




Monetizing Multimedia Convergence with Motorola CCE





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As IP has emerged as the network technology of choice, data, voice, and video services have converged to exploit this unprecedented commonality. In this brave new world, service providers face an increasingly competitive landscape and need new tools to rapidly deliver an array of differentiating converged services. Motorola's Communications Convergence Engine (CCE) is an open, flexible software platform that enables operators to rapidly deploy new services, build subscriber loyalty, reach new markets, and capitalize on the economic opportunities of delivering converged multimedia services.

Making Multimedia Services Profitable

Consumers are presently overwhelmed with the wide variety of offerings available through both traditional and the rapidly growing community of Internet and value-added service providers. While this shift is resulting in rapid availability of new, innovative services, it is becoming increasingly painful for consumers to have business relationships with numerous providers. Most consumers would rather buy their services from a handful of trusted providers that understand their specific needs and interests and deliver these services in a customer-friendly manner. Service providers have a key asset in their longstanding/trusted consumer relationships. To be successful, service providers must transform their business models and become digital merchandisers with the ability to quickly stock new services and content to profitably exploit opportunities in broad and niche markets alike.

Like their nimble Internet/Web merchants competition, service providers need to constantly refresh their digital inventory and display it prominently across one or more storefronts (TV, Web, and/or mobile), along with targeted advertisements, promotions, and personalized/relevant incentives. The traditional model where content services were delivered to individual devices in a silo fashion (often by multiple providers) has changed. With convergence, blended content and services can be delivered across multiple devices and networks, thus maximizing customer convenience and service provider revenue opportunities. Service providers are striving to be the landing page for all digital services across all devices. They need the ability to present subscribers with personalized catalogs and advertisements, as well as the ability to be able to quickly search, browse, preview, and purchase relevant content on any device for consumption on the same or another device.

Increasingly, diverse service providers are competing to offer triple play services. Telecommunications carriers are entering the video market with differentiated offerings and emerging technologies, and cable operators are offering telephony services. Mobile operators are attracting new subscribers by offering video, Internet access, and telephony services. New technologies are allowing service providers to compete in new markets, breaking traditional boundaries and creating new competitive threats.

Service providers have responded to these challenges by investing in new technologies, but profitably delivering multimedia services is less a technology challenge than it is a challenge to create differentiated offerings that increase Average Revenue Per User (ARPU) and subscriber loyalty, leading to steady streams of recurring revenues.

Motorola CCE products enable wireline, wireless, and cable network operators to rapidly conceive, design, package, deploy, and manage a broad range of compelling content and services. Motorola CCE provides a unified environment for managing communications and content services regardless of access infrastructure. Motorola CCE enables service providers to successfully monetize multimedia convergence by enabling them to:

- Rapidly introduce revenue-generating data, voice, video, and multimedia services
- Efficiently manage application resources
- Significantly reduce integration costs
- Enable constant access to best-in-class applications
- Effectively optimize network investments
- Create lasting revenue streams from multimedia services

Convergence For Brand Consistency

The traditional model where content services were delivered to individual devices in a silo fashion is inconsistent with the need to have a unified supply and delivery chain, the goal of which is to deliver a consistent subscriber experience that establishes the service provider as the brand of choice for media and entertainment interests. In order to profitably monetize digital content, service providers must embrace a flexible service delivery infrastructure that streamlines the entire digital supply chain, including partner enablement, contextual advertising, branding, and revenue settlement. Ultimately, by exerting more control over the supply chain and the subscriber relationship, service providers can deliver differentiated and personalized products that meet customer demand, take advantage of new sources of revenue (such as sponsored advertisements), and improve their overall competitive positioning.

Service providers need to build the capability to offer subscribers the content they want, when they want it, on the device of their choice. Consumers are demanding media mobility, and service providers that provide maximum mobility will gain the lion's share of service revenue. For example, consumers increasingly want time-shifted TV and the ability to watch the content they want whenever it is convenient for them.

Content When the Subscriber Wants It

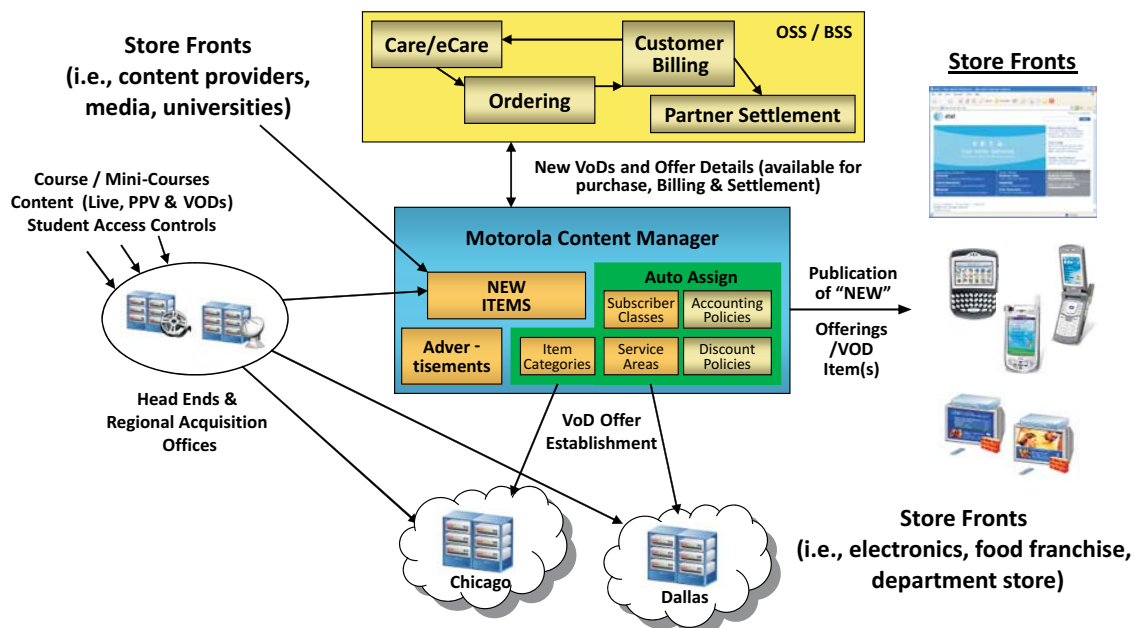
The ability to provide a convenient, easy-to-use storefront portal is essential for enabling media mobility. The extensive use of metadata is also needed so that service providers can define rules associated with flexible media services. Time-shifted content will add significantly to the already vast library of available content. Providing customers with a value-added navigation mechanism that presents content-of-interest can encourage higher take rates of content by providing access to desired content on the customers' schedules, not the networks' schedules. For example, if a subscriber turns on the TV and sees a show that is near its end, the ability to start it over and watch it from the beginning is a valuable service for which many subscribers will pay a premium.

Integrated targeted advertising programs can further enhance Multimedia services. The ability to centrally correlate metadata enables the personalization of content and promotions. In this time-shifted TV example, advertising could be inserted, offering online sales of relevant music or videos and creating additional revenue opportunities based on metadata integration.

Consistent Experience Across Three Screens

By providing a breakthrough combination of sophisticated functionality that enables user-specific content packaging, targeted promotions, and context-sensitive advertisement campaigns, Motorola CCE is a powerful tool that will not only help service providers manage the complete subscriber experience but also open up new revenue opportunities. With Motorola CCE, service providers can control multiple storefronts across TV, PC, and mobile interfaces to deliver a branded user experience that makes it easy to offer coordinated marketing across all three screens.

Coordinated Marketing Across Three Screens



Motorola's solution provides the unseen foundation that enables service providers to control multiple storefronts across all three screens and deliver a streamlined, branded user experience that makes it easy for consumers to navigate, browse, search, and consume content. The content catalog rendered on the storefront portal is customized and tailored based on the individual subscriber's profile and preferences as the subscriber navigates from one page to another on the storefront portal. This separation of the portal from backend content management provides ultimate flexibility and helps ensure that consumers experience the convenience of a unified yet highly personalized storefront, and enjoy fast and efficient interactions with their provider.

Motorola CCE separates and insulates front-end browsing and purchasing functions from backend fulfillment operations. As a result, service providers can offer subscribers the ability to modify subscriptions, specify personalization options, and make content purchases via multiple storefronts including TV, Web, and mobile portals. This also allows the subscriber to purchase content by selecting one of multiple payment options managed centrally as part of subscriber profile (i.e. credit/debit cards, monthly bill, PayPal, or bonus reward points) across all storefronts. In addition, unique cross-platform capabilities allow for content to be purchased on one device and accessed on another. The cross-domain abstraction enabled by Motorola CCE allows point-and-click purchases across three screens, simplifying subscriber access to content.

New Advertising Models

Cable operators, telecommunications carriers, and mobile operators can create innovative new advertising models that leverage metadata to align the characteristics of subscriber groups with characteristics of advertising and content. Motorola CCE's powerful capabilities allow service providers to provide a positive end-user experience and monetize advertising-related opportunities.

Motorola's intelligent infrastructure provides tools for marketing managers to create and control targeted ads based on specific subscriber profiles, demographics, geographic/market areas, or purchase histories. As a result, service providers can offer different advertisements on the storefront based on subscriber profiles, subscriber memberships (e.g. personalization options to Sci-Fi, astronomy or home building), geographic/market areas, or purchase history. Subscribers in Boston will therefore see different local ads compared to subscribers in Portland. Operators can leverage the unique subscriber relationship and the dedicated customer attention for cross-selling/up-selling content and off-net goods, as well as for opening new revenue sources such as sponsored ad revenue.

Local advertising can be slotted for on-demand videos, time-shifted videos, and for live channels by interfacing with ad insertion systems. This adds a whole new dimension of personalized advertisement capability. Targeted ads can be inserted for the same content based on subscriber profile and/or location, even to the extent that within the same household a parent watching TV in the living room might see ads for a local car dealer, while a child watching the same program in his/her bedroom could see an ad for a local amusement park.

Service providers can design sophisticated advertising campaigns for targeting niche subscriber demographics and gain the capabilities to schedule and send email/SMS notifications about upcoming promotions. Motorola CCE solutions can also interface with third-party recommendation engines to provide the necessary information for marketing managers to design new campaigns and also measure the success of campaigns by collecting metrics about subscriber actions and revenues for each campaign. Motorola CCE solutions allow service providers to associate relevant advertising and promotions with subscriber interests, and integrate advertising into a common experience across devices to increase revenues.

Benefitting from A Metadata Control Plane

Motorola's CCE solutions enable wireline, wireless, broadband, and cable operators to package, bundle, deploy, and manage a broad range of services across the gamut of service technologies such as TDM, AIN, QAM, IP, SIP and IMS SIP, allowing you to compete through innovation and differentiation. Motorola CCE offers a unified platform for communications and content services over an access-neutral architecture, allowing service providers to benefit from a metadata control plane so they can associate metadata attributes of content with advertising and promotional campaigns. Service providers can implement a metadata-driven service model through an open integration framework with role-based security. This feature-rich, product-based solution is based on carrier-grade scalability and availability, and it supports key industry standards.

Complex Content Relationships Across the Value Chain

Motorola CCE allows service providers to efficiently manage and monetize content offerings. It supports the rapid introduction of value-added communications and content services with relevant advertising to maximize revenue opportunities from multimedia services. A centralized metadata model enables rapid development of innovative service bundles, a unified storefront, and significant operational automation. Converged services across multiple networking domains enables cross-domain offerings that differentiate services and maximize customer retention.

Motorola CCE also enables expanded revenue generation through expanded business models, and enables a unified storefront that supports the extension of services into multiple domains, with advertising promotional capabilities to continuously increase ARPU. It allows service providers to enable seamless media mobility across:

- User interfaces
- Content guides
- Content formats
- Network protocols
- Data rates
- Access networks

Motorola CCE enables complex content relationships across the value chain and provides essential management functions necessary to effectively manage and monetize multimedia advertising opportunities. It enables efficient content partnerships that leverage a shared subscriber profile and a common experience across devices and access networks so service providers can:

- Encourage and increase customer loyalty
- Utilize subscriber demographics
- Enable subscriber personalization
- Leverage target market geographic information

Service providers can monetize content across networks and realize business advantages through enhanced operations, lower cost structures, faster time-to-market, and increased revenue.

Implementing Motorola CCE

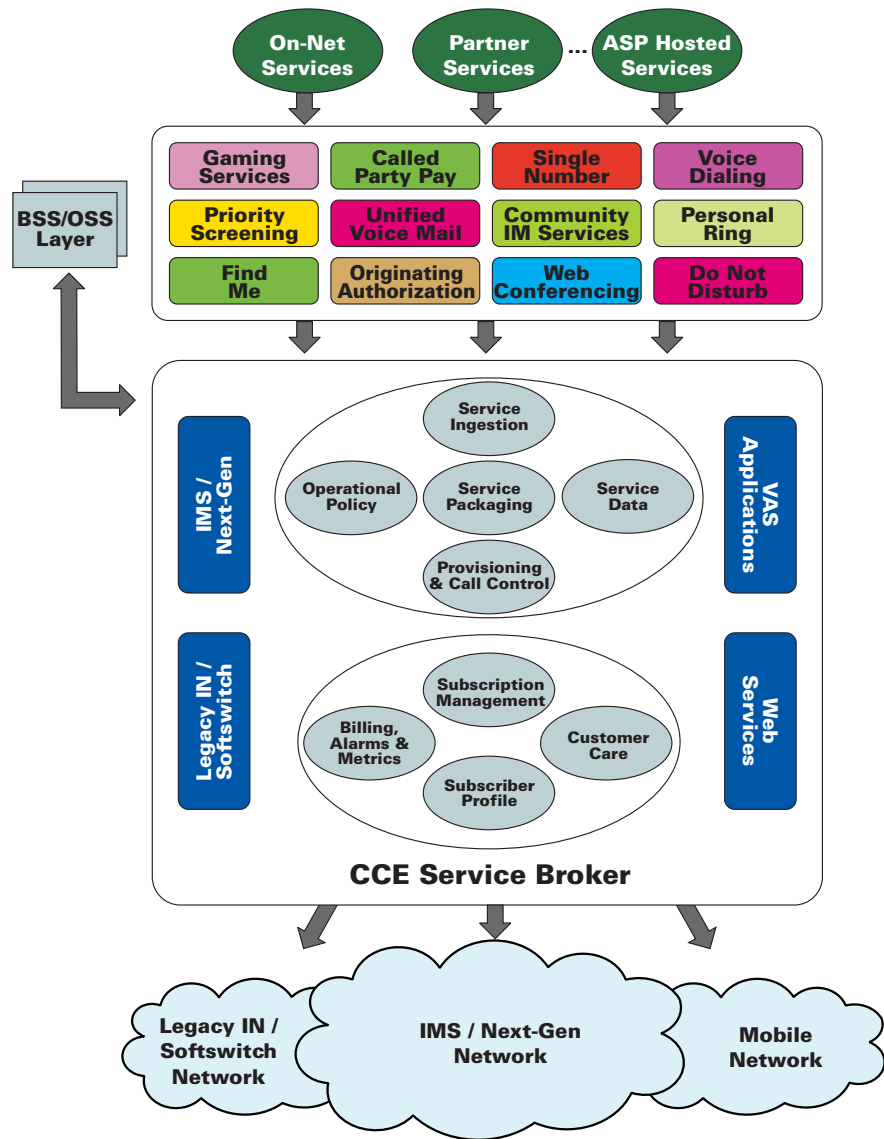
Motorola CCE is comprised of two distinct but related products — Motorola CCE Service Broker and Motorola CCE Content Manager. Each product consists of a core network and operations platform that can be deployed in multi-vendor, multi-technology environments, interfacing with various dimensions of a service provider's infrastructure, including back-office systems, real-time network elements, and distributed application servers.

Motorola CCE Content Manager

Motorola's CCE Content Manager is a carrier-grade platform designed to help manage and deliver any content, anywhere and on any device. It allows operators to package a wide variety of multimedia content, including live TV channels, Video on Demand (VOD), and other premium broadband and mobile content such as music videos, games, and applications.

CCE Content Manager presents service providers with a comprehensive suite of management functions aimed at maximizing the revenue potential of content services. By offering tremendous flexibility in differentiating subscriber offerings, enhancing the level of personalization, and simplifying the end-user experience, the platform helps foster increased customer acquisition and retention. By providing a breakthrough combination of sophisticated functionality that enables user-specific content packaging, targeted promotions, and context-sensitive advertisement campaigns, CCE Content Manager not only helps service providers manage the complete subscriber experience but also opens up new revenue opportunities.





Motorola CCE Service Broker

CCE Service Broker provides a unified platform for allowing carriers, mobile operators, and cable operators to rapidly create, manage, and deliver converged video, voice, and data service bundles across multiple networks and devices. It uses a repeatable, wizard-driven process for bringing new applications into a service provider's environment. This process involves defining the network and the administrative interfaces required to deploy and manage an application. Once an application has been encapsulated, it is treated as a deployable service. The association of application to service is not necessarily one-to-one, and a single application can be leveraged to provide many services.

Service Broker's unique position as a unifying layer between Operation Support Systems (OSS), Billing Support Systems (BSS), and access network infrastructures enables the maximum leverage of both past and new investments in networks and services. Service packaging is used to define the combination of multiple services from underlying networks and systems into converged service offerings.

Additionally, CCE Service Broker provisions subscribers against specific, service-offering versions, allowing operators to tailor offerings to particular customers and/or market segments. It offers a unique methodology that reduces the impact on back-office systems at the time services are introduced and during ongoing service management. By providing single integration points to back-office systems for provisioning, billing, metrics, reporting, auditing, alarm collection, and revenue assurance, Motorola enables the service architecture to be managed as an overall solution rather than as discrete components.

This service brokering approach acknowledges that services will be developed by multiple vendors, run on different platforms, and require various protocol interfaces. Service Broker is not tightly coupled with any particular application creation technology. It integrates applications based on different technologies such as

SIP, IMS, Web Services, and Parlay. CCE Content Manager centrally manages and automates the acquisition, packaging, and bundling of content, including specifying revenue share arrangements with content owners. It also enables the development of cross-domain promotions (e.g., buy a VOD offering and get voice minutes or ring tone free).

Built for Service Providers

Motorola CCE is a low-risk solution that allows service providers to handle millions of transactions monthly while creating a differentiated subscriber experience and monetizing multimedia services. It allows network operators to keep up with swiftly changing advertising delivery opportunities while adopting new technologies without abandoning previous investments. Network operators can deliver the services subscribers demand when they demand them to the device(s) of their choice. Motorola CCE allows carriers, cable operators, and mobile operators to swiftly deliver a broad range of compelling content and services and monetize the value of these services across multiple network environments.

Operators gain significant benefits in terms of streamlining the content supply chain management and reducing the content publishing cycle from weeks to hours. The Motorola CCE solution allows integration of communications (VoIP/IMS) and converged content services such as IPTV, mobile, and broadband content, enabling triple/quadruple play service offerings in fully converged environments. By leveraging best-in-class applications irrespective of their underlying technologies, service providers can offer a broader range of enhanced services and deliver them in a subscriber-centric model for increased adoption and service penetration.





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