

Web for TV service - Trends in Korea -



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Changes in TV application platform (STB)

- * **GEM-based (java) app platform** has been used since 10 years ago, but **unsuccessful**.
- * **Web-based platform** is getting adopted widely, esp. for N-Screen service.
- * 'Android' is also drawing attention, and are being adopted by IPTV/CableTV service providers..

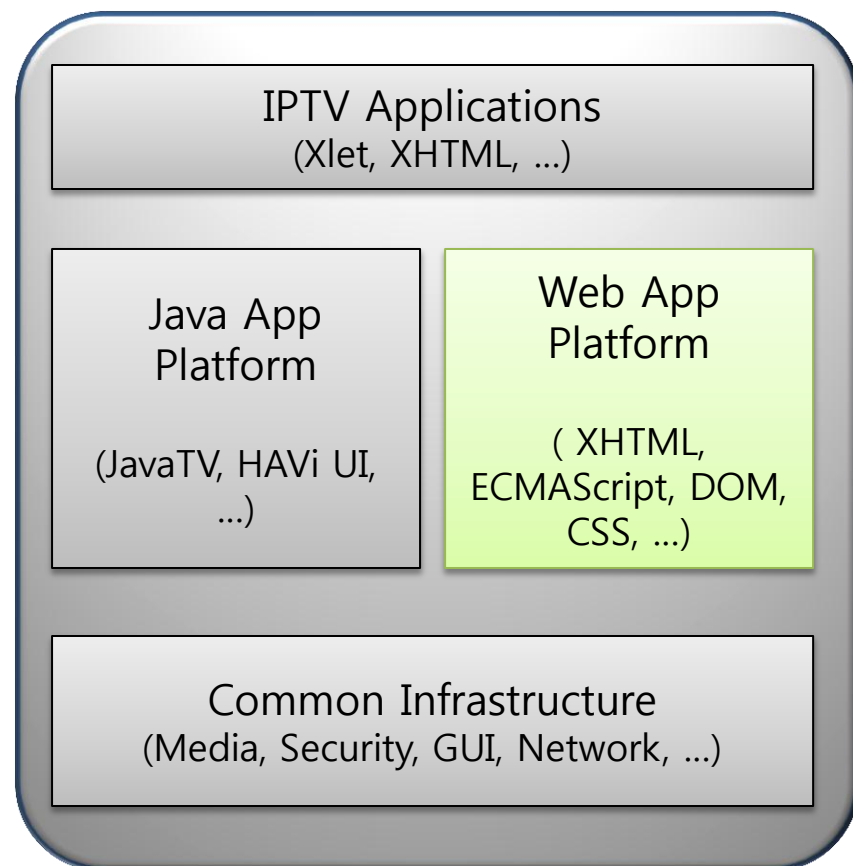
	IPTV	CableTV	Terrestrial	Satellite
App Platform (Old/Current)	Java, Web	Java	Java	Java
M/W Standards	ACAP-based, W3C-extended	OCAP	ACAP	MHP
Metadata Standards	(DVB SI →) <u>ITU-T H.770/H.750 based</u>	OpenCable SI	ATSC PSIP	DVB SI
Services	<i>Java</i> : Game, Shopping, etc <i>Web</i> : Web-Browsing, Widgets, ...	Shopping, Game, News, etc	News, Game, Traffic, etc	News, Game, Traffic, etc
App Platform (Recent/Next)	Web Android	Android Web	Web platform (CEA-2014 based)	

Changes in IPTV Middleware Standards

ICSP (IPTV Convergence Service Platform) : IPTV Terminal Middleware Standard

* **ICSP-J Profile** : **ACAP-based**

* **ICSP-HTML Profile** : Recently Added (and being extended)



- **Web App Platform**
= **Web Core** + **Web Extension**
- **Web Core**
 - Set of W3C Standards
: XHTML1.02, ECMA-262, CSS1/2, DOM2, XMLHttpRequest, Window object, etc
- **Web Extension** (*being standardized*)
 - Device Setting API
 - Media Play API (LinearTV, VoD, File)

harmonized with 'Web and TV' activity

Changes in Service : Smart & Open

- **Multi-Screen Services**

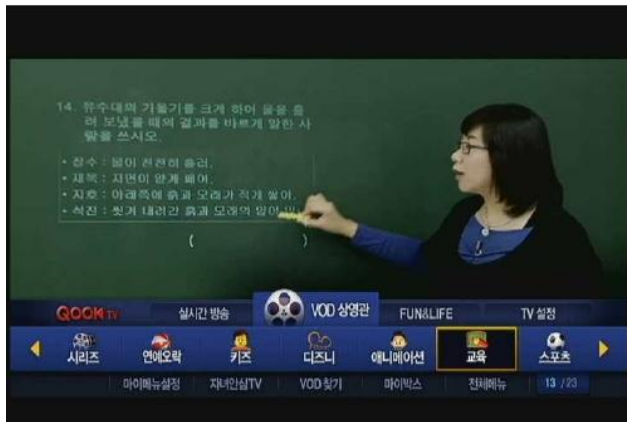
- * STB - Linear TV and VoD (with QOS), OTT, Apps, ..
- * PC/Phone/Tablet - Linear TV and VoD (without QOS), OTT, Apps, ...

- **Social TV Services** : TV SNS

- **App Store Services** : Register Apps, Download Apps

- **'Open' Services**

- Open VoD : User can upload contents for other users.
- Open TV Channel : User can broadcast contents through TV channel
- Open CUG (Closed User Group) : User can create viewer group



STB(TV)



Phone



Tablet

Web for Smart TV Set : Samsung Smart TV Platform

- **Samsung Smart TV Platform**
 - Web-based App Platform
 - App = HTML + JavaScript + CSS + Flash
- **Smart TV Services**
 - LinearTV
 - VoD
 - Applications (from App Store)
- **App Store**
 - started 1 year ago
 - more than 500 million downloads (as of 2011/05)
 - more than 550 Apps (as of 2011/05)

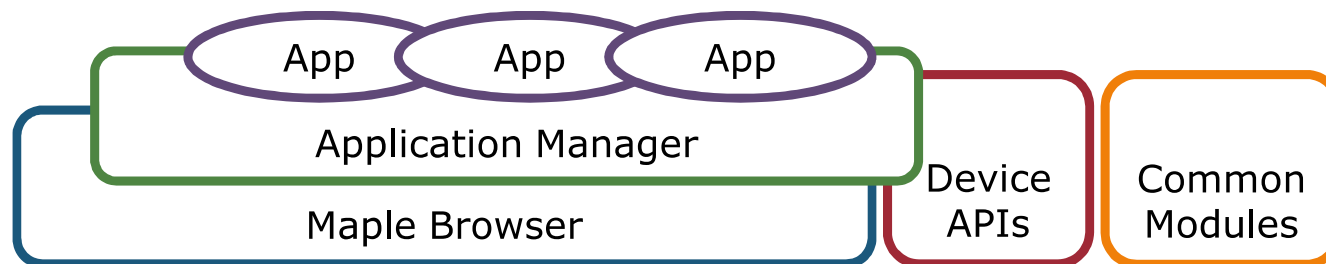
TV Apps	Ratio
Game	24%
Education	23%
Information	20%
Video	14%
Etc	19%



Samsung Apps

Web for Smart TV Set : Samsung Smart TV Platform

- SW Architecture



- Main Components

- Web Browser Engine

- **HTML5**(partly), XHTML1.0, XML1.0
- CSS1, CSS2, **CSS TV Profile 1.0**
- DOM1, DOM2,
- JavaScript 1.8, **Adobe Flash 10.1**, HTTP1.0/1.1

- Application Manager

- Install, register, update, remove, and manage applications

- Common Modules

- Remote Controller Key Access, Convenient Functions (Image View, ...)

- **Device APIs**

- TV Channel Control, File System Access, AV Player, IME, Network Access, e tc.

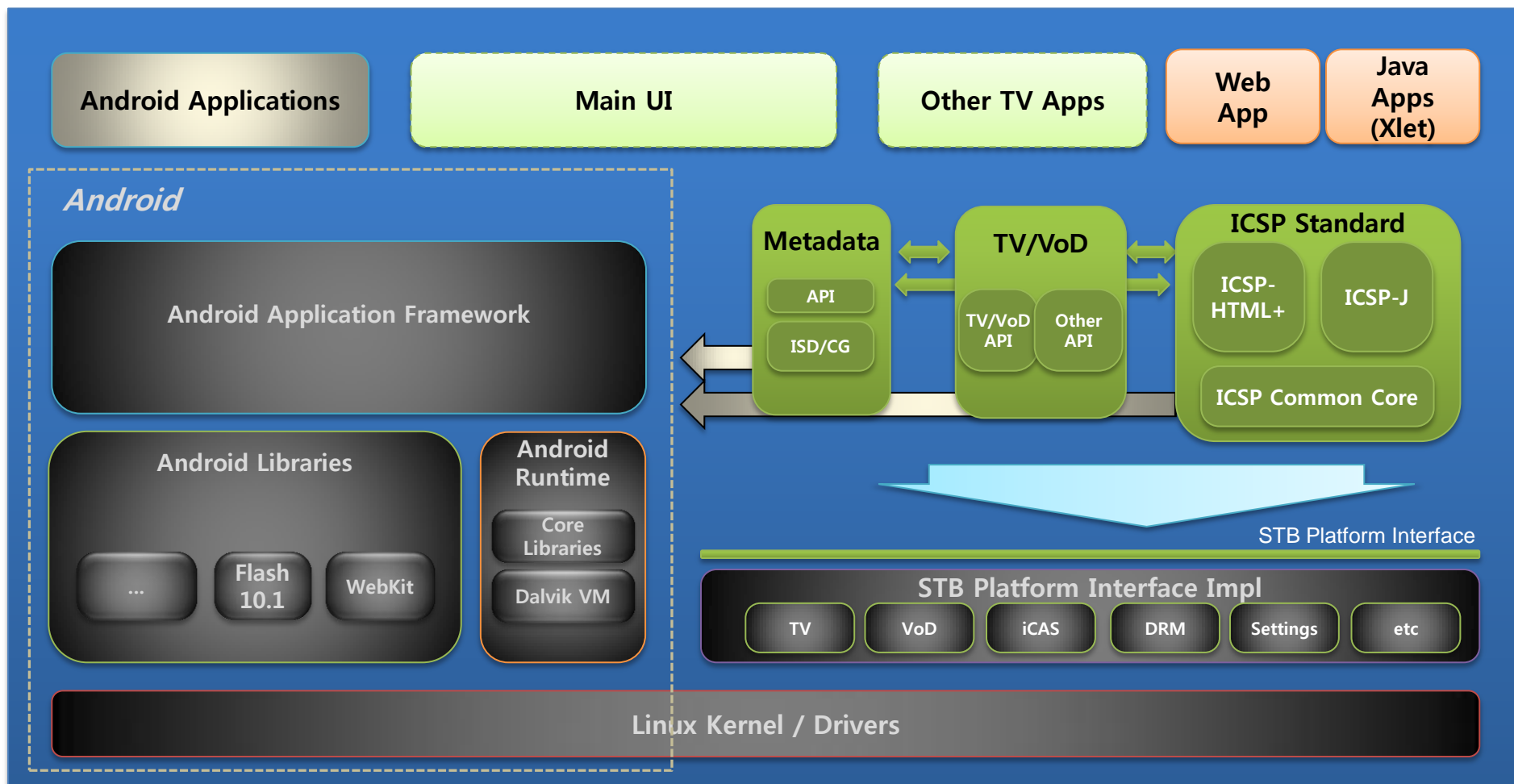
Web for Smart TV Set : LG Smart TV Platform

- **Web-based App Platform**
 - App = HTML + JavaScript + CSS + Flash Lite
- Main Components
 - Webkit-based Browser Engine
 - **HTML4.01**, XHTML1.0/1.1, XML, XSLT, Xpath
 - CSS2.1, CSS3, **CSS2D/3D**, **CSS TV Profile 1.0**
 - DOM1, DOM2, DOM3(partly)
 - JavaScript 1.6, **Flash Lite (3.1)**
 - Media Player Plug-In
 - Http Streaming
 - RTSP, RTP
 - DRM



Android Extended for TV Services

- Google Android Platform is extended to support TV/VoD features, and IPTV M/W Standards.
- Supported Services : Android Apps, Android-TV Apps, Web Apps, Java(Xlet) Apps



Summary of the Trends/Change

**N-Screen (Multi-Screen)
'Smart TV' Services
Open Platform
Open Services**



Web

Web is becoming the converged service platform for variety of TV services !

Thank You
감사합니다

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