Collaboration as the keystone for successful management of digital records.

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ABSTRACT
This proposal considers the key role of collaboration between stakeholders, primarily in electronic records but also digital research data, to ensure that their authenticity and integrity can be verified and ensured for the life-time of the records, be that five years, fifty years, a hundred years or more.

Proposal type
Individual paper. This brief proposal will form the basis of an extended paper on the same topic.

Keywords
Digital preservation, archiving, and curation; records management.

1.INTRODUCTION
The use, management, and preservation of electronic records is no longer a new concept. Electronic records are created in Higher Education (HE) and other institutions in huge quantities and are used on a daily basis by a wide range of stakeholder-groups. Commercial records management solutions are now widely available, albeit at a cost, and research into long-term technical preservation approaches has taken place across the world. Yet despite this, the all-too-common scenario is that electronic records are printed out to paper for management and preservation. The reasons for this are numerous, and such an approach denies future re-users the functionality and original digital experience of the original record-creating environment. This paper explores the challenges in electronic records management that lead institutions to rely on print versions of electronic records, and argues that although the technical challenge is a significant one, the cultural and organisational challenges that accompany it are no less significant and can only be adequately solved by input and collaboration from all stakeholders in the record life-cycle.

2.IMPORTANCE OF DIGITAL CURATION
Scientists, administrators, researchers, and other groups create increasingly vast amounts of digital records. The long-term integrity and preservation of these records in a usable form is at risk because of:

- Technology obsolescence

- The fragility of digital media

- The absence of Good Practice examples for data creation and documentation.

Digital Curation offers a framework for addressing these risks.

Digital curation is a fairly new concept in the field of digital archiving. In the UK, it is spearheaded by the UK Digital Curation Centre (DCC), which supports UK institutions that store, manage, and preserve data (especially research and record-keeping data) to help ensure its enhancement and continuing long-term use. Digital curation addresses not only the issues of archiving and preservation, but considers the active management and appraisal of data and records over the entire life-cycle. Such involvement is necessary because digital records are often created in a highly ad-hoc manner and are easily mutable; their content, context and form are therefore at risk in a way that was not an issue for paper-based materials. Explicit measures must be taken at every stage to ensure that records remain authentic and their integrity assured, throughout their active and archived life. Given the range of stakeholders with input into the creation, management, and preservation of electronic records, this requires input and collaboration between all parties with implicit or explicit record-creating or curating responsibilities.

3.SPECIFIC CHALLENGES
The main challenges in curating digital records and data have until recently been perceived as mainly technical: the fast pace of developments in ICT means that the technology used to produce digital records and data quickly becomes obsolete, and if the software used to create and accurately read files is 'de-commissioned' and no longer available, then access to the data and content – the records - stored in the files is at risk. Similar risks are present for storage media: not only do popular storage media formats change and hardware devices to read older types of storage media become unavailable, but the rate of bit degradation on digital storage media is often significantly faster than initially anticipated. Such degradation may not be uncovered until it is too late and the data is lost. Significant research into these issues, for all types of digital data and records, has now begun to yield real solutions and ways in which obsolescence and deterioration can be averted, the integrity of the files maintained, and the so-called 'digital dark ages' avoided.

Technical challenges are, however, only part of the problem. Massive organisational and cultural challenges persist that continue to threaten the authenticity, integrity, and long-term availability of usable and reliable digital records. These challenges arise from the sheer number of electronic records that must be managed and the relative positioning of records- and data-management within organisational infrastructure and project goals. User-perception of electronic records as inferior to their paper-based counterparts, failure or inability of traditional record-keeping infrastructures to cater for the requirements of electronic records,

the absence of financial investment and policy support from top-level management, and, most importantly for our considerations here, a lack of collaboration and communication between stakeholders in the curation process, are all important factors. Many of these challenges have not been sufficiently addressed by the research community as their importance has only recently been identified, although initiatives from, for example, the DCC [1] and the University of Kansas [2] are beginning to fill the void.

4.SHARED ROLES & RESPONSIBILITIES

Different stakeholder groups in HE and other institutions have responsibilities at different stages of the curation process. As explicit measures need to be taken at every stage of the life-cycle to ensure that records can be considered authentic and maintain integrity over time, communication and collaboration between these groups is vital if they are to be aware of, and fulfil, their responsibilities. The level of collaboration thus required to maintain the authenticity, integrity, and persistence of digital objects is hitherto unforeseen in the field of records and information management, and although this need to collaborate is itself a significant hurdle, it is not insurmountable

If we consider the basic stages of the record life-cycle and the activities within to be creation, active use, appraisal/selection, transfer, archiving & preservation, access & re-use, and possible disposal, and map them against the most likely immediate user stakeholders and their responsibilities at specific stages of the life-cycle, the table opposite is produced. This is of course a generic appropriation of roles and responsibilities; individual institutions must apply their own organisational infrastructure and requirements to the tasks identified in the table body. The intention of the table is not to limit such tasks, but to illustrate the interdependencies between the groups at different stages that make communication and collaboration between the different groups so vital to the success of an electronic records management strategy.

Further details on the specific responsibilities and how collaboration between groups increases compliance, efficiency, and success, will be presented in the seminar.

5.CONCLUSIONS

The 'print-to-paper' scenario results largely from a lack of digital experience in institutions with a responsibility to manage and preserve records and data, a lack of trust in intangible digital objects, and a lack of recognition regarding the level of cooperation between different stakeholder parties that is necessary to ensure the persistence of digital records. Digital records management is complex, but that is no reason to rely instead on print-outs. As technical solutions develop, trust will grow and experience will be gained. The final key to the solution is the development of collaborative relationships between all parties with responsibilities for creation, management, and preservation of digital records and data. Given the complexity of the relationships and the interdependency between the activities for which different groups have responsibility, it is clear that only by collaborating together on the tasks can a successful solution be implemented.

6.REFERENCES

[1] The DCC is researching the specific organisational and cultural challenges of digital curation as part of its ongoing research programme.

[2] Staff from the University of Kansas have published at least two ECAR research bulletins that address organisational and cultural issues arising from their attempt to develop a holistic approach to digital preservation. See   . http://www.educause.edu/ResearchBulletins/1007

	Manage-ment	*Creators*	*Curators - RM*	*Curators - IT*
Creation	Policy on acceptable use	Good practice creation	Good practice creation guidelines	Policy on acceptable use
Active Use	Policy on responsibili-ties for personal records/data management	Good practice storage and filing	Good practice storage and filing guidelines	Policy and practice on infrastructure provisions
Appraisal/ Selection		Making desktop records/ data available to curators	Policy and guidelines on appraisal/ selection; Advice and guidance to users; Training	
Transfer		Enabling transfer from a 'push' perspective	Effecting transfer from a 'pull' perspective	Providing technical transfer infrastructure
Archiving & Preservation	Policy on data/records archiving & preservation; allocation of finances for archiving/ preservation		Developing archiving/ preservation requirements	Providing archiving/ preservation infrastructure & functionality
Access & Re-use	Policy on data/records access & sharing		Developing metadata-enabled access	Providing reliable access whilst protecting archived records
Possible disposal	Policy on disposal	Desktop disposal of non-transferred records	Identifying retention schedules	Disposing of redundant records/data; deletion of backup data