation Policies

The institutional digital preservation policy framework is the next logical consequence of the national legislation. Such policy framework is meant to provide the required mandate, decisions, financial support and commitment from the authorities for the digital preservation of information produced by the institution. Numerous institutional digital preservation policy documents published by various university libraries, archives, and repositories are easily accessible from their respective websites. The digital preservation policies of selected institutions from UK, Canada, USA, and Australia have been analysed and presented in Table 1. The analysis of digital preservation policies identifies the following aspects:

- Key constituents of digital preservation policy

A comprehensive list of key constituents is prepared by integrating the points from various digital preservation policies.

- Generic statements

The presence of very generic statements in the policy are marked as (generic).

- Basic definitions

The presence of basic definitions related to digital preservation in the policy. Presence of such definitions is marked as (basic).

- Specific clauses

The presence of specific clauses which define the

direction, conditions and decisions are marked as (specific). It is observed that most of the digital preservation policies are filled with basic definitions and write-ups which explain the key concepts of digital preservation. Actually, the policy is not expected to explain the technical concepts or educate the readers about digital preservation. If necessary, it can be done separately. The institutional policies are expected to convey the direction, decisions, conditions, expected actions, commitment, availability of support, and ownership. Such framework of policies has to provide adequate coverage for such activities related to digital preservation, which require to be guided and supported by the policy framework for consistency and clarity of operations. The unique characteristics of the selected policies are briefly discussed hereafter.

3.5 Digital Preservation Policy of Selected Institutions

3.5.1 Parliamentary Archives, UK

Digital preservation policy of Parliamentary Archives, UK⁵ is comprehensive but sometimes it indulges in providing definitions of various technical aspects, like, authenticity, integrity, significant properties, bitstream preservation, reliability, usability, migration, audit, etc. The definitions are anyway part of the glossary of terms so the policy framework could focus purely on clauses. The most notable part in this policy is that it has been agreed by a working group of the two Houses' Information Services and Parliamentary ICT in March 2008 and subsequently endorsed by both Management Boards. The interesting aspect of this policy is that it is directly linked with the knowledge management (KM) and information technology (IT) strategies. It also specifically mentions that the parliament may use the services of external contractors or partners or other nominated third-party in the section on custody and hosting.

3.5.2 Library and Archives of Canada (LAC)

The digital preservation policy of Library and Archives of Canada (LAC)⁶ is simple, clear and offers the best combination of technical and administrative clauses. This policy clearly specifies that their primary objective is to become the Trusted Digital Repository. In the section on challenges, the limitations of digital preservation due to unavailability of established standards and ambiguity related to digital rights are clearly stated. The section on Principles and Commitments mentions that LAC ensures a financial commitment to acquisition, description, accessibility, and preservation programme for digital materials. The commitment to review and audit of the LAC's Trusted Digital Repository Services on a regular basis is also mentioned. Standards and quality control section specifically mentions the technical specifications, accepted file formats, metadata

Table 1. Analysis of selected digital preservation policies of institutions from UK, Canada, USA and Australia

Constituents of digital preservation policy	Parliament of UK	Library and Archives of Canada	H-Net electronic mailing list	National Library of Australia
Authorisation, ownership	Specific	Specific	Specific	Specific
Purpose	Specific	Specific	Specific	Basic
Challenges and risks	Basic	Specific	Specific	Basic
Mandate	-	Specific	Specific	-
Objectives	-	Specific	Specific	Basic
Scope	Generic	Specific	Specific	Basic
Legal framework	-	Specific	-	-
Operating Principles	-	Specific	Specific	Basic
Commitments	-	Specific	Specific	-
Financial sustenance	-	Specific	Specific	-
Technological and procedural suitability	-	-	Specific	-
Selection and acquisition criteria	-	Specific	Specific	Basic
Acquisition Methods	-	Specific	-	Basic
Collection development	-	Specific	-	Basic
Record management	-	-	-	-
Technical guidance on digitisation, metadata, authenticity, integrity, SIP, AIP, DIP, storage guidelines	Basic	Specific	Specific	-
Strategies	Basic	Specific	Specific	-
Standards	Basic	Specific	Specific	Basic
Quality control	-	Specific	Specific	-
The policy requirements	Basic	Specific	-	-
Business continuity planning	Basic	-	-	-
Preservation planning	Basic	-	-	-
Preservation action	Basic	Specific	-	-
Skills and training	Basic	-	-	-
Cooperation and collaboration	Basic	Specific	Specific	Basic
Role and responsibilities	Basic	Specific	Specific	-
Access and use	-	Specific	Specific	-
Digital rights/copy right	-	Specific	Specific	-
Custody and hosting	Specific	-	-	-
Disaster recovery plan	Basic	-	-	Basic
Communication of the policy	Specific	Specific	-	-
System/Information security	Basic	-	Specific	-
Appraisal/audit	Basic	Specific	Specific	-
Policy review	Basic	Specific	Specific	-
References to related policies	-	Specific	Specific	-
Glossary of terms	Basic	Basic	-	-

standards, etc. The LAC's digital preservation policy does not mix clauses with definitions.

3.5.3 H-Net Electronic Mailing List

The digital preservation policy of H-Net electronic mailing list, Michigan State University⁷ is also one of the best policy frameworks available. H-Net is committed to long-term preservation of discussion logs, academic discourses through more than 180 academic networks and public electronic mailing lists. The e-mail list conformance to OAIS section of their policy provides technical specifications of the submission information

package (SIP), archival information package (AIP) and delivery information package (DIP). The technological and procedural suitability section provides technical policies for message ingest, storage, and retrieval. H-Net also expresses its commitment to audit and certification process and aims at becoming a trustworthy digital repository.

3.5.4 National Library of Australia

The policy of National Library of Australia⁸ provides a broad approach to digital preservation. The ownership of the policy is entrusted with the Director of the National

Library's Web Archiving and Digital Preservation Branch. The policies become abstract or concrete depending on the focus, e.g., H-Net's preservation policy is extremely focused if compared with the policy of National Library of Australia or the Parliamentary Archive of UK. Several guidelines are already available to help in formulating the preservation policy^{9,10}, but it is believed that study of actual preservation policies can give more clarity.

The Indian record producing institutions are yet to define their policies for digital preservation of born digital or electronic records. The proposed legislation on digital preservation is a tedious and long process. In that case, it will be most appropriate if NeGP prepared its own digital preservation policy framework for the preservation of electronic records produced through its 27 mission-mode Projects. Similarly, the National Archives of India, Indira Gandhi National Centre for Arts and Delhi Court must define their own digital preservation policies and get them authorised from the respective parent ministries.

4. AUDIT AND CERTIFICATION OF TRUSTWORTHY DIGITAL REPOSITORIES

As per the ISO 16363:2012 on Audit and Certification of Trustworthy Digital Repositories¹¹, the preservation policy is a written statement, authorised by the repository management, that describes the approach to be taken by the repository for the preservation of objects accessioned into the repository. It also specifies the need of procedural accountability and preservation policy framework. In the Indian scenario, the technical requirements of the Trustworthy Digital Repository are being addressed.

Figure 2 shows that the ecosystem of trustworthy digital repositories¹² include national legislation, basic legal framework, policy and the all support systems such as administration, manpower, standards and tools. All libraries, archives and repositories converge¹³ in terms of the need of such ecosystem.

5. CONCLUSIONS

Based on the comparison of digital preservation programmes between US and India, it is observed that the Indian government needs to formulate the legislation on preservation of electronic records and digital information on high priority. The institutional digital preservation policy is a result of the mandate, objectives and legal obligations of the organisation. The Indian archival institutions and record producers need to formulate their digital preservation policies to fulfill the primary need specified in the ISO for audit and certification of trustworthy digital repositories¹¹.

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Legislation on preservation of electronic records and digital preservation

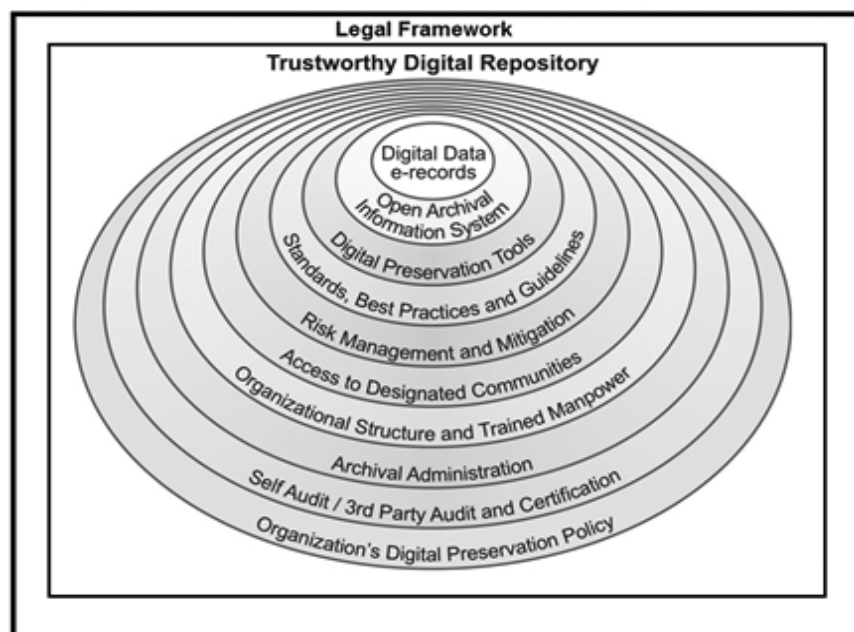


Figure 2. Overall ecosystem for trustworthy digital repository.

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About the Author

Dr Dinesh Katre is presently working as Associate Director & HOD of Human-Centred Design and Computing Group at C-DAC Pune, India. He is also the Chief Investigator of Centre of Excellence for Digital Preservation project sponsored by Department of Electronics & Information Technology, Government of India. He has rich experience of R&D in diverse areas such as digital preservation, virtual museums, e-learning, interactive game design and multimedia authoring. He has published over 40 research papers spanning across domains such as HCI & usability, digital preservation, multimedia learning, e-governance. He has author/edited two books related to human-computer interaction. He was also the vice chair and co-organiser for the IFIP HWID International Conference on HCI and Work Analysis, December 2012 at Copenhagen, Denmark. He is also a member of the External Advisory Committee of European Alliance for Permanent Access/APARSEN project.