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# Future Proofing the Digital Society

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An Introduction to Digital Curation and Data Practices

**By Kalpana Shankar**

In this article, I briefly introduce digital curation, discuss some of the successes of the process (and a cautionary tale), and invite readers to contribute articles.

Keywords: digital curation

Categories: *Applied computing – Computers in other domains – Digital libraries and archives*

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## Introduction

Welcome! As the new Section Editor for Data Practices and Digital Curation, ACM's Computers and Society, I wanted to use this opportunity to introduce the readers of ACM's Computers and Society to what experts mean when they use the terms “digital curation”, what the implications are for computers and society, and encourage readers to submit pieces for the ACM Computers and Society newsletter.

## A Cautionary Tale

In a blog post at Dr. Inna Kouper's DIKW: Data, Information, Knowledge, Wisdom blog<sup>1</sup>, guest contributor Andy Turner contributed an entry about the National Centre for e-Social Science (NCeSS), a UK program established in 2004 to develop tools and data services for social scientists. Turner, one of the researchers on the project, worked on developing demographic models. He wrote that in 2011, the NCeSS server went offline because of a catastrophic server failure. There were no resources left to replace the server. Turner was able to salvage some of the results but lost about three years of work. He writes, “Preservation and curation are not easy. Sustaining research effort that may one day generate useful data and software is also not easy, especially when the goal is aspirational and probably quite a long way off and the steps are necessarily baby steps.”

Digital curation is not just about backing up data. Instead, this story suggests that a broader plan that includes thinking about sustainability, standards, technologies, and financial resources – the work of digital curation. Nor are these plans “just” technical ones. They have social dimensions built into them, and implications for future societies.

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<sup>1</sup> Kouper, Inna. DIKW: Data, Information, Knowledge, Wisdom. <http://inkouper.blogspot.ie/>

## What is Digital Curation?

The Digital Curation Center ([www.dcc.ac.uk/about/](http://www.dcc.ac.uk/about/)) in the United Kingdom defines digital curation as the act of “maintaining and adding value to a trusted body of digital information for current and future use; specifically, we mean the active management and appraisal of data over the lifecycle of scholarly and scientific materials”. In short, digital curation is the suite of activities and processes needed to ensure the preservation of digital information over time. The data curation profession also considers and addresses higher-level functions such as repository management, digital preservation, governance, and funding. Digital curation ensures "the maintenance of authenticity, reliability, integrity, and usability of digital material".

It's worth paying attention to two points. One is the idea that digital curation should involve both current and future use of digital data. It's not enough to take care of research data for today's use and users; the future users of the data (which may be those who created it, but maybe not) are an essential part of the digital curation value proposition.

The second is the use of the word “active”. The “active management” component means just that – those who create data and those who curate it need to take an active role in instituting curation. Those who create digital information cannot trust vaguely defined processes downstream and hope that “somehow” digital information will be available. Also, digital curators cannot passively wait for digital information to come to them. Instead, they are active managers of digital materials (often working in tandem with data creators, a point not explicitly made in this formulation of digital curation in the way that others who have defined the term have included it).

## Who “does” digital curation?

The nuts and bolts of “doing” digital curation involves the collaboration and cooperation of numerous professional communities, including researchers, librarians, archivists, computer scientists, as well as an increasingly specialized data or digital curator. To these specialists, the need for proactive engagement in the care and feeding of digital data seems clear. Researchers spend an enormous amount of their time and resources in creating digital data and similar resources, including acquiring technology to house them. Research data in particular is expensive and often represents a significant investment of public resources through grants. Digital curation helps mitigate the risk of software and hardware obsolescence, reduces threats to the longevity of digital information, and makes the re-use of digital resources more possible (and potentially more likely since digital resources can be more easily found and analyzed).

However, digital curation is not just for arcane and specialized research data and resources. Archives, libraries, and museums have also invested heavily in developing digital collections, including digitizing paper-based collections and creating mechanisms for managing born-digital (that is, materials that have always been digital and not paper that has been digitized) materials. Their efforts have resulted in audiences all over the

world being able to access specialized information that used to require visits to these physical spaces. Social media also provide the means by which users can interact with each other about such materials with or without the oversight of archival and library professionals.

## Success Stories

Although the literature and anecdote abounds with stories about the loss of data, technological obsolescence or failure, theft or fraud, and failure to plan, it's important to note that there are just as many successes of how data curation has yielded new insights because researchers were able to effectively reuse data. For example, the DIKW blog has one story of a data set characterizing early Iron Age glass beads and thus creating a “virtual archive” of the beads. Other researchers were able to use this well-developed data set to identify gas and mineral deposits in the beads. Dr. Ngan-Tillard, the initial data set created, commented that “storing digital collections of archaeological remains together with their meta-data and interpretation will help advance both arts and research and create more challenges for our knowledge”.

## Social Implications

Digital curation is a profoundly social activity. One, the work of digital curation is itself cooperative and involves institutional choices, entanglements, decisions, and processes. Secondly, digital curation has social implications for all of us. The choices that are made with respect to what to keep and how, how standards are implemented, access mechanisms that are created, public and professional engagement, the business and politics of data institutions, the negotiation of legal and policy regimes, and the economics of paying for sustained access are deeply political, legal, cultural, and ethical issues.

Second, the current and future uses and users of digitally curated resources are also part of the process and represent another source of the “social”. The politics and economics of access to data and digital resources (open and otherwise), trust in digital data, and the multitudinous ways that people engage digital data and resources represent a rich vein of reflection for us. So rather than just focusing on the specifics of digital curation, we can also pay attention to the wider “data practices” that constitute our society.

## An Invitation to the Reader

As Section Editor for Digital Curation and Data Practices, I would like to encourage readers of ACM Computers and Society to submit pieces to us on digital curation and related data practices. The newsletter will be published four times a year but you can submit any time you like. Articles are edited but not peer reviewed and must be of general interest, written in an easy to understand language, and have some

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