FCoP Scenarios for Software (Re)Use and Access - GeorgiaTech

Jan - Feb 2019

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Timeline:

- (January 7 - January 11) Brainstorm Scenarios for Use & Access
- (January 14 - January 25) Gather User Data
- (January 28 - February 1) Data Analysis and Preliminary Observations
- (February 4) Cohort Monthly Call - Scenarios for Use & Access Reports

Purpose:

The purposes of this exercise are to:
- Articulate potential software (re)use and access scenarios
- Inform/Verify your assumptions regarding (re)use and access scenarios by surveying a designated user

Instructions:

1. Complete 1-5 scenarios for use and access using the prompt below.
2. Identify 1-3 users whose use cases you believe may correspond with the scenarios for use and access that you articulated.
3. Ask participants to share 15-20 minutes of their time to reflect on their different needs related to software curation and preservation by completing the questionnaire.
4. Participants complete questionnaire

5. Analyze participant responses to determine the distance between your participant reflections and the scenarios for use and access driving your interest in software curation, preservation and emulation. Reflect on your findings.

Detailing your scenarios for use and access:

Actors	Goals	Resources	Challenges	Anecdotes for this use case
Type of stakeholder or user involved in the use case.	What does the actor want to do with software or software-dependent data?	What resources are available to this actor or these actors to achieve their goals - what resources do they need?	What challenges could your users face in attempting to accomplish their software reuse goals?	Any real world scenarios that you have witnessed or been involved in that informed your articulation of this use case.
Donor of software or hardware in retroTECH collection (not creator, just donor)	Architect who donated his hybrid collection (including software he used) to the GT Archives wants his old born-digital CAD files to be accessible to researchers in the original software	Knowledge of their own collection -- the files they created and the software they used to create them	Working with GT Archivists to identify which files and which software from within the whole collection should be made accessible in this "special"/enhanced way (using emulation)	GT Archives is working with a donor who fits this scenario
Creator of software or hardware in retroTECH collection	Student who coded Game Boy Advance game wants to include a link to the game (and her oral history about it) on her resume	Link to her game and oral history	Not knowing if the link will be persistent over time; telling a story in the oral history that is interesting to different relevant audiences (e.g. not just other students and researchers but also prospective employers)	Students in the CS class retroTECH Online is partnering with
GT Educator User	Design a course-integrated assignment about software history	Knowledge about software history; catalog of the software and software-dependent data available	Software relevant to their specific class topic might not be available; lack of time to explore and	retroTECH often partners with faculty members like this

		for use in retroTECH Online; sample assignments; instructions for self and students to use retroTECH Online	understand retroTECH Online	
GT Student User	Complete a course-integrated assignment about software history	Instructions for the assignment and how to use retroTECH Online; screenshots and/or videos of their use of retroTECH Online to include in assignment; citations for software and software-dependent data used in assignment; GT authentication for access to software with IP restrictions; way to share their assignment with others in the retroTECH community (upload on retroTECH Online or present about it, etc.)	Some software may only be available in retroTECH Online on workstations in the physical retroTECH lab space (e.g. because of "reading room use only" IP restrictions), so student may have to schedule their visit or compete with other students for access / appointment	retroTECH often works with students like this

Software inclusion criteria mentioned in our original proposal:
- software developed at Georgia Tech that provides significant evidence of innovation on campus;
- software that is available on the vintage computers in the retroTECH Lab, to facilitate comparisons of emulated software with software running on original hardware;
- software that facilitates research access to collections from Georgia Tech's Special Collections and Archives (e.g. architectural modeling software) multiple versions of one common and long-standing software title, to enable users to experience its evolution over time;
- software that is useful for rendering, migrating, and bringing to life personal digital archives;

Stakeholders used for retroTECH User Stories:

Role / Stakeholder Name	Role Definition
Donor of software or hardware in retroTECH collection (not creator, just donor)	Someone who donated materials (software, hardware, etc.) to retroTECH
Creator of software or hardware in retroTECH collection	Someone who created the materials (software, hardware, etc.) in retroTECH collections
Library IT	Employee of the Library's IT department who will maintain retroTECH Online in the future
Prospective GT students	Someone outside GT who may learn about retroTECH Online when considering attending GT
Oral History Participant	Interviewee for an oral history
GT Educator User	GT professor using retroTECH Online for teaching or their own research/interest
GT Student User	GT student using retroTECH Online for classes or their own research/interest
External Researcher	Someone outside GT who may want to use retroTECH Online for teaching, research, or personal interest
retroTECH Online Team Member	Member of the project team creating retroTECH Online (us)
FCoP Cohort Member	Member of the FCoP cohort from another institution who may want to know about retroTECH Online

Emulation Journey Maps Created in 2016:

	User & Goal	Entice	Enter	Engage	Exit	Extend
Experience 1: Using the lab to access information from outdated software.	Our user is a faculty member in possession of some information that they need to access but do not have the appropriate program to do so because it is exclusive to an outdated OS.	The faculty member has heard of the retroTECH lab's digital forensics capacity by word of mouth or from retroTECH promotions at school-sponsored events. The faculty member contacts the lab and sets up an appointment	The faculty member arrives at the lab and is greeted by the lab overseer, who engages with the faculty member to determine what virtual machines and programs need to be used to acquire the desired data	The lab overseer walks the faculty member through booting the correct virtual machine and program(s). If the data being retrieved is able to be converted into a more current format, the lab overseer will help the faculty	The faculty member has retrieved the information necessary and can now carry on with whatever personal project needed the information. Before the faculty member leaves, the lab overseer directs them to informational	The faculty member is offered a follow-up survey to provide input on what more retroTECH could be doing to help people recover and archive their digital materials.

		to come to the lab and retrieve the information (s)he needs.		member convert their data into a current format.	materials about personal digital archiving and emulation, to promote digital archiving.	
Experience 2: Student needs to research an old video game such as Zork or Myst for a school project.	Students in an LMC course are doing a project for class that requires some extensive access to old video games or some other digitally-based media.	The students are directed to the retroTECH lab by their professor and, since the entire class is working on a similar project, the group schedules an appointment to visit the lab and arrives at the appointed time.	The students arrive at the lab and fill in the lab overseer in on what game/media they are planning on researching. The lab overseer sees them to the emulation terminal and boots up the appropriate program.	The students may conduct their research in the lab if they choose, but before conducting their research, the lab overseer shows students how to set up emulators of their own and may even provide a distributable virtual machine with the desired game so that the students can conduct their own research outside of the lab.	The students leave with informational material on setting up emulation of their own, information about PDA and (possibly) distributable emulators.	The lab overseer reaches out to the professor in question and offers to take a mobile station to the class to educate their students on PDA/Emulation.
Experience 3: Student(s) have some amount of time between two events and are looking for a place to stop in at for that time.	Students are in the vicinity of retroTECH and need to pass some time between two classes.	The students happen to be passing time during the retroTECH lab's open hours. They've heard that the retroTECH lab supports retro gaming during open hours and decide to stop by.	The students enter the lab and are greeted by the on-duty lab overseer, who asks what they're interested in doing here at the lab. Hearing that they've just visited to try some old games, the overseer directs them to the emulation terminals and helps them boot the games they want to play.	The overseer introduces the students to the programs they're using as (s)he sets them up with games and explains that the emulators are public domain and that students can set up emulators of their own.	When the students are done and start to leave, the lab overseer provides them with printed material on starting a personal digital archive.	The students had a good time playing games at the retroTECH lab and are interested in setting up their own emulators to play games on their own time. They return some time later to attend a workshop.
Experience 4: Students in an LMC class are learning about CD-ROM art	Students in an LMC course are learning about CD-ROM art and need to	Because this is a relatively small assignment, it is reasonable	The students arrive at the classroom, where the retroTECH cart	Students take turns on the mobile cart, taking notes about the	At the end of the class, the staff member takes the cart and leaves.	retroTECH contacts the professor of the class and thanks him for

and spend some time on a visiting mobile cart to experience it first-hand	try out some such programs to write about their experience.	for the students to try their program on the mobile retroTECH cart, which visits their class on a day agreed upon by their professors.	is already set up. The cart and retroTECH staff member's presence is unusual and catches the attention of the class.	experience. While a student is at the cart, the retroTECH staff member talks to other students about the importance and process of PDA.	The students were kept interested and engaged by the content used on the cart and will spread the word about retroTECH.	the opportunity to collaborate. retroTECH offers to come again for another course and asks for input on other services to provide and programs to archive.
Experience 5: A local community library wants to set up a PDA program and software archive, but doesn't know where to begin.	A local community library wants to help the people in their community curate their digital legacy and to provide access to old software, but doesn't know where to start.	retroTECH has been in communication with local libraries for some time, to keep open the possibility of developing partnerships and collaborations.	The library approaches retroTECH and sets up a time for a google hangout to talk about setting up their own PDA program/ digital archive.	retroTECH staff members offer useful information in the meeting and lay out a sort of "skeleton" for how they set up their own program for the local library to emulate.	The meeting ends with the library having developed a rudimentary plan with the retroTECH team for setting up PDA.	The retroTECH staff set up a follow-up meeting to see how the peer library is handling setting up their own program.
Experience 6: Student research using online services	Students in a History of Computing course have been assigned to write a paper on how the windows OS has changed over time and need first-hand experience with old versions of windows to write about.	retroTECH has been building partnerships with other programs around campus. Students are told at the beginning of the assignment that they can obtain virtual machines for old versions of windows from retroTECH online.	Students access retroTECH's website and navigate to the virtual services page, which includes the downloads and walkthroughs for setting up the virtual machines.	Students download and install their distributable virtual machines, as per the instructions online.	When the students have successfully unpacked and set up their virtual machines, they simply close out of the retroTECH website and explore the old programs on their own	Students are made aware of an online survey to provide feedback on how retroTECH could improve its online services later along in their course.
Experience 7: Use for distributable virtual machines/softw are packages	A local researcher in the area of history of computing needs access to old operating systems for her research.	Through retroTECH's involvement and partnerships with other local entities related to the history of computing, the researcher has heard of retroTECH and approaches for help with getting access to old computer systems.	The researcher can't find time to personally travel to the retroTECH lab, so her contact in retroTECH directs her towards retroTECH's virtual services page.	The researcher's retroTECH contact walks her through downloading and setting up one or more of retroTECH's distributable software packages, including virtual machines and popular programs for use with them.	The researcher verifies that her virtual machines work properly and then closes out correspondenc e with the retroTECH contact.	Some time after helping the researcher with getting set up with virtual machines, the retroTECH contact contacts the researcher again to follow up and make sure that everything is still working correctly.

Questionnaire Template:

Scenarios for Use and Access Creator/Researcher Questionnaire

1. For what purpose(s) do you create/use/reuse software for? Check all that apply.
   - ❏ To validate or test existing claims
   - ❏ To generate a new research outcome
   - ❏ To document or assist in the research process
   - ❏ As an historical artifact
   - ❏ To provide or recreate an experience
   - ❏ Other_____

2. What function(s) do you create/use/reuse software for? Check all that apply.

   - ❏ Replication/reproducibility/validation
   - ❏ Research outcome
   - ❏ Aggregation
   - ❏ Computation
   - ❏ Migration
   - ❏ Artifact
   - ❏ Other_____

3. What documentation should be collected related to how you create/use/reuse software?

   - ❏ User manuals
   - ❏ Technical specs/requirements
   - ❏ Bugs/Testing Protocols
   - ❏ Correspondence
   - ❏ Promotional material
   - ❏ Publications
   - ❏ Other_____

4. For software you have created/used/reused, what components do you consider as essential to retain?

   - ❏ Hardware / peripherals
   - ❏ Libraries
   - ❏ Dependencies
   - ❏ Programming languages
   - ❏ Algorithms
   - ❏ Environments
   - ❏ Documentation

5. What was the storage location for the software you created/used/reused?

- ❏ Removable media (diskettes; CDs; USB drives)
- ❏ Computer hard drive
- ❏ Hosted on website (github; research group homepage; cloud storage)

6. Which institutional stakeholders are involved in how you create/use/reuse researcher software? Please check that all apply

- ❏ Software developer
- ❏ Librarian
- ❏ Copyright officer
- ❏ Archivist
- ❏ Curator
- ❏ Research data manager
- ❏ Steward
- ❏ Publisher
- ❏ Deployer
- ❏ Other_____

7. On a scale of 1-5, please rate your level of agreement with the following statements:

1 – Strongly disagree 2 – Disagree 3 – Neither agree or disagree 4 – Agree 5 – Strongly agree

____   It is important to me that the provenance of this software has been fully documented.

____   It is important to me that I will be able to access this software in the future.

____   It is important to me that others can easily discover this software in the future.

____   It is important to me that I can replicate my previous experiences with this software in the future.

____   It is important to me that others can use this software in the future.

____   This software offers a unique experience.

____   I want research libraries to steward this software.

____   I am comfortable with the idea that this software may be updated or enhanced in the future.

Data Analysis and Discussion Questions:

<u>Internal Scenarios for Use and Access</u>
1. **As you were developing out more verbose scenarios for use and access, what types of internal questions arose?**
2. **Was it difficult to choose which user scenarios to articulate, or was it relatively simple? If difficult, what might make that process easier?**
3. **Did you have some existing source of user data to inform these scenarios, and if so, what are the sources of this data?**
4. **What was your thinking/criteria/basis for prioritization if you had numerous scenarios for use and access?**

<u>Researcher/Creator Questionnaire</u>
5. **Were you surprised by any of the questionnaire responses from your users?**
6. **Did you find any patterns across user responses?**
7. **What new questions did these responses raise for your team? What additional information do you want or need to know from your users in order to inform internal policies, requirements and workflows for software preservation and emulation?**