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Making Our Digital Memory Accessible Tomorrow by Watching Technology Today

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Since its foundation in 2002, the Digital Preservation Coalition has published a series of topical Technology Watch Reports that provide an authoritative introduction to recognized challenges associated with maintaining access to data and digital materials in the long term. The series fills a strategic gap between emerging research and actual professional practice, and it strongly reflects the needs of the DPC's members. Commissioned from recognized domain experts, they identify and track developments in IT, as well as the standards and tools that inhibit or enable digital preservation. The reports are thoroughly peer-reviewed and scrutinized by the DPC membership prior to publication to ensure they are informed, current, concise, and balanced. They are available to all and are intended as a lasting and helpful contribution to knowledge exchange.

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The Digital Preservation Coalition (DPC) is a not-for-profit membership agency that acts as a catalyst and advocate for digital preservation. The Coalition ensures its members can continue to deliver resilient long-term access to digital content and services through knowledge exchange, capacity building, assurance, advocacy, and partnership. Its primary objective is raising awareness of the importance of the preservation of digital material and the attendant strategic, cultural, and technological issues.

In the last twelve months, the DPC has released four new reports in its series of Technology Watch Reports. Topics include Intellectual

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Property Rights and Preservation (Charlesworth 2012), Digital Forensics and Preservation (Leighton John 2012), Web Archiving (Pennock 2013), and Preserving Computer-Aided Design (Ball 2013). A fifth report, Preservation Metadata (Gartner and Lavoie 2013), was released as a second edition to their popular but now out-of-date report from 2005. Four more reports are now also in development.

In *Intellectual Property Rights for Digital Preservation* (2012) Andrew Charlesworth notes that though a whole range of legal issues arise in digital preservation, intellectual property rights, especially copyright, has had the most obvious coverage in the literature. There is a real risk that sensible and necessary preservation actions are delayed or constrained by well-intentioned but uninformed concerns about intellectual property law. As a result, it is essential that anyone undertaking digital preservation should be able to understand the specifics of the law. Perhaps, more importantly, they need to respond to the legal challenges with appropriate and practical strategies for managing risks. Charlesworth notes that preservation has been rather overlooked within the increasingly unbalanced relationship that exists between rights holders and the public. Archivists have been risk-averse, uninterested policy makers and rights holders assertive of restrictions that protect their rights in the short term, who, inadvertently, inhibit the preservation actions that sustain their intellectual property for the long term.

For many years now, Jeremy Leighton John of the British Library has been considering the role that cutting edge forensic technologies might play in more traditional archival arrangements and description processes. His report, Digital Forensics and Preservation (2012) examines how institutional repositories and professionals with responsibilities for personal archives can benefit from forensic tools and concepts when addressing digital authenticity, accountability, and accessibility. Given the diverse and huge volumes of unsorted data that archives have to deal with, these powerful tools provide hope that traditional archival principles are not overwhelmed in the near future. But, at the same time, the capacity for forensic tools to delve beyond the surface of a document to reveal change histories, comments, and personal details, not to mention web caches and private transactions of individuals and agencies around the world, means these powerful tools need to be deployed in an informed way.

Written by Alex Ball, *Preserving Computer-Aided Design* (2013) provides an accessible overview of the development of technologies associated with CAD, the threat caused by its own innovative application; vendors' drive to add ever more features which can render valuable and strategically vital information unusable. Computer Aided Design sees constant innovation; therefore, although incredibly valuable and intricate, CAD systems are often ephemeral and largely incompatible with each other. The report explores some of the initial challenges that make the preservation of CAD systems difficult and then explores emerging solutions in the industry, including

the LOTAR initiative which has unified digital preservation standards for the aerospace industry. CAD systems depend on intricate inter-relations of data, libraries, and procedures, which make it hard to distinguish data from software. Moreover the use-cases of CAD systems—such as architecture or engineering means that can be business critical for tens of years—and numerous generations of computing. It concludes that there is no "one-size-fits-all" solution to the preservation of CAD drawings and systems, nor is there sufficient attention paid to the growing problem of long term access. As a result, the report ends with a call for an advocacy program that raises awareness of the importance of standard formats and high quality format migration. Such a program would support greater interoperability of systems in the present and better support for CAD systems in the long term.

Web Archiving' (Pennock 2013) presents a constructive study of the fast-paced digital age and the pressures libraries and archives face in attempting to capture web-based information for the future. Web archiving is in some senses paradoxical. The capacity to change and update content is one of the great advantages of the web over traditional publishing, but this is also a threat to cultural memory. Moreover, the speed at which the web has become part of everyday life is unprecedented but the speed at which it develops makes it hard for memory institutions to capture its technical legacy, not to mention the social history and cultural memory that it encapsulates. There is a large community of web developers who can make use of this report, which is the first overview of the topic to be produced for several years. It explores current technical approaches to web archiving and, crucially, outlines the resources available to support organizations tackling this "moving target."

The second edition of *Preservation Metadata*, written by Richard Gartner and Brian Lavoie and published in June, focuses on recent developments in preservation metadata since the last report, made possible by the emergence of PREMIS as a de facto international standard. The first edition of this report was published just as the PREMIS Data Dictionary was published and served as a useful guide for those implementing PREMIS for the first time. Since then, the standard has been through several iterations and a growing number of implementations help to identify its strengths and weaknesses. As a result, this new edition is updated in the light of recent changes and practical experience. It outlines key implementation topics including community outreach, packaging, tools, and resources that are now available to support implementation.

A sixth report on preserving E-Journal content is imminent (Beagrie in press) while three further reports are now in preparation: Preserving E-Books (Kirchoff and Morrissey in press); Preserving PDF/A (Fanning in press); and a second edition of the Introduction to the OAIS reference model (Lavoie in press). These last three are due for release in 2014.

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