Mylife end-user technology platform

Low cost technology with Android OS

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Emerging trend: low-cost devices

- Traditional ICT aid devices are purpose-built in small production runs – very expensive.
- Low cost solutions are needed to provide care and independence to an increasing number of elderly people.
- Light-weight computing devices and capacitive touchscreens of high quality are now available at low prices.
- How utilize low cost hardware and free online services to provide aid?

Device examples

- Archos 10” Android tablet ~€200.
- Raspberry Pi: Bare-bones ARM computer capable of running Android - $25.
- Acer T 23” full-HD touchscreen ~€250.

Mylife system

- ICT solution to support independence, participation and well-being for people with dementia.
- Use free resources available online.
- Touchscreen device for primary user.
- Server with account management and configuration, web interface for carers.

Mylife device strategy

- Needed low-cost touchscreen device.
- Explore use of main-stream tablet with app-store for software distribution.
- Explore Android as a versatile, low-cost platform.
- Chose Motorola Xoom for its good docking station with power and speaker.

Android platform

- Linux core with feature-rich Java application framework.
- Biggest smartphone system, strong presence on tablets.
- Open-source base and Google commercial version.
- Google has Google Play (formerly Android Market) for app distribution.

iOS/iPad comparison

- iPad still the tablet market leader.
- Apple responsible for both hardware and software, and keeps tight control on the whole value chain, while Google primarily makes the software. Android is open source and can freely be adapted to any hardware, and it is.
- Applications can be installed from any source on Android, while Apple enforces its AppStore as only source. AppStore more restrictive than Google Play.
- Anyone free to develop for Android with free tools on any computer, while Apple development requires paid license and Mac.

Android benefits

- Good framework for application development, with support for much advanced functionality (Media playback, Telephony/ SIP, Text-to-speech, etc.).
- Popular and in rapid development.
- Can be adopted to any ARM device.
- Wide support for accessories and USB devices, near field communication.
- Work done on home automation integration.

Many possible devices

Feasible device types

- Touchscreen tablet (7-13 inches)
- Smartphone (phone version could have other functionality)
- ARM box, connected to bigger touchscreen
- ARM box, connected to TV – small touchscreen device to operate

Business models

- Software & service only, using retail devices.
- Complete package with custom device.
- Android supports both extremes.

Software & service only

- Subscription to service made by carer through web site.
- Android application available through Google Play or own web site.
- Carer buys standard retail device from any reseller and installs application.
- No physical product or logistics needed (customer/reseller responsible for device).
- Limited to commercially available Android devices, Google version to use Google Play.

Complete package

- Device comes with the service subscription, either rented or bought for one-time fee.
- Makes possible custom device(s) with own brand, tailored to the user group.
- Also custom Android version based on open-source.
- Another level of possibilities and user adaptation, but also another level of work and responsibilities, being in charge of the hardware.

Mylife Android integration

- Using retail devices with Google Android, distributing the application through Google Play.
- Simple user interface hides the underlying system.
- Possible to configure user interface contents and colours from server.
- System control implemented as far as possible, such as starting at boot.

Retail device challenges

- Retail Google Android is in ultimate control of the device, and Mylife is just a plug-in in this system – not possible to completely shield the user from the underlying system.
- Can’t remove system bar, only dim it.
- System and application upgrades can disrupt Mylife.

Retail device challenges

- Many system settings to configure, Mylife compromised if set wrong.
- Bugs: Tablet can freeze, network connection not always re-established, automatic updating not always working.
- Physical device design: Retail devices designed for mobility and without consideration for accessibility – not user friendly.

Mylife device conclusions
after first round of trials

- Promising possibilities.
- Significant challenges with using retail devices have been identified.
- Has worked reasonably well in trials, with the help from testing officers and carer documentation – a carer capable of trouble-shooting needs to be at hand.
- Can hope for better devices, but for full control a custom device/version of Android is needed.