

# The InterPARES Trust Project – Trust and Digital Records in an Increasingly Networked Society

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## Summary

*Key issues of ownership, jurisdiction, and privacy regarding Internet-based records have yet to be resolved, but technology will not stand still to wait for legal and regulatory systems to catch up. There exists a need for a shared regulatory and procedural framework that promotes consistency and balance in terms of policies and practices regarding the handling of digital objects. The InterPARES Trust Project will generate new knowledge on digital records maintained online and will create a new model statute specific to the Internet that will enable legislative reform work for the continued development of the current fleet of uniform statutes.*

**Key words:** Trust; Digital Records; Cloud Computing; Social Media; Privacy; Access; Secrecy; Digital Preservation; InterPARES

## Introduction

Advances in the speed and connectivity of computer resources have allowed individuals to create, store and access vast amounts of records in the highly networked, and some would argue easily hacked, environment of the Internet. Organizations such as banks, public utilities, hospitals and governments which are trusted to store the often personal and sensitive records of these individuals are also increasingly utilizing Internet storage and/or providing Internet access to records without fully understanding the implications. Where these records are being stored, how they are being managed, and how long these records will remain accessible is unclear. As Internet resources can, and often do, reside across juridical boundaries, who is liable for any security breaches and maleficence is unclear and most Internet storage providers' service level agreements (SLAs)

exempt these providers from prosecution.<sup>1</sup> The accumulation of massive amounts of data in order to provide a host of services, many of which are focused on marketing and obtaining competitive advantage, is increasingly centralizing personal information in 'big data' warehouses. These warehouses are ripe with valuable information and attractive targets to computer criminal activity.

The issues that arise from such an increasingly networked world of data are clear: Can the records be trusted? Can records that derive from data stored online be considered trustworthy or even traceable? Are they complete? Are they authentic? Who created them, modified them, and access them? Where are they stored and under whose jurisdiction would legal disputes be heard? Who is securing the systems, and how can it be proven that the records remains safe and unaltered?

### **Goals and Objectives**

The goal of the InterPARES Trust Project is to generate the theoretical and methodological framework that will support the development of integrated and consistent networks of policies, procedures, regulations, standards and legislation that can be applied to digital records that are created, stored and accessed using the Internet. These frameworks can increase and validate the public trust by providing evidence of good governance, a strong digital economy and a persistent memory. To achieve this goal, the objectives of the research are to:

1. discover how current policies and practices regarding the handling of digital records by institutions and professionals affect the public's trust in them, in light of the exponential growth of and reliance on Internet services;
2. anticipate problems in maintaining any trust in digital records under the control of entities suffering a waning level of confidence from the public (including legal, law enforcement, financial, medical, broadcasting, "hacktivist," and governmental organizations and professionals);
3. establish what significance national/cultural contexts have with regard to the level of trust digital records on the Internet enjoy;
4. articulate model policies, procedures, and practices for creating, managing, accessing, and/or storing records on the Internet, especially in social media and cloud computing environments and through mobile technolo-

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<sup>1</sup> As an example, the Amazon Web Services Customer Agreement states: "The service offerings are provided 'As Is.' We and our affiliates and Licensors make no representations or warranties of any kind, whether express, implied, statutory or otherwise regarding the service offerings or the third party content, including any warranty that the service offerings or third party content will be uninterrupted, error free or free of harmful components, or that any content, including your content or the third party content, will be secure or not otherwise lost or damaged.." This agreement can be found at <http://aws.amazon.com/agreement/>

- gies, and test them in a variety of contexts so that, from them, international standards, guidelines and best practices can be developed; and,
5. formulate proposals and models for law reform, and functional requirements for the systems in which Internet providers store and manage digital records.

### **Theoretical Framework**

The theoretical framework used for this project is being adapted from archival and diplomatic theory, with particular emphasis on the concepts that are foundational to trusting records.<sup>2</sup> The research will use resource-based theory, which focuses on the importance of the technical, managerial and relational capabilities of an organization for leveraging available resources to maximize competitive advantage.<sup>3</sup> Resource-based theory illustrates the performance differences between organizations by analysing the way in which they leverage the resources available. Through utilizing resource-based theory, resources that are unique to cultures, societies and various types of organizations can be identified and articulated into a global model.

Risk management concepts will also be incorporated in the framework by analyzing the question of trust in relation to the amount of security, risk and exposure that an organization is willing to accept to achieve its goals. Current research and practice in the field of risk management offer both an operational and a social perspective on trust. Operationally, risk management concepts<sup>4</sup> have been increasingly applied to archival science to expand the understanding of risk beyond the loss of the primary object, or record, to also encompass threats, vulnerabilities and mitigations. Of particular importance to the survivability of records is the threat of technological obsolescence that was investigated in prior phases of the InterPARES project.<sup>5</sup> Socially, factors that contribute to the establishment or eventual erosion of trust are of interest to the study of risk management. The public is asked to trust governments and organizations while simultaneously being exposed to increasing evidence posted on the Internet detailing corruption, scandal and large-scale environment disasters.

Lastly, to design effective model policies that are applicable across a broad spectrum of organizations, cultures and societies, the project will draw upon design theory. As the policies developed will need to address challenges that arise from interaction with future technologies not yet imagined, the project will need to adopt an "argumentative process in the course of which an image of the

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<sup>2</sup> MacNeil, 2000; Duranti and Preston, 2008

<sup>3</sup> Alvarez and Barney, 2002

<sup>4</sup> Such as *ISO 31000 Risk Management – Principles and Guidelines on Implementation*.

<sup>5</sup> Duranti and Preston, 2008

problem and of the solution emerges gradually among the participants, as a product of incessant judgment, subjected to critical argument."<sup>6</sup> Thus the project will begin by taking into account design perspectives, not just in terms of how to utilize the theory, but through direct interactions with the developers of digital information technologies. A particular focus of will be on Human-Computer Interaction (HCI), as researchers and practitioners of this field design the interfaces that are used to create, store and access records over the Internet.

### **Methodological Approach**

Research of this nature necessitates a multi-faceted, diversified, and dynamic approach: multi-faceted in order to deal with the polymorphism of digital records produced and accessed using a myriad of digital devices; diversified in order to accommodate the varied requirements produced by different social, cultural, and organizational contexts; and dynamic in order to respond to the rapid pace of technological change, while accounting for current uses as well as future uses and expectations.<sup>7</sup> The project will employ a research methodology based on empirical observation (through case studies) generated through an ethnographic approach and surveys. To understand concepts like trust in the case studies, the project will use the general theory of social construction, building hypotheses upon a foundation of the findings from previous InterPARES research.<sup>8</sup> The project will focus on gathering, analysing, and interpreting data gathered from a diverse cross-section of organizations and institutions from across the globe in order to explore the nature of the trust relationships that exist between Internet connected parties, as well as the risks, weakness and fault-lines that are inherent in the storage and management of the records that exist 'in the cloud.'

The case studies and surveys conducted for this project will be carried out over a four year period beginning June 2013. At the conclusion of each study, the findings will be represented using activity and event models designed to provide an understanding of the situational realities and work processes that exist at each site both before and after changes suggested by the research team. Each modelling activity will be accompanied by diplomatic and archival analysis, digital forensic analysis, textual analysis, and visual analytics. Finally, comparative analysis will be used to generate a theory of what constitutes trust in networked environments that is capable of transcending juridical boundaries.

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<sup>6</sup> Ritter & Webber, 1973, p. 162

<sup>7</sup> Thibodeau, 2012

<sup>8</sup> <http://www.interpares.org>

## **Project Deliverables**

This project will generate new knowledge regarding digital records maintained on Internet connected resources and accessed through a myriad of digital devices. Such knowledge, developed by an inter-disciplinary team of international scholars and professionals, will produce new methods for identifying and protecting the balance between privacy and access, secrecy and transparency, the right to know and the right to forget. These methods can be used as the foundation for model legislation related to e-evidence, cybercrime, security and privacy. The research outcomes will be central to developing methods for the authentication of identity on the Internet and for protection against on-line fraud. By enhancing identity management, network security is also increased. Finally, the results will provide a sound basis for developing policy models, procedures and standards to manage records on the Internet; education modules for professionals and academic curricula for graduate programs; functional requirements and specifications for securing online records systems; and analytic frameworks that can be used to evaluate business models emerging from and only possible in the evolving Internet environment.

## **Collaborative, International Research Team**

The team of researchers working on this project comprise of universities and organizations, both public and private, from around the world with expertise in the disciplines of archival science, records management, diplomatics, law, policy studies, health informatics, journalism, information governance and assurance, computer science, cyber-security, and digital forensics. As an international, collaborative project, the teams are organized into five major groups: North American, Latin America, Europe, Asia and multinational organizations. Among the larger participating institutions are: National Archives of Mexico, National Archives of Brazil, British Library, European Commission Anti-Fraud Office, International Federation of Red Cross and Red Crescent Societies, International Monetary Fund, International Records Management Trust, Israel State Archives, National Institute of Standards and Technology, NATO, Renmin University of China, Mid-Sweden University, University of British Columbia, Government of British Columbia, State Archives Belgium, UNESCO, University College London, and University of Washington. Croatia is strongly represented in the European group with a research team from the University of Zagreb – Department of Information and Communication Sciences, Faculty of Humanities and Social Sciences (FHSS) and partners from the Croatian State Archives, the Faculty of Organisation and Informatics, the National and University Library, the Croatian Information and Documentation Referral Agency of the Government of the Republic of Croatia, FINA, the University of Zagreb – University Computing Centre, and Teched Consulting Services, Ltd.

## Conclusion

The goal of the project is to generate the theoretical and methodological frameworks that will support the development of an integrated network of policies, procedures, regulations standards and legislation that can be consistently applied across juridical boundaries in order to ensure public trust grounded on evidence of good governance, a strong digital economy, and a persistent digital memory. This project will focus on the relationship between organizations (both public and private) and their client groups (i.e. citizens, customers, students, etc.) and the degree of trust that clients can place on the records of these organizations that are created, stored or access from the Internet, as well as the level to which organizations are concerned about establishing and maintaining a trust relationship with their clients. This focus on the trust relationship will develop new knowledge regarding records kept on social media and in the cloud and provide new methods for determining the appropriate balance between privacy and access, secrecy and transparency, the right to know and the right to be forgotten in globally connected networks. The research will propose changes to existing legislation and infrastructure, develop model policies, procedures, and practices to store and manage digital records over the Internet, and create functional requirements for networked systems utilized by Internet providers.

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