DTV, IPTV & OTT TV Product Development Capabilities
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01 DTV & IPTV Product Capabilities
DTV & IPTV Capabilities Summary

Facts & Figures
- End-to-end experience in DTV/IPTV from embedded video processing to Smart TV apps.
- 100+ engineers experienced in DTV/IPTV product development and testing.
- 30+ project successfully completed in DTV/IPTV domain.

Set-Top Box Experience
- Applications (EPG, UI, DVR)
- Middleware (CA, DRM)
- Media processing (codecs)
- Operating System & Drivers

Headend Experience
- CA/DRM Servers
- VOD, Ads Servers
- Video/Network
- Infrastructure

Apps Experience
- Smart TV SDKs
- Mobile Platforms
- (Android, iOS, WP7)
- Web (HTML5, Flash)
DTV & IPTV Consumption Landscape

Service Providers

- Cable
- Satellite
- Wireless
- Mobile

Content Providers

- TV Networks & Media
- Social Networks
- Advertisement Agencies
- Information Services
- Gaming Providers
- E-Commerce & Retail

TV Sets

- Convention TV Set
- IP-Enabled TV Set

Set-Top Box/Console

PC & Mobile

Traditional TV

New Gen TV
DTV & IPTV Solution Layers

**SET-TOP BOX**
- Smart TV Apps
  - Web browser, Games, etc
- Set-Top Box Apps
  - UI, EPG, DVR, etc
- Middleware
  - Conditional access, etc
- Media Processing
  - Video codecs, etc
- Operating System & Drivers
  - Memory Management, etc

**HEADBAND**
- Service Infrastructure
- Video Infrastructure
- Network Infrastructure

- ✔ GlobalLogic Expertise
Set-Top Box Software Architecture

- **Downloadable Applications**: HTML Browser ✔, Infotainment ✔, Games ✔
- **Resident Applications**: UI ✔, EPG ✔, PVR ✔
- **Middleware**: VOD Navigation ✔
- **RTOS**: Memory Management ✔, Channel Tuning ✔, File ✔
- **Device Drivers**: Memory ✔, Data Interface ✔, Tuner ✔

GlobalLogic Expertise

- **Hardware Abstraction**
- **Middleware API**
- **OS / API**
- **Set-Top Box**
Headend Software Systems

- QAM
- IP
- Network

- Encoder
- Demodulator
- Receiver
- VOD Server
- Ad Server
- CA/DRM Server
- CMS
- OSS/BSS

GlobalLogic Expertise
Case Studies: Set-Top Box
Set-Top Box Reference System

Product
- Reference system for cable set-top box implementation.
- Supports time-shift recording, HDMI, CVBS, and composite video.

Contribution
- Development of UI, EPG, and behavior logic.
- Development of middleware and drivers adaptation layers.
- Adaptation of low-level drivers for HDI and CDI compliant certification.
- Implementation of HDI interfaces for satellite set-top boxes, CDI Device drivers.
- Testing of implementation with specific test tools (FGDL/Main TestTool, FOSH 2.9).

Technology
- C/C++, Embedded Wizard, Chora, Nucleus, ThreadX, MPEG/MPEG2 transport protocol, H. 264, VC1, AC3, Dolby Digital, DVD Video, DVD-VR, DVD- Data, JPEG, MP3, WMA, CDDA, VCD, SVCD, BD-MV, BD-AV, BD-Java, AVCHD
Case Study: Set-Top Box

Universal Home Media Player Apps

Product
- Hybrid universal media player which allows to play back video of standard and high definition up to Full HD.
- Player can be used as a specialized set-top-box for digital TV programs reception.

Contribution
- NetFront Browser demo integration.
- Integration with the big number of IPTV/VOD providers.
- Remote Control application for iOS and Android devices that fully replaces standard IR RC control.
- Streaming proxy solution for IPTV distribution in the hotel’s local network.

Technology
- C, C++, PHP, Java, Objective C, Multimedia streaming, iPhone, Android, WEB services
Smart TV Application Framework

Product
- NG application execution environment and framework for Smart TV applications development based on Lua scripting language.
- Unlike previous engines (MHP, HbbTV, MHEG) the framework is image-based assuring interoperability and consistent presentation across all platforms.

Contribution
- Design and development of the framework.
- Development of sample applications with own graphical assets and logic.
- Development of test suite running both in simulation and TV environment.
- Manual, automated, performance testing.
- UK customer support.

Technology
- C++, Lua, Perl, PHP, SQL, shell, QT, Lua, STL, Libjpeg, Libpng, LibOpenSSL, LibCURL, Libffmpeg, QT Creator, Mingw-32, Luac, OpenSSL, MySQL, Lighttpd, ActivePerl.
Case Studies: Headend
Case Study: Headend

Broadband Multimedia-Service Router

Product
- Broadband multimedia-service router.
- 99.999% availability of network video services.
- Most-widely deployed digital video networking platform in the world.
- Protocol-agnostic, content-intelligent architecture.

Contribution
- Participation in pre-project estimations.
- Design and development of complex, multi-threaded embedded software for BMR.
- Development of high-level applications for controlling BMR hardware.
- Product testing (manual and automated).

Technology
- C/C++, ACE, CORBA, COM, MFC, Win32 API, VxWorks, Altera FPGA, Galileo core, MPEG-2, H.264, Ethernet, ClearQuest, ClearCase, Quality Center, TestStand
Switched Digital Video Server Platform

Product
- Switched digital video server software.
- Allows bandwidth savings and monetization of reclaimed network capacity with SD and HD program offerings.
- Supports broad suite of SDV patterns including QAM, middleware and set-to box vendors.

Contribution
- Participation in the development of SDV core components.
- Design, development and support of GUI applications for SDV management.
- Porting of SDV solution from Windows Server to Linux.

Technology
- C/C++, ACE, CORBA, MFC, Linux (Red Hat Enterprise), Windows Server
Broadcast Video Network Management

Product
- Video management system designed to support switched digital and broadcast video solutions.
- Manage a range of services including digital television, video-on-demand, HDTV, IPTV and advertising applications.

Contribution
- Participation in product R&D.
- Design and development of the new GUI and CLI features for the system.

Technology
- Java EE, JBoss, Oracle, Linux, Windows, SNMP, AdventNet
Case Studies: Apps
Case Study: Apps

OTT Mobile Content Consumption Apps

Product
- Carrier-specific mobile version of the product from a partner specializing in the rental of DVDs, Blu-ray Discs through retail kiosks.
- Allows mobile content consumption (movies, games, TV shows, etc.) through direct download and streaming with immersive UI.

Contribution
- Development and porting of the app on iOS and a broad range of Android smart phones and tablets (with 7- and 10-inch screen).
- Adding DRM support by integrating application with custom DRM player.
- Iterative process with client to ensure that the UX matches the device/platform expectations.
- Multiple levels of optimization in the app using Android and iOS best practices.

Technology
- Objective-C, iOS Development Stack, Android Development Stack, Android Honeycomb 3.1 and above, Consuming RESTful web services, DRM Integration, Velocity toolset
Case Study: Apps

Mobile Video Consumption Framework

Product
- Customizable framework for content providers.
- Convenient CMS for content provider staff.
- Mobile and Web clients for watching video content on Android, iPhone mobile devices or any PC.
- Broadcasting own content.
- Very intuitive and innovative user experience.

Contribution
- Development of all client applications including Web, Android, iPhone.
- Development of Content Management

Technology
- Ruby on Rails, Objective C, Java Android, HTML/CSS/JS, Adobe Flex, DRM protected content, iPhone, Android, Web clients
Mobile TV & Video-on-Demand Client

Product
- Platform for content delivery over mobile and broadband networks.
- Delivers live television, premium and primetime programming, video-on-demand, satellite and digital music services from broadcast and cable TV networks, and music labels to users worldwide.

Contribution
- Customization and implementation of their products (Live TV, On-Demand TV, Radio) for numerous carriers in the U.S. and Canada.
- Enhancement of application to support 500+ channel items, premium purchase support.
- Development of Product for Alltel and customization for other wireless carriers.

Technology
- Java ME, BREW, Windows Mobile, RIM Blackberry
Thank You