Feedback on the proposal for a Workshop on Collecting Historical Software

Randall Neff, Ph.D.

March 10, 2006

This is comments on the slides presented at the SCC meeting on Feb 15, 2006 and the distributed paper, “The Attic and the Parlor...”.

Collecting and displaying computer software is an unsolved problem for Museums and historians, both because software is so new and it is so ethereal. Paper listings or magnetic bits or punched holes are one manifestation, but they are not the real thing. Software is the executing instructions in a computer, shuffling bits around, performing input and output, and usually solving some real world problem. In the same way that photographs or descriptions of ballet are not the essence of ballet.

To display software, you must execute it; that requires the correct input/output devices, the correct computer (either real or virtual), the correct documentation, and the correct software environment of operating system, drivers, libraries, etc. To collect software, you need to collect the bits, and the input/output devices or their descriptions, the computer hardware or complete specification, the documentation, the operating system and other software bits, and the loading and execution directions. And everything at the correct version.

This is very hard. Much harder than just a room full of punched cards, punched paper tape, floppy disks, disk platters, paper documents, and magnetic tapes.

The standard Museum model is visually attractive things displayed in cases to be looked at with a tiny amount of textual description. But computers are interesting because of what they did; what problems they solved; how they aided or perverted the world. With the exception of the Crays, most computers are just painted metal boxes. Computers are not passive objects in a stagnant display.

And it is even worse with software. Here is a roll of paper tape, with holes punched in it, that started a really huge corporation. No, the bits on the tape, running as a program on a computer, was very useful; the usefulness started the really huge corporation.

Division of Interest

Here is a rough division of the people that may be interested in collecting and displaying software:

- People who wrote the software. These are the experts.
- People who used the software.
- Enthusiastic fans of the software. They restore dead computers and write virtual

machines, become self-taught experts, and actively collect that software, build and maintain websites.

- Historians and Museum Staff: observers with superficial knowledge of particular software, but with a broad view of all of the software.
- Interested, curious visitors, some of which may belong in the first three groups.
- Kids that might get interested in computers and technology.

Minor Proposals

CHM needs to move from a passive software collecting role to an active exploration treasure hunting mode.

1. Collect information from the Experts. This would include oral histories, scanning their significant documents, copying their bits, asking for donations, etc. For example, the Kolsky/Stretch collection.
2. Using the model of the HOPL conferences, encourage or host conferences in other areas: operating systems, graphical user interfaces, databases, distributed software, etc. Use the conferences to ask for donations of material.
3. Assist in writing histories of particular areas of software as a driver for collecting. The current Corporate History project is one example.

The Major Proposal

Set up the “League of Extraordinary Amateurs” to coordinate, encourage, inspire, and guide all of the Enthusiastic Fans that actively recreate the environments to actually run software. Sort of like O'Reilly's **Make** magazine and their forthcoming Maker Faire in April. (http://www.makezine.com/faire/) Act as cheerleader and coach, guide and mentor. Provide suggested (not dictated) guidelines about scanning, saving bits, metadata. Then the “attic” concept would be a active mirror of this activity and provide server space.

Examples include: Ed Thelen's website, Al Kossow, the1401 restoration project, the PDP-1 restoration project, and numerous emulator / virtual machine sites.

The short term goal would be to encourage all of the saved bits, documentation, schematics to be archived at CHM, in standard formats, with standard metadata, using an open source database and content management system. This would require selecting standards, setting up the database and content management, writing handbooks and web based classes.

The more ambitious goal would be to encourage all of the virtual emulators to be ported to a standard hardware and software platform that CHM would provide as servers. CHM would become the focus for emulation and virtual machines. The CHM goal would be to build an active archive of executing software.For example, if CHM ever decided to have an exhibit of Graphical User Interfaces, it would be possible to have a dozen running examples on exhibit.

Harnessing the Collective Experience of the Computer Community

The history of computers is huge, really, really huge. About 60 years long for digital computers and an enormous number of different machines wide. It takes years to become a programming expert on one machine and years to become a hardware / restoration / emulator expert on the same machine. Some technologies had a definite cutoff date. If a person is too young, he / she has never used a slide rule, a key punch, paper tape, a model 33 Teletype, a IBM Selectric terminal, a black and green dumb terminal, or a Tektronics storage graphics display. And have never experienced loading disk packs, threading mag tape, pen plotters, chain line printers, punched card readers, or any other standard I/O devices.

With the enormous amount of knowledge that has accumulated, it is obvious that a small staff of youngsters will not be experts in any specific area. This is clear in the restoration projects: the 1620 team had to learn as they progressed; the PDP-1 had a few original users and new learners; and the 1401 has a number of original repair guys and new learners.

To capture software, CHM will also have to capture the expert's knowledge and experience, and make it available to enthusiastic new learners, individuals that want to restore or emulate or program old computers. And do it before all the experts die off.

Conclusion

The “League of Extraordinary Amateurs” would be an organization that would coordinate, encourage, guide, inspire, and drive the collection of software as an active, executing essence. Old software, running on restored or emulated computers, would be an active, interactive thing to exhibit, not a physical card deck, punched tape roll, or mag tape.