



Product Engineering Services
for Media & Entertainment

partners | engineering | excellence

 **CELSTREAM**®

Delivering

Profitable Experience

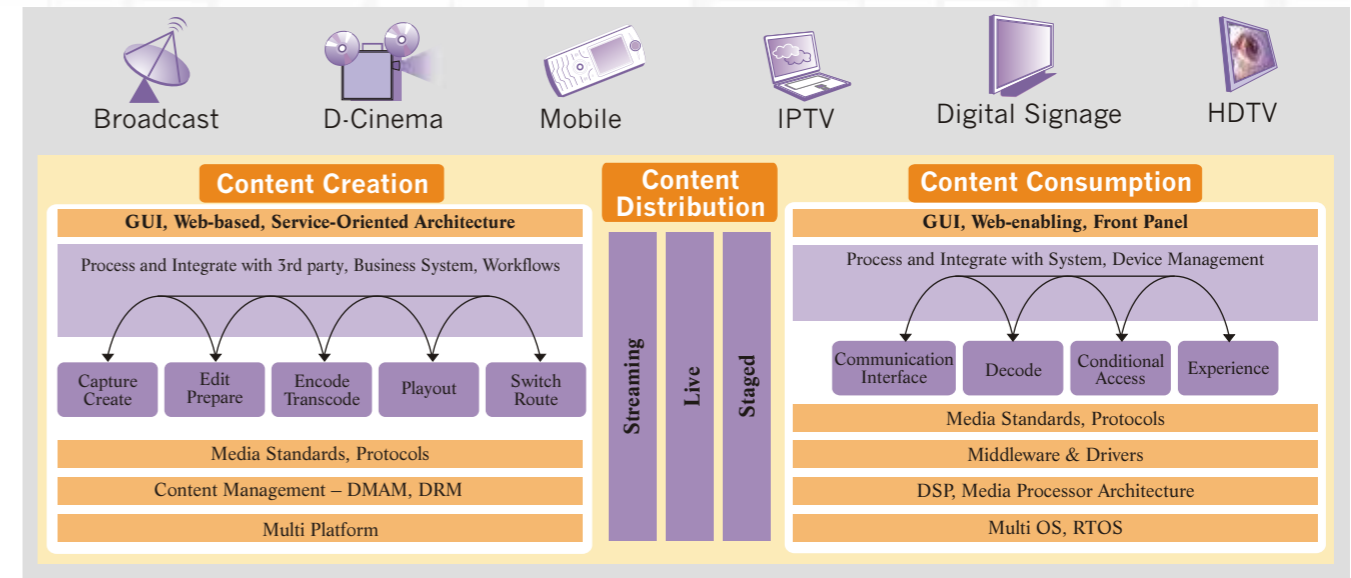
Technological advancement, insatiable hunger for information and unprecedented demand for entertainment have revolutionized the Media and Entertainment (M&E) industry. This is resulting in traditional business models being replaced with new ones, providing avenues for new revenue streams. D-Cinema, Mobile Video, IPTV and Digital Signage are all evidence of the way the industry is re-inventing itself.

For technology companies in the M&E industry meeting the ROI expectations of new-age businesses, creating innovative products

and getting them to the market faster than the competition have become an imperative. What media companies require now, more than ever before, is a technology partner who can assist them in meeting their product roadmap challenges.

Celstream has a strong track record in providing offshore product engineering services to technology companies in the M&E industry. Our in-depth understanding of the domains, technologies, platforms and standards enable us to develop innovative and high quality products and solutions for the industry.

As a successful, global services provider, Celstream can help you address your most critical product roadmap objectives.



Content

Ever increasing consumer demand for instant, anytime and anywhere content, are compelling companies to create and manage vast amounts of increasingly complex content. The challenge for media companies today is to effectively and efficiently manage content throughout its lifecycle.

From content creation to aggregation to distribution to consumption and management, Celstream has the expertise in meeting your needs for content management. Our content services and IP areas include:

- **Codecs:** Audio, Video & Speech
- **Edit:** Interoperability, Media Exchange & Transcode
- **Streaming:** Protocols & Applications
- **Digital Media Asset Management (DMAM):** Device Interface, Shared Storage & Archival
- **Security:** CAS, DRM & Protection

- Product Adaptations & Customizations
- Reference Implementation
- IP Core Development
- Optimization
- Porting
- Verification & Validation
- Compliance
- Consulting & Integration

Products & Platforms

Rapid advancements in technologies and standards combined with growing number of delivery channels and formats have created virtually unlimited product play options. Often, technology companies are compelled to trade-off their early-to-market objectives against factors like organizational resource limitations and market expectations such as innovation, quality and total cost of ownership.

With a deep understanding of the latest technologies and our experience of building complex products and platforms for the M&E industry, Celstream can provide you the competitive edge in the marketplace. We have extensive expertise in the development of products and platforms for any segment of the value-chain. Our comprehensive range of services include:

- **Broadcast Equipment:** Video Servers, Edit Stations, Master Controls, Routers, Switchers, Non-Linear Editors, Archival Devices, Signal Distribution & Control Systems
- **Customer Premises Equipment (CPE):** Set-top-box, IP STB, PVR, DVR, DVD Players, Media Adapters, Mobile, Media Players, MCPC & DSL Modems

- New Product Development
- Component Development (Embedded or Software)
- Enhancements & Sustenance
- Usability Solutions
- Device Management: NMS, EMS, SNMP-based implementations
- Systems Integration
- Simulators
- Product Validation

Workflow

The transition from analog to digital content has given rise to several new business and distribution models. These models demand an immense level of agility, accuracy and management of complexity. The rapid change in the technologies has also resulted in an increasingly large number of disparate systems. The intense demand for differentiated, personalized offerings and experiences adds up to the challenges faced by the M&E industry.

With our comprehensive understanding of the domain and expertise in diverse technologies, Celstream excels in delivering workflow solutions. Our structured integration and development approach has significantly benefited our customers in delivering flexible, seamless and future-proof workflow solutions. Our workflow services include:

- Workflow Implementation & Automation
- Integration between
 - Equipment, Applications & Platforms
 - Business Systems
 - Packaged Solutions
- Interoperability
- Conformance
- Customization & Personalization
- End-to-end Solution Validation
- Web Service Enablement
- Workflow Management

- **Broadcast:** News, Sports & VoD
- **New Media:** HDTV, IPTV, D-Cinema, Digital Signage & Mobile

Track Record

Mentioned below, are a few of our engagements with product companies in the Media and Entertainment industry -

- **From Product Ideation to Implementation** - Facility Management Software for a global broadcasting company.
- **Complete Software Architecture** - Software Product for rich media content distribution through digital signage, for a leading intelligent displays company.
- **Complete R&D** - SNMP enabling devices and Intelligent Network Management System for a broadcaster.
- **Protocol Stack Development** - Developed SNMP v1/v2/v3 Protocol Stack for IP enabling devices, for a major broadcasting company.
- **Application** - Software for remote automation control of broadcast devices, for a leading multimedia company.
- **Software Integration** - Custom Workflow solution implementation based on Microsoft® CS.NET and other leading products and frameworks for a major broadcaster.
- **Product Enhancements** - Enhanced Broadcast Software Product for a large media group.
- **Reference Implementation** - H.264 Reference Implementation and Optimization for ARM® processors, usable for mobile applications.
- **Optimization** - Optimized MPEG AAC HE Audio Decoder for superior performance and footprint.
- **Sustenance** - Sustenance of legacy products on Routers, Switchers and Automation Systems for leading multimedia company.
- **System Integration & Testing (SIT)** - SIT for a range of CPE devices including Set-top-box and xDSL modems for a large consumer electronics company.

About Celstream Technologies

Celstream is an established, rapidly-growing, global Product Engineering Services company with a rich heritage in offshore product development. With a decade-long successful track record of co-development with leading global technology firms, we combine the best engineering talent, world-class processes and cutting-edge technology expertise to address the entire product development lifecycle. Our strong IPR regime coupled with our flexible delivery models provides significant competitive advantages to our customers.



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