UBIAPPS

Applications Everywhere

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NON-PROPRIETARY MULTI SCREEN APPLICATIONS:

SEAMLESSLY INTEGRATING PHONES AND TVS USING OPEN TECHNOLOGIES

Use Cases

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- Social
- Advertising
- Interactive programming
- Synced content

Web server

Cast

SDK Apps

Control

Mirror

Interact

SDK Apps

Play

NAS drive

Play

webinos foundation

Distributed no single point of control
Open royalty free APIs
Open source implementation
Strong security
Local and cloud
Web friendly

MultiOS – MultiDevice Application Environment

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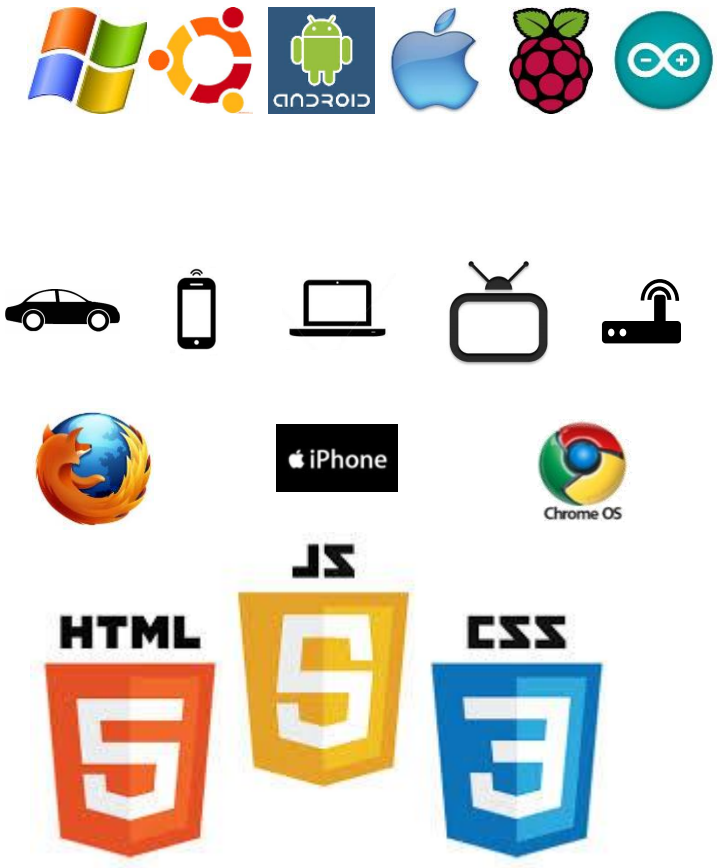

An application development environment, proven to be very highly portable over operating systems

An application execution environment tuned for the capabilities present on diverse device types

Easy to developer for based on HTML5 and JavaScript

Next Generation Browser Architecture

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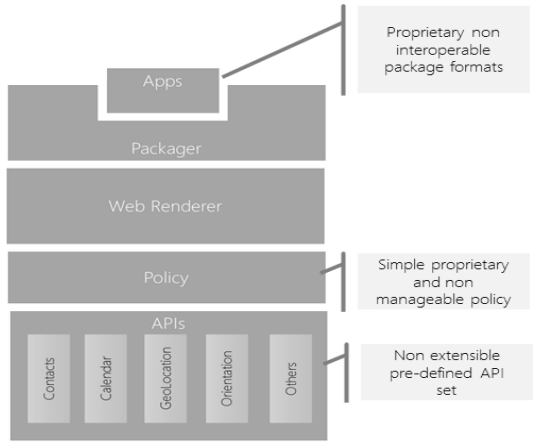

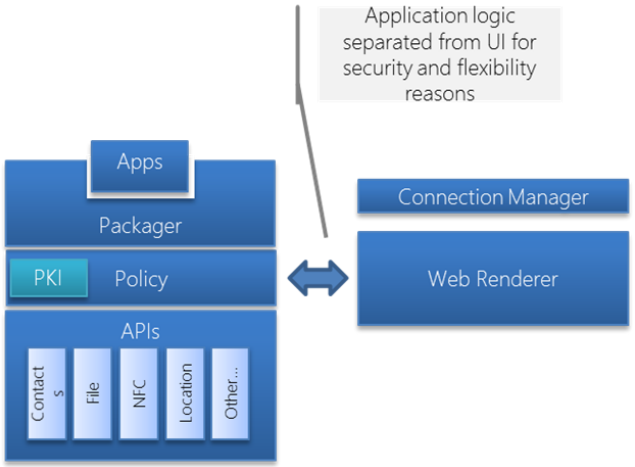

Implementation of a loosely coupled web application architecture

A vision of what next generation browsers may look like

Blurs traditional boundaries between server and browser

Will work on multiple browser types: firefox, midori etc.

APIs

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	Android	Linux	Windows	Mac
The Generic Actuator API				
App2App Messaging API				
AppState Synchronisation API				
Authentication API				
Contacts API				
Context API				
Device Interaction API				
Device Status API				
The Event Handling API				
AppLauncher API				
MediaContent API				
Messaging API				
Navigation API				
NFC API				
The Web Notifications API				
Payment API				
The Remote UI API				
Secure Element API				
The Generic Sensor API				
Discovery API				
TV Control API				
Vehicle API				
Webinos core interface				
webinos Widget API				
The W3C File API				
The W3C File API: Writer				
The W3C File API: Directories and System				
The W3C calendar module				
The W3C DeviceOrientation Event specification				
The W3C Geolocation API				
The W3C Media Capture and Streams API				
The W3C WebRTC API				

31 APIs

JavaScript APIs to access native capability

Implemented on four operating systems

Some portable JavaScript some native bindings

APIs

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REMOTABLE

Discovery	JavaScript wrapper to "discovery mechanism, includes cloud based discovery, local (mdns) and SSDP
Media Content	Media with metadata, multiple mappings including windows, upnp, android gallery etc (upnp server)
Media Play	Allows media to be controlled, played stopped and play events (upnp renderer)
File API	Explore media and other, without metadata. Raw file access
Media Capture	Standard HTML5 capture option – but remotable
Web RTC	Standard HTML5 webrtc – but remotable
Events	Generalised inter device – inter app eventing mechanism. Can implement app specific protocol
TV API	Wrapper to Channel broadcast (DVBT/S) – eg. SatIP

Personal Zone
Private cloud

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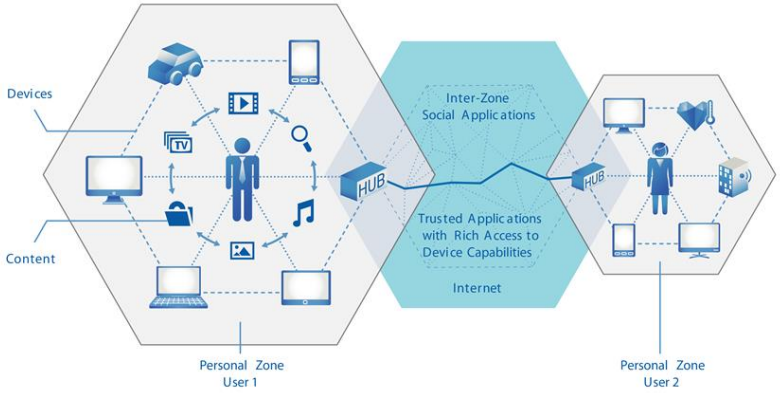

W3C® Widget

XACML

- Creation of the concept of a Personal Zone
- A logical/conceptual concept that makes it easier for a user to manage device connectivity and security
- A virtual network that connects all your devices
- Fits the definition of what many people call a private cloud

Peer 2 Peer Networks

connecting devices with no internet

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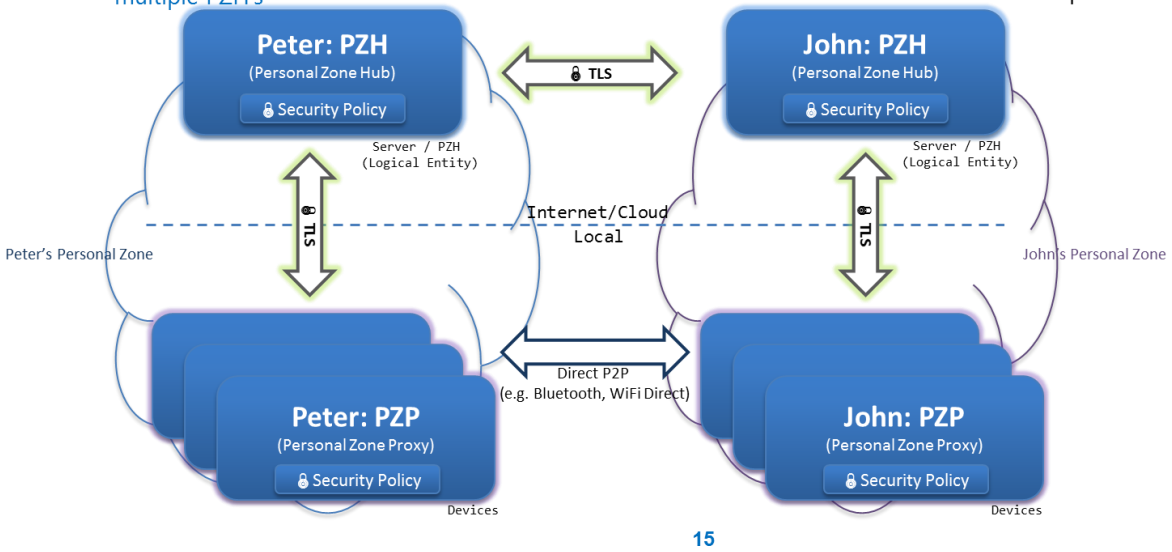
- PZH - Personal Zone Hub
  - Resides on Server
  - Logical Entity: 1 PZH per user
  - Each PZH server can host multiple PZH's
- **PZP** - Personal Zone Proxy
  - Resides locally on the device
  - Present on every webinos device
- **TLS – Transport Layer Security**
  - Secure/Certified connection between webinos components



Use distributed PKI to bootstrap peer to peer device connections securely

With or without IP connection

Service Discovery
negotiation and interrogation

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FEATURE-URI

A simple schema for discovery and negotiation of services

Based on WebIDL descriptors for definition of JavaScript Interfaces

Users distributed Feature-URI for naming of services

Service Invocation
using each others services

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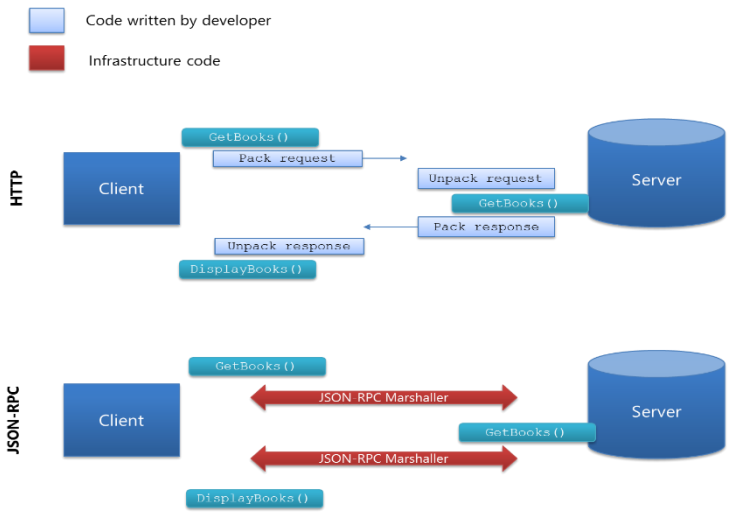

- JSON-RPC as a web-friendly remove invocation mechanism
- Implements the vision of Remote JavaScript
- A powerful and general purpose function

Next Generation Policy
using each others services

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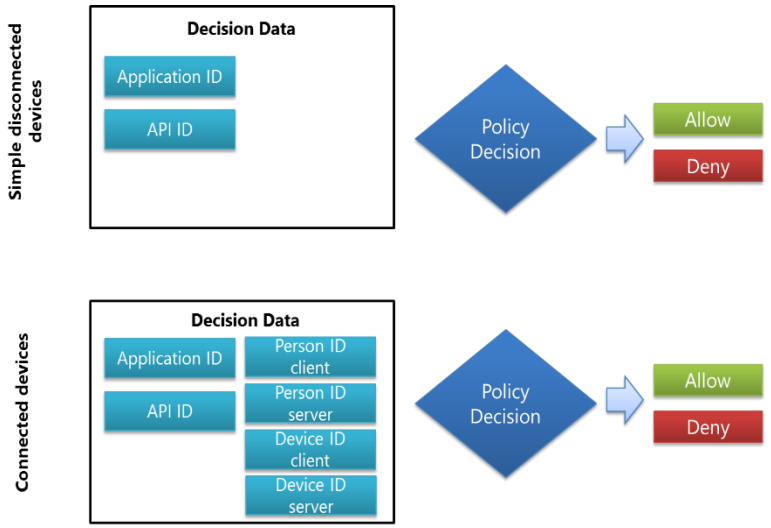

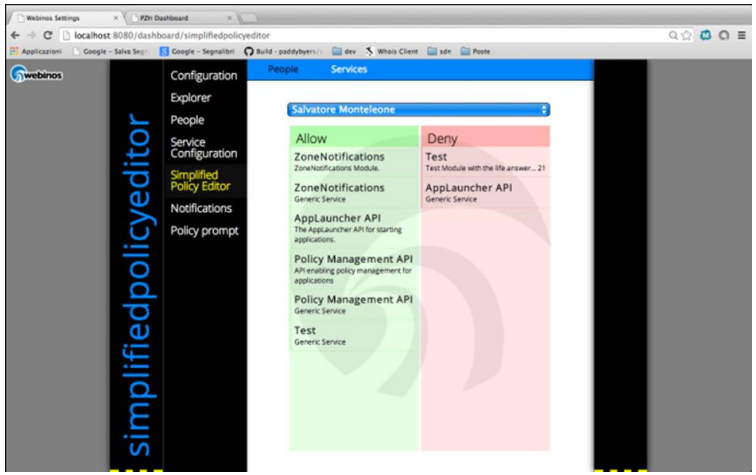

Android, iPhone, ChromeOS policy is simple whitelist of application and feature

Cross device cross user increases the complexity of policy description and management by (at least) three dimensions

Major result with potential long lasting implications

Full Royally Free web based framework for TV-Mobile eventing and communication

Fully distributed architecture – no single point of control

Strong PKI based security

BUT……

Its complicated and heavy

Revision 2 – Lightweight model

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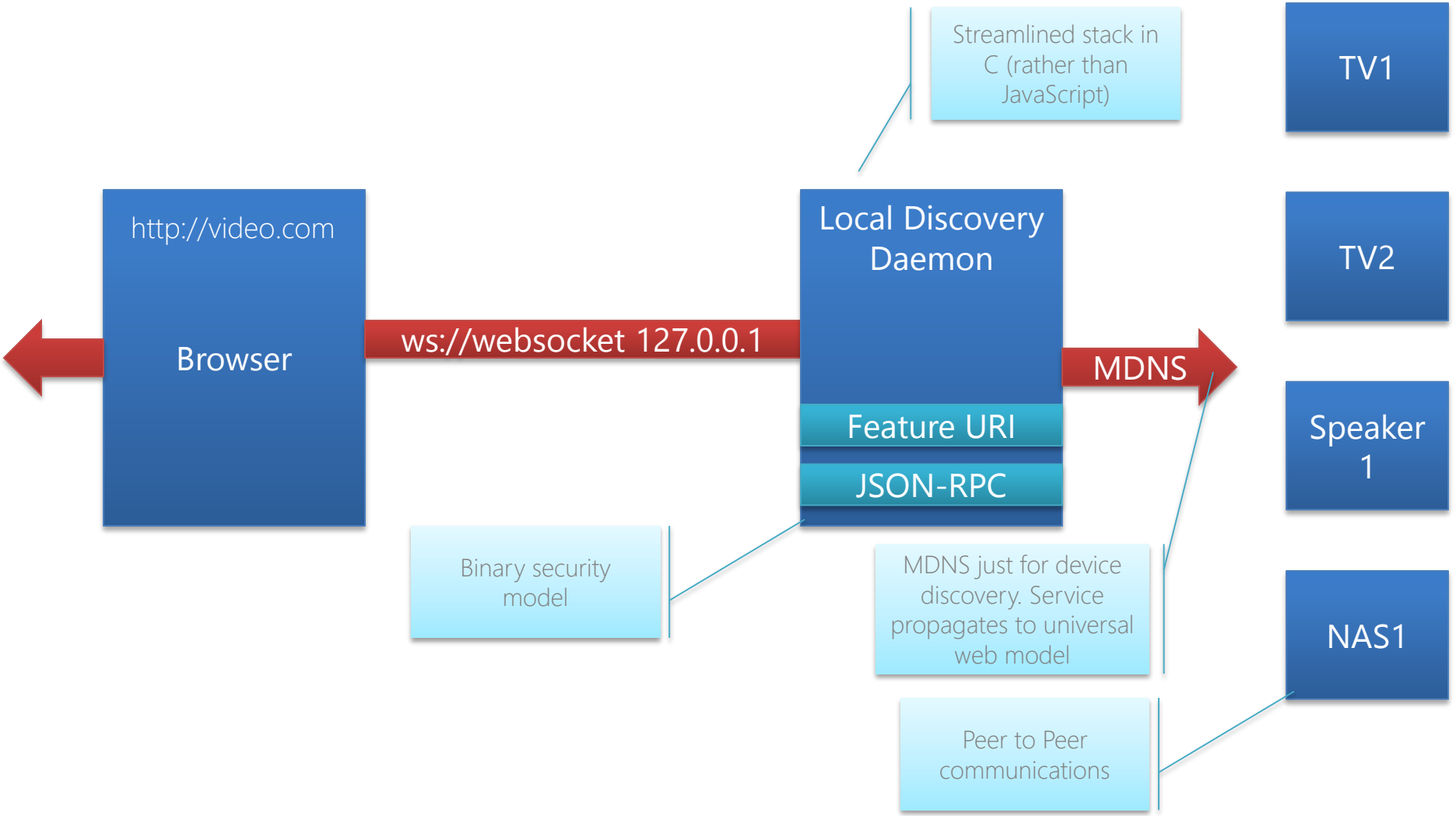

Conclusions

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- Full interoperable open stack already defined for TV-Mobile seamless comms
- Can securely work from simple browser context – but also works for native apps
- Will support
  - Remote control
  - Remote server
  - Advertising
  - In programme interactions – and more
- Available in heavy node.js stack now, streamlined C implementation coming soon

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DLNA/UPNP

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- No security
- No access from browser context
- No cloud share model