National and Global Public Inclusive Infrastructures

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Dec 2010 Cloud4all - first gathering
WHY is GPII?
WHY is GPII (Global Public Inclusive Infrastructure)

We need a paradigm shift.

   Current approach can address the multiple problems here and emerging.

1. Internet will no longer be optional – *yet many can not access or use it*

2. Access solutions *don’t exist* for everyone

3. Current *solutions won’t work for all of the new technologies emerging*

4. Access solutions are *too complex*

5. Access solutions are *too hard to find & find out about*

6. Many *can’t afford* the high cost of access solutions they need

In addition people need access to *all the computers they encounter*, at work, home, community, etc. Not just one that is set up for them somewhere.
WHY support commercial apps? (not just open-source)

- Need to work on whatever computers or devices that users have or encounter and have to use.

- The problem is just too large to address without commercial sector
Situation and Approach

Addressed by Assistive Technologies

Addressed by Universal Design (built-in)

Cannot fill the gap with government funded or philanthropic access efforts. Too large
WHAT is GPII ?
Enhancements to the cloud/web/platform infrastructure to

1. **Grow the market** for assistive technologies and SERVICES
   - serve more people, lower costs, increase motivation to innovate and invest

2. **Facilitate collaboration**
   - International, public-private, private-private, cross sector
   - to lower costs, reduce duplication, accelerate innovation

3. **Increase built-in accessibility**
   - Advantages include: Ubiquitous access, no stigma, no “access-tax” to be paid only by some (who are already at disadvantaged)

4. **SIMPLIFY**
   - For users, for schools, for public access points, for organizations, for governments, for policymakers
Video?  GPII.ORG web site?
Global Public Inclusive Infrastructure is

- Auto-personalization
  - of user interfaces
  - and media and materials (content)

- Based on
  1. user needs & preferences
  2. context
     - physical environment
     - ICT environment
     - task
     - available adaptive resources (local/network, computer/human)
WHO is GPII?
**GPII is...**

- People in US, Canada, Europe, and many other countries
- A coalition of existing and new efforts
- Academics, ICT industry (IBM, Microsoft etc), AT companies, Practitioners and of course Consumers (individual and in all of the above).
- And now also You.
- Currently about 35 FTE programmers, designers, researchers, practitioners.
  - (and with the grant soon to be more)
- The main core effort of Raising the Floor – a two year old consortium and (as of Jan 2011) a non-profit based in Switzerland.
What are GPIIs main components?
**Major Components of GPII**

**Will something help me? What?**

- **User Awareness**
  - Users find out something exists for them.

- **Eval Wizard**
  - Users can find out which types of things help them.

- **Pref & Perm Profile/Server**
  - Users can store need & preference info for later use.

- **GPII Marketplace**
  - Find all existing solutions, at once commercial & free.

- **Shopping Aide**
  - Users can use profile to find just what helps them.

**Getting access automatically, anywhere, on any device**

- **Run-Time Fitter**
  - Prefs, permissions and context used to determine best fit.

- **Anywhere Delivery**
  - Any access features needed for fit delivered anywhere.

- **Run-time Tailor**
  - Built-in + any delivered are auto-adjusted.

- **Auto Caption Description +**
  - Automatically finds captions/descriptions etc. for user.

- **Assistance On Demand**
  - User can call up any assistance any-where.

**Tools to make it easier, lower-cost to create & market new solutions**

- **Development Tools/Environ**
  - Developers have a rich development environment for AT.

- **Parts Store**
  - Free & commercial parts to speed dev and lower costs.

- **Rich Expertise Resource**
  - Infrastructure to make it easy to provide AOD service.

- **AOD Service Infrastructure**
  - Infrastructure to make it easy to provide AOD service.

- **GPII Marketplace**
  - Developers can quickly, efficiently market worldwide.
What has been & is being worked on elsewhere?
### Existing GPII development efforts

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Which components will this grant be focusing on?
CLOUD4all Project Focus

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Awareness (of consumers to fact that solutions exist for them)

CLOUD4all

- Not a focus but this project will help raise general awareness some.
- Use cases

NOT  C4a

- Major focus once the GPII is up and running.
Wizard

**CLOUD4all**
- Not a focus of the Grant
- Some work in connection with creating profiles.
- Preference Editor – advanced
- Auto-tracking of preference – and (user controlled) auto adjust
  - (SEE RUN-TIME TAILOR)

**NOT C4a**
- WIZ 1 - Questionnaire Based
- WIZ 2 - Exercise Based – interactive
- WIZ 3 Game/Activity based
- USER Friendly Preference Editor WYPIWYG
- Real-time pop-up Custom Control Panel
Preferences

CLOUD4all

➢ What the pref profile should include

➢ Ability to include app & platform specific preferences
  ➢ (e.g. Window’s NT on 1024x768 screen specific prefs)

➢ Standards modification

NOT C4a

➢ Permissions Profile
  • Product/Service auth
  • Gov service authorization

➢ Advanced wizards
Preference Storage & Retrieval

CLOUD4all

- EPII Preference Server
- Privacy methods
  - Way to anonymously retrieve
  - Way to not store in cloud (USB?)
  - Generic profiles
  - Micro variations (anti-fingerprinting)
  - Need to know
- Methods for securely storing
  - Name and data separate
  - No ability to reconstitute
- Ability to upload prefs from apps & OS into pref profile

NOT C4a

- Integration with single sign-on & auth
Marketplace and Shopping Aide

CLOUD4all

- Federated registry of solutions
- Product Characterization Meta
  - Function
  - Support/stability/safety
- PS/P Matching algorithms
  - Pre-selection/purchase
  - Which built in features or add-ons/AT match user needs
- Choice Presentation to users
  - (shopping aide)
  - Used by individuals to set feature/product prefs (vs function pref)

NOT C4a

- GPII Unified-Marketplace
- Product trial environment
Run-time Fitter

CLOUD4all

- Develop best ‘fit’ processes
  1. Look up - What does user wants/needs
     1. Function and products
  2. Discover - What is avail and possible in situation
     1. Includes server and demand services
     2. Includes conflicting profiles for collaborating users
  3. If indicated – ask users for guidance
     1. Delayed access
     2. Extra charge
     3. Loss of privacy (e.g. human asst)
  4. Determine - best fit of 1 and 2 guided by 3
     1. Call on delivery system if needed
     2. Pass on settings to Tailor

- Fitting Translator Concepts
  - (have specific settings for WinNT– this is Win7 or smaller screen or gnome)
  - Use settings from SIMILAR USERS [A125]

- Statistical Tracking/Recom
  - Just for now
  - To recommend changes to profile

NOT C4a
Unified Delivery System

download&install, run-w/o-install, cloud based, desktop-in-cloud etc.

CLOUD4all

➢ Architecture for UDS

➢ Prototype / demonstration UDS concepts using
  • Server based AT – Webanynwhere
  • Run w/o install – SA2go
  • Desktop in cloud - ?? SunServer?
  • other?

NOT C4a

➢Unified delivery system
➢Cost accounting for service based AT model
➢Assistance on Demand
Run Time Tailor

**CLOUD4all**

- Tailor modules
  - (actually adjusts the OS/browser/apps/AT/etc)
    - Window and Linux/Gnome
    - IE, Firefox, Opera
    - WebAnywhere
    - Selected AT
      - ???
      - ???

**NOT C4a**

- Tailor Modules
  - Other Oss
  - Other browsers
- Web Environments (Portals)
  - Educational environments
  - Company based app env.
  - etc./
Automatic Accessible version or supplement retrieval

CLOUD4all

- NONE

NOT C4a

- Accessible version locator
  - Captioned
  - Described
  - Braille (e.g. doc)
  - Audio (e.g. book)

- Supplement locator
  - Captions
  - Audio descriptions
  - Other supplement (e.g cognitive)

- Supplement translator
  - Language – incl sign

- Supplement integrator
### Assistance on Demand
*(computer and human)*

<table>
<thead>
<tr>
<th>CLOUD4all</th>
<th>NOT C4a</th>
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<tbody>
<tr>
<td>➢ None</td>
<td>➢ AOD</td>
</tr>
<tr>
<td></td>
<td>• Computer</td>
</tr>
<tr>
<td></td>
<td>• Human</td>
</tr>
<tr>
<td></td>
<td>➢ Material Transformation</td>
</tr>
<tr>
<td></td>
<td>• Conversion to braille,</td>
</tr>
<tr>
<td></td>
<td>audio, multimedia,</td>
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<tr>
<td></td>
<td>lower language level,</td>
</tr>
<tr>
<td></td>
<td>etc</td>
</tr>
<tr>
<td></td>
<td>• Computer, human, both</td>
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Access Feature/Product Development Tools

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<tr>
<td>None</td>
<td>➢ Rich development environment</td>
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<tr>
<td></td>
<td>➢ Model based programming</td>
</tr>
<tr>
<td></td>
<td>➢ iPhone/Android like dev envir.</td>
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</table>
Rich Expertise Resources for Developers

CLOUD4all

NOT C4a

- Consumer network
- Testers
- Disability Experts
- Disability Developers
**Parts store**

**CLOUD4all**
- None

**NOT C4a**
- Set of components & services for developers to use to create installable or network solutions
  - Open source
  - Proprietary (free and commercial)
  - Code
  - Algorithms
  - Data bases
  - Services
## Assistance on Demand
### Infrastructure & Tools

<table>
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<td>None</td>
<td>Rich set of tools and guidelines for starting up an AOD service</td>
</tr>
<tr>
<td></td>
<td>Chargeback structure for payment if not volunteer</td>
</tr>
<tr>
<td></td>
<td>Info on how to bond for user safety enhancement</td>
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GPII International Marketplace

CLOUD4all

- Federated database of solutions.

NOT C4a

- iPhone/ Android like marketplace
- Safety checks for developers
- Easy upload and dissem