

## Foreword

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Our society has eagerly embraced the move from traditional information storage and processing, mostly on paper, to digital. We all benefit greatly from the increased functionality it provides us. Valuable scientific and cultural information assets are created, stored, managed and accessed digitally. In addition to data and document assets, we even encode scientific, business and manufacturing processes in digital form.

The threat of losing digital assets is high. Digital media are vulnerable: they decay and are short-lived. Over time, changes in the external environment pose additional risks. Data carriers become obsolete; software and hardware technologies required to access them fall into obsolescence; formats that are used to represent digital objects fall into disuse; 'representation information' that specifies how to access or interpret them is lost; and changes in organizations' cultural and financial priorities add risk. Unlike print-based materials, digital assets cannot survive significant gaps in care. In addition, if insufficient care is taken, any data and information management activity, such as when digital objects are copied, moved, renamed or reformatted, poses threats: digital assets may be damaged and knowledge about their origin may be lost, as well as knowledge about the historic relationships between renamed or versioned files. Loss of digital assets on a large scale has had an enormous economic and cultural impact on individual organizations and on cultural institutions.

These threats need to be addressed proactively through information management as well as digital preservation actions. Digital preservation 'combines policies, strategies and actions that ensure access to digital content over time' (Preservation and Reformatting Section (PARS), *Definitions of Digital Preservation*, American Library Association, Washington, DC, 2007, available at [www.ala.org/ala/mgrps/divs/alcts/resources/preserv/defdigpres0408.pdf](http://www.ala.org/ala/mgrps/divs/alcts/resources/preserv/defdigpres0408.pdf)). Over the last two decades, the digital preservation community has focused efforts at creating technical and organizational solutions to this problem. Our responses to overcoming damage to data carriers and to the bits encoded on them include bit preservation through storage medium refresh and replication on several data carriers. Files in obsolete file formats or software on

outdated computing platforms can be migrated to better supported formats and platforms. Alternatively, obsolete systems can be emulated on newer platforms so that the original files or software can now be rendered or executed in a contemporary environment. Computer museums provide the means of authentic performance of digital assets on equipment for which they were designed. Digital forensic methods and recovery and reconstruction of lost and damaged files can be applied when loss has already happened. And finally, it is important to collect metadata which enables us to understand and use digital assets in the future.

Technical and organizational responses are critical, but they are limited by our ability to legally execute them. Legal aspects influence our ability to preserve documents, data, metadata and software. And they influence our ability to re-use them at an unspecified point in the future. This is complicated by the fact that regulations do not apply indefinitely and that circumstances change: for example, licences may expire, and legal regulations may change.

*Legal Aspects of Digital Preservation* addresses this very important problem. Rather than focusing on document and data preservation, some recent research projects have taken a more comprehensive look at the need to preserve whole rendering stacks and business execution environments. Examples are the KEEP project that investigated the digital preservation of software through its emulation on more modern platforms, and the TIMBUS project that is investigating the preservation of complete scientific or business processes. This touches on all aspects of the preservation challenge: business constraints; process descriptions; computational environments and their mutual dependencies; digital assets that are produced and consumed by the processes; roles of individuals and organizations; and dependencies on third party products and services. Both projects have rightly expended significant effort considering the legal implications of executing various digital preservation strategies in various use case scenarios in this larger scope. *Legal Aspects of Digital Preservation* adopts this comprehensive view. It should help legal practitioners and non-specialists to understand the legal issues to be considered in preparing digital preservation strategies, and is a very valuable contribution to the digital preservation discussion and practice at this time.

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