LG Netcast Platform

LG Smart TV
CINEMA 3D
EASY Home Dashboard

Take control of your Home Entertainment

- Live TV
  - Live TV screen showing a documentary with the title "DOCUMENTARY, 2011 PM 08:13"
  - Buttons: Input, Setup, CH, Favorite

- Cards
  - Premium applications: YouTube Videos, Foursquare, AccuWeather
  - LG Apps: Unit Converter, Sudoku, National Flag, Puzzle, Wine Sound
  - Google Maps

- Launcher Bar
  - Search, LG Apps, Web Browser, Media Link, Amazing Ads, Shoot the Arrow, My Apps
MORE

Share More for a Smarter Life

- Portable HDD
- USB Memory
- Tablet PC
- PC
- Phone
BETTER Premium Content
A Whole New Level of Content
Agenda

1. Evolution of Smart TV

2. Netcast Platform
   I. Platform
   II. Content Service
   III. UX & Input Device
   IV. SDK

3. Summary
1. Evolution of Smart TV

**TV Evolution Direction**

- **Open Platform**
- **Conversion**
- **3D Smart TV**
- **Broadband TV**
- **Digital TV**
- **Analog TV**

**Core Technology of Smart TV**

1. Platform
2. Content Service
3. UX & Input Device
4. Ecosystem
Smart TV, the Next Big Wave

Smart TV will drive the market like smart phones and tablet PCs.

- iPod (2002)
- Blackberry (2002)
- iPhone (2007)
- Android (2009)
- iPad (2010)
2. Netcast Platform

Smart Share (DLNA + Media Link)

Device Platform
- UX
- Application Framework
- Services
- Linux

Service Platform
- Market Place
  - App Store
  - Billing
  - Search / Recommendation
  - Ads / Purchasing
  - SNS
  - Membership
  - Security

Cloud Service
- Amazon
- Naver
- Google

Content Provider
- KBO
- MLB
- You Tube

Broadcaster
- MBC
- KBS
- MSNBC

SDK

Developers

App Developer
## 2-1. Platform

**Boundary of mobile phone/tablet PC/smart TV is merging...**

<table>
<thead>
<tr>
<th>H/W SoC</th>
<th>S/W Platform</th>
<th>Broadcasting</th>
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<tbody>
<tr>
<td>- TV-centric SoC</td>
<td>- CE device Smart TV</td>
<td>- Major broadcasting</td>
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<tr>
<td></td>
<td></td>
<td>- MVPD* (Cable, Satellite, IPTV, etc)</td>
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![LG Smart TV](image)

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<th>H/W SoC</th>
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<tr>
<td>- PC/Mobile-centric SoC</td>
<td>- Google: Google TV</td>
<td>- OTT ** (Netflix, Hulu, Maxdome, Orange VoD, more)</td>
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<tr>
<td></td>
<td>- Apple: Apple TV</td>
<td></td>
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<td></td>
<td>- Microsoft: MediaRoom</td>
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![Google](image) ![Apple](image) ![Netflix](image) ![Hulu](image)

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<th>Market Impact</th>
<th>Broadcasting</th>
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<td>- Competition caused by market entrance of traditionally strong IT players</td>
<td>- Linear broadcasting changes to competition with OTT</td>
</tr>
<tr>
<td>- New players entering into TV market with mobile experiences</td>
<td>- Hybrid service from broadcasters (HbbTV, OHTV)</td>
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</tbody>
</table>

* Multichannel Video Programming Distributor  
** Over The Top
Web Platform

Web is an open platform, and getting lots of attention as the next PC/Smart Devices Platform.

Web Development Environment
- Portability – Platform independent, WRT
- Flexibility – Variety of plugins, VM, script support
- Open Standard – W3C standard
- DODM – Develop Once Deploy Many

Web as the next TV service platform
- Users already have online experiences
- Internet contents are already available on TV
- Premium contents exists on web
- Web application is quite popular already

1) WRT(Web Run-Time): Web App/widget installation and execution environment
LG Smart TV

LG provides open Smart TV platform for easy development application

**Application**
- Web App (javascript/HTML5)
- Flash App
- Native App

**Open APIs**
- Web Core
- Smart Share
- Flash Engine
- Game Engine

**Service Engine**
- DRM
- DTV Framework
- Open GL ES
- Database
- Media Player/Streaming

**Core**
- C/C++
- DVR, EPG, Input dev., and more

**Web Browser**
- Javascript/HTML5

**Flash Engine**
- Flash Player 11
- Flash Air 3.0

**Dev. Language**
Developer / Seller / App Store

Support development environment for developers

Unified dev Tool | Various SDK | Dev Guide Documents

http://developer.lgappstv.com

Support App Sales

App Register / Manage

Sales/Calculation Manage

http://seller.lgappstv.com

Provide New Value

http://lgappstv.com
LG App Store

Serving 165 countries as of today
LG Smart TV supports banner, loading, and pre-roll advertisement.
2-Ⅱ. Content Service

Value chain is shifting from network broadcasters to content owners/distributors and platform vendors.

Market Power Shift

Contents Owner ➔ Contents Distributor ➔ Network (Broadcaster) ➔ Terminal (Platform) ➔ Consumer

evolves to digital home
Premium Contents

As of August 2011, there are more than 200 Premium Contents in Video, Info, Music, Sport, Game, etc.

Global: 13 including MLB, YouTube, Skype

EU: 90 including AcetraX, Orange

Korea: 7 including KBS, MBC

NA: 16 including Amazon, Netflix

HK: 9 including She.com

ASIA/MEA: 41 including Bigpond, Aljazeera

SCA: 28 including Globo, TVN
Content Search & Recommendation

Search all contents that exist both inside and outside of LG Smart TV, and recommend based on usages.
2-Ⅲ. UX & Input Device

- Simple and easy to use User eXperience (UX)
- Use variety of input devices to make LG Smart TV experience nice and friendly
LG Remote Control Application

Exists on iOS App Store and Android Market
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<th>IDE</th>
<th>API’s</th>
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<tr>
<td>Web</td>
<td>Eclipse + LG plugin</td>
<td>“LG Browser Open API Technical Specification”</td>
</tr>
<tr>
<td>Flash</td>
<td>Adobe CS4/5 + LG plugin</td>
<td>“LG Flash Open API (FOA) Reference Guide”</td>
</tr>
<tr>
<td>Native SDK</td>
<td>Marmalade</td>
<td>Open GL ES + others</td>
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</table>
LG provides Smart TV SDK for developers to make application easily

**SDK**

- IDE
- Open API
- Emulator
- Samples & Doc.

*IDE: Integrated development Environment*

**Web SDK, Overview**
LG provides WYSIWYG IDE development environment to support HTML5.

**WYSIWYG IDE available**

**Drag & Drop**
- WYSIWYG IDE based on Eclipse
- Support debugging Web page error through emulator

**UI Designer**
- Layout Editor
- Object/Event Viewer
- Property/Event Palette

**UI Component**
- control buttons, labels, text fields
- Automatic code generation

**UI Widget**
- Watch, Calendar and so on
- App creation for reuse
- property fix

**Rich samples**
- Import and use 3rd party open libraries

* What You See Is What You Get
Web SDK, Visual Design

One Touch GUI Design
(Visual Design & Code Modification at the same time)
Web SDK, Emulator

[ Web content on LG DTV Emulator ]

- **Functionality of LG DTV Emulator**
  - LG DTV Emulator has the same browser engine as real LG TV, which is based on webkit
  - User can access internet contents from “Open URL” window with actual URL
  - Being able to play flash contents via embedded Flash plug-in
Native SDK, Marmalade

IDE / Emulator

Packaging Tools
3. Summary

1. LG is a world leading brand which consumers recognize. Also LG can provide reach to global consumers.

2. Opportunity for Smart TV marketplace is growing exponentially. Now is the time to take the advantage.

3. Ecosystem for LG Smart TV embraces open platforms, that can create partnerships and monetizing opportunities.

4. LG provides web, flash, and native SDK.

http://developer.lgappstv.com