

# Sustainability Design in Information Systems

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## Abstract

Sustainability - the "capacity to endure" - has emerged as a challenge with transformative impact on many disciplines and professions, including information systems. It requires simultaneous consideration of at least five dimensions: environmental resources, social and individual well-being, economic prosperity, and long-term technical viability. This requires a cross-disciplinary approach to research and design that moves beyond narrow-minded solutionism to emphasize an appreciation of 'wicked problems' over a focus on puzzles and pieces; systems thinking over computational problem solving; and an integrated understanding of socio-technical systems over a reductionist divide-and-conquer approach to systems analysis. These shifts do not come easy, and for most systems, the hidden sustainability effects of past decisions in systems design are unknown. We can call this a system's 'sustainability debt'. In this talk, I describe how my research in digital curation led me to recognize synergies across a range of disciplines united by the need for new design approaches focused on sustainability. I characterize principles of sustainability design and the key influence of requirements activities on the sustainability debt of a system under design. I present recent efforts to develop this area research, including an interview study of software professionals, as a starting point to a discussion of barriers and opportunities for sustainability design research.



## Bio

Christoph Becker is an Assistant Professor at the Faculty of Information at the University of Toronto, where he leads the Digital Curation Institute, and a Senior Scientist at the Vienna University of Technology in Austria, where he led a research program on scalable digital preservation as part of the EC-funded project SCAPE with an international consortium of universities, memory organizations, industrial research centers and commercial partners. He is Principal Investigator of the project BenchmarkDP, which develops open methods to create, aggregate and share evidence to assess and compare digital preservation processes and capabilities, and co-founder of [www.sustainabilitydesign.org](http://www.sustainabilitydesign.org).