

Enriching the

Entertainment Experience

Several technology developments over the last few years are having a profound impact on the rapid evolution of the Digital Home market. Chief among them are: digital convergence, wireless connectivity, broadband Internet access and product miniaturization. Technology firms are scrambling to enable a connected entertainment experience for home consumers that is simple, unique and works better together.

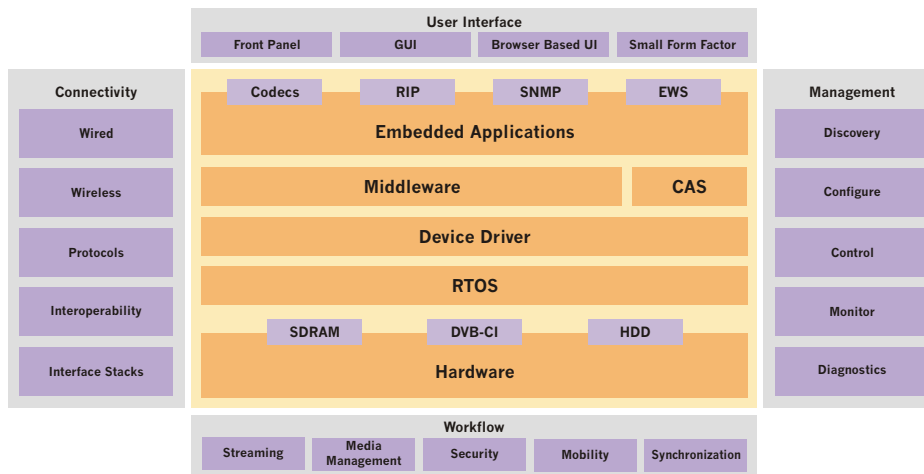
As a player in this industry, your product development challenges are many fold:

- Upgrading functionality constantly to stay ahead of this rapidly-evolving market with attractive, easy-to-use and affordable products,
- Providing interoperability across a wide range of devices and protocols,
- Meeting your consumers' desire for mobility and on-demand experience, in the context of content owners' demands for authorized usage, and
- Increasing product robustness and quality to reduce the cost of maintenance.

Celstream can help address your challenges. Our engineers have extensive experience in developing products for the Digital Home market. Our comprehensive services can enable you to meet your consumer needs across a range of products:

- Digital TVs & Projection Systems
- DVD Players & Recorders
- Tuners & Decoders
- Digital Media Servers (PVRs, HDD Recorders, NAS)
- Digital Media Receivers
- Personal Storage Media
- Set-top Boxes (Satellite, Terrestrial, Cable, IP)
- Digital Media Adapters
- Home Networks
- Residential Gateways
- Home Connectivity (xDSL, IP PBX, DECT)
- Universal Remotes
- Mobile & other SFF devices

Areas of Expertise



Appliance

Celstream can help design and develop specific embedded or software components that you need for the appliance. We are familiar with the ST, Conexant® and Broadcom® chipsets, and several real-time operating systems such as VxWorks®, Symbian®, J2ME™, Windows® CE, Phar Lap®, OS20, OS40, µCos, Linux® and Nucleus®. Areas where we have strong competencies and can partner with your engineering teams include:

- Displays - Front Panel (LED, LCD), On-screen Display, Small Form Factor GUI.
- Digital Multimedia - HD/SD, H.264, WMV, MPEG-2, WMA, AAC, AC3 Dolby Digital & MP3.
- Image Processing - RIP & PDL (PS, PCL, Raster), JPEG
- BSP & Drivers Ethernet, USB, FireWire®, RS232, TVLink, NVRAM Flash & other Device Drivers.
- Content security - DRM, Encryption, CAS & DVB-CI.
- Embedded Software Components - RF Modulators, Front-end Tuner & IR.

Connectivity & Interoperability

Achieving a connected entertainment experience requires connectivity and interoperability. Enabling device connectivity for integration and interoperability is our forte. So while we are at it, your team can stay focused on more critical tasks. Our expertise includes:

- Connectivity - Wired (Ethernet, USB, FireWire®), Wireless (WiFi, WLAN, Bluetooth), P2P
- Protocols - UPnP, DLNA
- Service Enabling - Embedded Web Servers
- Stacks - DVB-Common Interface, TCP/IP
- Middleware - MediaHighway®, OpenTV®, Windows Media®
- Frameworks - MS DirectShow®, QuickTime®, J2ME™ CDC

Management

Our engineers have extensive experience in configuration, control, monitoring & diagnostics software for a variety of non-technology savvy end-user situations across a range of industries. This is extremely important when you are trying to build ease-of-use into your products for home use. Celstream's experience encompasses:

- Synchronization of Data and Controls (SyncML, Client-Server implementations)
- SNMP Components
- Device Management - Automated Test Equipment, Self Test
- Embedded Web Servers
- Remote diagnostics

Track Record

- Complete Design & Development of driver software for Customer Premises Equipments (CPEs).
- Extension and Customization of driver software for set-top boxes.
- System Integration and Testing of :
 - STB
 - DSL modem
 - DVD Player
 - DVD Recorder
 - HDD Recorder
- Complete Design & Development of software product for next generation USB flash drives.
- DRM Encapsulation for video-on-demand on mobile device.
- Mobile phone as a remote control for device configuration & monitoring.

Platforms

Celstream can deliver modular, applications that will allow your end-users to have a seamless, real-time experience. You can leverage our expertise in usability to develop easy-to-use, intuitive solutions. Our engineers are experienced across multiple RTOS, DSP, Windows®, Mac OS® and Linux®. Our application platform experience includes delivering for:

- EPG
- Media Management
- Content protection
- Streaming
- Mobility
- Small Form Factor applications

Portfolio of Services

Celstream can offer you a range of comprehensive product engineering services and support. You can rely on our ability to meet tight delivery schedules with high-quality products.

New Product Development

- Ideation
- Prototype
- Implementation
- Multi-release

Current Product Engineering

- Enhancements
- Porting
- Migration
- Optimization

QA/Testing

- Embedded
- Usability
- Certification
- End-to-End Solution

Professional Services

- Consulting
- Customization
- Integration
- Technical Support



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