

Digital Records and Disrupting Technologies

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In our information era, the abundance of data, the risks of misuse and destruction, as well as privacy and security issues makes it our main challenge to find ways to protect and preserve the records that are produced in our systems, which are becoming increasingly complex and vulnerable at the same time. Born-digital records are forcing new archival approaches to handle those complexities. From Google docs, blockchain, to the emergence of AI, new disruptive technologies are provoking dramatic changes on how to capture, preserve, curate, and share documents. The advancement of these technologies may have a fundamental role in the preservation of not only records but democracies as well. As Baron affirms, “public archives are increasingly in danger of being rendered inaccessible in light of the challenges posed by their hugely increased overall volume, coupled with the presence of sensitive content embedded within records” (Baron, 3) In other words, the importance of transparency, availability, and the integrity of the information are major challenges archivists are facing in the public sector. Payne continues “future citizen access to the e-records of 21st century governmental institutions stored in public archives is arguably in danger of being severely restricted” (Baron, 3) This situation has prompted ideas on how to overcome such challenge. Innovative ways need to be developed to make large collections of public records accessible to the public while preserving their integrity.

Considering the staggering amount of data that is been produced, AI is inevitably entering the realm of archiving. Algorithms can help in the process of selecting and retaining records. Search technologies using machine learning improve the capabilities of human archivists. However, this brings, according to Goudarouli, an additional challenge as of how to guarantee trust and openness. In his view, “The uncertain and unbounded nature of AI requires

us to entirely rethink how we preserve evidence of both the system, and the decisions made. Therefore, AI also requires us to rethink what the ‘record’ is in this context”. Once we relinquish to machines the outcomes, it becomes indispensable to provide a clear blueprint -hence, transparency- as of how those records are processed.

Another disruptive technology that is being evaluated and tested by records and archives management is blockchain. Considering that blockchain works as a decentralized accounting ledger, this technology seems to offer an effective way to keep data protected. In other words, the archived records processed today will be exactly the same at any time in the future. Blockchain -or any other Distributed Ledger Technology (DLT) for that matter, verifies that the record hasn’t been tampered. Nonetheless, distributed or decentralized ledgers carry intrinsically an additional issue. Digital records are often reprocessed. Software keep improving and old versions of word processors documents, for instance, may be transformed to user friendly PDFs. This transformation converts the original record into a different one, if not in content, at least in format and consequently “something cryptographically different to the original” (Goudarouli, 177) It will be necessarily, in this case, to create a clear procedure to guarantee the traceability of any manipulation of the record to ensure its validity, auditability, and integrity.

Moving forward, Olnes suggests that “close cooperation between experts and policy-makers is needed to develop governance by BC [blockchain] on the one hand, and to ensure compliance with the public values and societal needs for BC applications developed by other parties on the other hand” (Olnes, 359) It is within this balance that the ability to find and

use data in repositories and archives might be not only possible but increasingly efficient. Data accessibility and protection against tampering are the sources for transparency.

Tempting as it may seem to use blockchain for public records, there are certain aspects that need to be discussed and solved first. The first one -and arguably the most critical- is the lack of standardization. According to Piscini (from Deloitte's Report), a technology like blockchain "only makes sense if it is a shared concept" (101) Without collaboration, it is going to be an arduous task to coordinate multiple blockchains from a variety of entities. Communication between different technologies will be indispensable. The development of common standards is what let the Internet flourish, for that matter. The future of our digital records and archives will require the same cooperative spirit as well.

Secondly, there are some researchers concerned that the advent of quantum computing could endanger the security of the cryptographic encryption that currently exists within blockchain. Nonetheless, others report that the same quantum computing will also provide stronger encryption. In any case, it is a factor that will need to be evaluated soon before committing to blockchain or any similar ledger technology.

Finally, it all comes down to the issue of trust. The design of digital archives and records management systems must be built on the premise that they support and maintain accessible, untampered, trustworthy records.

However, trust can be interpreted in two ways. The first one, perhaps the most obvious, refers to the unaltered preservation of the records. According to Findlay, our modern society, since the inception of the Internet, has shifted to a more participatory culture leaning on peer-to-peer networks. Archivists are not different that the society in which they live so they

might be also prone to use networks for handling archival repositories. Digital preservation has always been concerned with trust and the best-practice standards. Current trends, in which networks and not hierarchies are becoming the norm, will continue to change the way recordkeeping technologies are used. Findlay summarized it by saying that “in such [networked] systems, records are recorded as authentic by virtue of (machine-enabled) community consensus rather than through control by an institution of economic or state-sanctioned power”(185) A networked society encourages participation and accountability -the great supporters of democracy-. The latter brings another aspect of trust which relates to the biased character of some current collections. A Decentralised Autonomous Collection’ architecture, proposed by Van Garderen, suggests assessing collections and archives and looking for ways to make them more inclusive. According to this author, collections in the past have been tainted by “institutional privilege” as well as “professional tradition and inertia”. Innovative networked technologies could remedy this by providing minority groups a fair representation in archives.

Decentralized technologies, like blockchain or other future possibilities, could be the tools by which the public would gain access to huge amounts of digital records that comply with two fundamental objectives of any recordkeeping or archive repository, transparency and openness.

In words of Goudarouli, we may “anticipate a future that involves an increasing reliance on algorithms to aid our processes, from preservation through to presentation” Time will tell how those decentralized technologies will develop and establish their presence in the world of recordkeeping and digital archives.

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