Digital Records Curation Programme (DRCP) - English Version

Week 6 – Class: Digital Preservation

Learning Outcomes

At the end of this class, students should be able to:

- identify the threats to the survival of digital records
- understand the strategies that can be used to mitigate those threats
- create digital asset registers
- know where to look for digital preservation tools
- apply the DPCMM to an organisation

Lesson Plan

1. Introduction

Ask students to summarise their learning from the previous class.

2. Group Work – Legacy hardware (20 – 30 minutes)

If possible, obtain an obsolete desktop computer or laptop, external floppy disk drives, tape decks, and / or obsolete storage media such as 8", 5¼" or 3½" floppy disks. (Over time, it would be useful to collect a range of such hardware and storage media, for teaching purposes). Present the machine(s) and storage media to the class and ask them how they would retrieve and migrate any files on the hardware or storage media so that they could be viewed on a modern device. If no hardware or storage media are available, ask the students to imagine a computer from the 1980s, perhaps one they saw in childhood or have since seen in films. You might show them a photo of such a machine.

Allow them time to think through the issues as a group, inspecting the objects and discussing the issues. When the students are ready, ask them to explain what they would do to retrieve the files. The ensuing conversation should uncover the following issues:

- Technology obsolescence. This is the first and most obvious problem: the machine or storage media has been superseded by new machines or media, and is no longer in active use. The risk here is that records have not been migrated to new systems or devices.

- File format obsolescence. Will any files that might be on the machine or storage media be readable on new devices? How would the students migrate the files to new file formats while still retaining the significant properties of the records?
- Human error. What steps can students take to ensure that they don't damage, alter or delete any records during the process of retrieval and migration? What are the risks connected with human activity?
- Media decay, damage or loss. The storage media may decay over time, may be damaged by the same things that damage hardcopy records (fire, flood, etc) or may be lost through neglect, accident, theft, etc.
- Bit rot (changes to bits in the bitstream). Files can become corrupted in numerous ways, including from hardware of software failure (see below) or radiation. It may be that bit rot has already occurred in the files on the machine or media, or that it occurs during migration.
- Hardware failure. Can they turn the machine on? Is it a matter of missing cables? If so, how might they find a replacement? If it is about the machine itself, will it be possible to repair the machine? How? How much time and money should be spent trying? This ties in to discussions about appraisal and the digital 'black hole'.
- Network or service failure. How will the files actually be moved to new devices? Can the old machine connect to the internet, or will files have to be moved manually, on removable storage media? What are the risks associated with these approaches?
- Software failure. Does the software needed to open and render the files still work? Do they have the disks to run or re-install the software? This point is an opportunity to discuss software preservation and emulation.

3. Lecture – Terminology and Digital Asset Registers (20 minutes)

Use the DRCP slides for this class to provide a short lecture on terminology and then introduce digital asset registers.

4. Group Work – Digital Asset Registers (20 minutes)

Distribute the digital asset register templates (you will need the Excel spreadsheet *Digital Asset Register.xlxs* available as part of the DRCP materials) and ask the students to work in groups to identify some digital assets they've encountered (minimum three). Ask them to complete the Digital Asset Register template, assigning risk values.

5. Lecture - File Formats, File Management and Management Activities (20 minutes)

Use the DRCP slides for this class to provide a short lecture on file formats, file management and management activities.

6. Individual Work - COPTR (10 minutes)

If computers and an internet connection are available, ask students to explore COPTR http://coptr.digipres.org/Main_Page They should get a sense of the range of

tools that are available for use. If computers or internet connectivity are not available, ask students to look at this resource when they are able to.

7. Lecture – DPCMM (5 minutes)

Use the DRCP slides to briefly introduce the DPCMM.

8. Group Work – DPCMM (20 minutes or longer if possible)

Ask students to work in groups to apply the DPCMM to an organisation that one of them has worked for. The students should generate a score. Ask the students to explain how this provides the basis for planning a digital preservation strategy.

9. Conclusion

Summarise what you have covered in class in relation to learning outcomes for this class.