(PGA) Use Cases (July 24, 2013)

The following use cases are intended to aid the design of the ecosystem of tools for the Preference for Global Access (PGA) and Cloud for All applications. The goal of these tools is to allow any user to easily activate the settings and preferences they need to access the device they are on and the information they desire. Since users needs are varied and far-ranging, the more flexible and adaptable these tools can be, the better they will achieve the goal.

Notes from Jutta:

Our primary goal in this project is to figure out ways to enable diverse users to discover and refine their understanding of what works for them, in different contexts, for different goals, and declare that in a machine actionable way. Part of this goal is to explore needs and preferences that are currently under-served such as cognitive access.

Important areas to explore are how do we present different discovery experiences for different users and different goals? What would it look like for a kindergarten student and their teacher, for a new resident of an assisted living facility, for a new immigrant who has limited literacy, etc. What would an independent experience look like vs. an experience with a therapist of care giver helping? How do we integrate and verify the choices we can glean from interfaces or experiences the user identifies as optimal? How do we enable the user to refine their choices?

Dani

Dani loves watching Toronto Blue Jays baseball with her mom and dad, playing fetch with her Golden Retriever Bud, and any kind of game (particularly Connect 4). Dani just turned 18 and just finished school. She is about to move out of her parents' house and into an assisted living and rehabilitation center. Dani is excited about moving out of Mom and Dad's house, is excited about meeting new people at the center, and is a bit nervous about all the change.

Dani experienced a traumatic brain injury when she was 6. She's been going to a special ed school where she had a team of teachers. Her teachers would work with her on a computer set up by the school. The computer had some settings that helped Dani see, read, and understand the content. Though she has some trouble seeing on the right side due to a peripheral vision field cut, Dani enjoys looking at pictures. Her teachers adjusted her lessons to reflect this, so Dani did mostly picture-based learning.

Dani's other activities at school were also tailored to her needs: she is able to read 3-letter words and her vocabulary is at an approximately grade 3 level. Dani is pretty shy about talking because some people have trouble understanding what she's saying, so her teachers would often encourage her to sing. Dani knows almost all the words to "Happy Birthday," and she likes to sing and move her body to the sound – it helps with some of the spasticity in her arms and back, and it makes her happy.

When she moves to the assisted living center, Dani will have a TV and a computer of her own in her own room. Those devices will be different from the TV Dani is used to watching ballgames on and the computer she had configured for her at school. Dani can't take those devices or settings with her so she's going to have to learn a new system. That's stressful, because Dani has some trouble focusing and trouble remembering things like order-of-operations (executive function) tasks.

The assisted living center balances structured therapies (OT, PT, SLP, and computer lab) with recreational activities (cooking class, music class, and outings) and encourages residents to be as independent as they're able to be. Dani will be encouraged to make some decisions. Because the center isn't as structured as Dani's school was, she's going to have more opportunities to decide how she spends her time – how she structures her days and weeks. Dani plans to go home on weekends to visit her Mom and Dad, and Bud too.

Vignettes:

1. Dani in "computer lab" working with a therapist to setup GPII
2. Dani back in her room applying GPII to her in-room computer
3. Dani playing a game (tool 2?)

Possible Needs and Preferences

- slowed down cursor/controls
- text to speech
- large buttons (large target area)
- docked magnification (follows cursor)
- increased allowance for response time
- ability to control speed of audio and video playback
- reminders/breadcrumbs
- globally applied preferences (for all of her favourite games)

Notes:

- this use case could demonstrate the ‘import’ function.
- music therapy has been shown to benefit speech, concentration, physical, and emotional health.
- Links
    - http://www.mtabc.com/page.php?54
    - http://physical-therapy.advanceweb.com/Features/Articles/Music-Therapy-and-TBI.aspx
    - http://www.dana.org/news/cerebrum/detail.aspx?id=26122

include?

- wears a helmet and is in a motorised chair
- uses a TV remote and joystick on her chair
- has a short attention span
- processes information slowly
- has trouble remembering things
- uses her computer to play games

Anne

- 75 years old, lives with her daughter
- experiencing the onset of dementia
- short-term memory comes and goes
- low vision
- gets confused easily
- has never used a computer
- wants to use a computer now to help her stay organised (to use a calendar and reminders) and also to communicate with her grandchildren through email
-

Julia

Julia loves to travel. She's planning a trip to Madagascar right now, just got back from a summer trip to Michigan and Maine, and last year went skiing in Maine mid-winter after a trip to Uganda where she visited the gorillas in Bwindi Impenetrable Forest NP. Julia is originally from Michigan but has truly made the planet her 'home.' She has spent the last 40 years calling Old San Juan, Puerto Rico home base. She lives in a penthouse apartment with sea breezes coming in from all directions. In the evenings she likes to sit on her porch catching the breezes alongside the many potted tropical plants and trees that happily call the porch home. Julia plugs her iPod into the dock speaker, turns on the gourd-covered stringed lights that outline the awning, and kicks back. She sips a Scotch while she watches the gourd light shapes blur into the dark blue of the nighttime sky.

Old San Juan has changed a lot since Julia first arrived as a sun-loving 30-something year old. And Julia has experienced much of that change through shapes, contrast, and from the tip of her white long cane. Julia has never had good vision, and now she has no vision out of her left eye and can see some contrast and some shapes out of the right.

To add:

Hasn't been trained to use technology or ATs. Someone showed her a screen reader once but the learning curve was too steep for her to continue to use it; abandoned AT.

- travels a ton – can't use the back-of-seat monitor at all
- can't use airport kiosks
- can't buy tix online – uses an agent whom she trusts
- is worried about using the iPhone in-flight – doesn't know what is acceptable use
- uses a Windows 7 machine with Magic
- uses VoiceOver on her iPad and iPod Touch and iPhone
- got scammed at the ATM years ago because she was forced to trust the person in front of her who continued to withdraw money after she left
- can't stand the extra information from screen readers (punctuation, headings, etc. – wants it to be simpler)
- uses high-contrast (white on black) – doesn't seem to use magnification or doesn't know about it – likely the latter
- listens to Library of Congress audio books
- uses Audible
- knows there are other resources out there but doesn't know how to find them – there are so many!
- hasn't had an assessment on the island – resources for the blind are few and far between and are usually poorly informed wrt technology
- the streets in San Juan are treacherous to walk on (especially if it has rained) they're smooth blueish brick http://farm4.staticflickr.com/3356/3598182331_2615b851c2_z.jpg?zz=1 they're very uneven.
- the sidewalks have little metal covers to access the sewer and the covers are often ajar or missing not unlike this: http://cdn2.vtourist.com/15/3054747-El_Bulevar_sidewalk_complete_with_holes_Veracruz.jpg
- very few curb cuts
- walks with a white cane

Vignettes:

Julia decides to

Marvin

Marvin is a 13-year-old boy who loves his iPad and iPhone. His Mom purchased an iPad for him so he could play educational games that were recommended by his classroom learning assistant. Marvin finds it difficult to express himself verbally and also has a hard time sitting still and focusing his attention. When Marvin uses his iPad, he is able to switch back and forth between different games, and move around the room while he plays. This helps Marvin stay focused on learning. Marvin also loves to read and has built a small library on his iPad.

Spelling is one of Marvin's strongest skills at school and he enjoys typing and writing on the keyboard. He likes to use his iPad to type out sentences, because it is much less frustrating than trying to verbalize his needs or feelings. However, he needs to be prompted and guided to write, because it is difficult for him to focus on the task for long.

Marvin also has an iPhone. He has just started to use his iPhone for texting. Right now he only receives and reads texts, but doesn't send any. Though Marvin finds it difficult to express himself verbally, he enjoys making phone calls. He loves listening to the sound of other people's voices, finding that he is able to more accurately identify people by voice than by appearance.

One of Marvin's favorite things to do is to take pictures and video on his iPhone or digital camera. He needs help to upload photos from his digital camera to his iPad, but his iPhone and iPad are synced. He loves to spend time looking through his photos and also enjoys watching videos of himself or of people he knows. Videos are particularly interesting for Marvin, because he enjoys listening to the altered audio when he slows them down or speeds them up.

Scenarios:

Marvin is at science class in the school lab. His teacher, Ms. Frisby is having the class go through a digital open educational resource on electrons. She writes out the website address on the board. Students are paired up in front of computers. Marvin opens the internet browser and types out the website address. Marvin and his pair, Linda, have never been on this site before - curious they start clicking on buttons together.

Ms. Frisby allows some time for the students to explore and play with all the website features before the beginning of her lesson. She knows this will reduce distractions later. Marvin notices another pair have opened up a panel on the bottom of the screen with large buttons that alter the content. Curious, he clicks on the same panel. Marvin and Linda go through combinations of transformation through the 'try something new button'. They are really amused by the 'speak' option as they listen through the computer headphones. Marvin likes the drastic change of simplify, so he keeps that preference on as well.

Ms. Frisby begins her lesson and instructs the class to read the first section then watch the video. Using the 'speak' option Marvin and Linda find it easy to follow along together and focus on the information. As the students follow along Ms. Frisby goes around to each pair to see how they're engaging with the content and helps out if needed. Ms. Frisby checks on Marvin and Linda and notices the options they've turned on. She asks them how they are enjoying the content. Marvin and Linda are excited and point out that they had no idea they could have the computer speak to them. Ms. Frisby explains to them how they could save these preferences for use in other classrooms or at home using the 'save to cloud' feature.

Possible needs and preferences

- Speak (for listening exercises)
- Simplify (for focus)
- Try something new (for exploration)

Other Use Cases to Consider:

- learning disabilities

- dyslexia - possible needs and preferences:
    - low contrast
    - dyslexia font
    - text to speech
    - speech to text
    - highlight important points (in desired colour)
    - dictionary
    - more time to complete tasks
    - spell check

And From Gregg's comments in Design Deliverable re: barriers to entry tool (First Discovery):

- first time users
- users with very low vision
- users with no digital literacy
- users with no literacy
- users with severe cognitive disabilities
- elders using computer for the first time
- those who don't know computer metaphors
- people who don't have teachers and therapists to help them and can't user computers at all as they find them, yet need to discover what would make them accessible
- A tool that is VERY simple and basic and works with a person with any disability from the start