



Profitably Delivering Personalized 3-Screen Multimedia Services

Monetizing the SDP Investments





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Abstract

Past investments in Service Delivery Platform/Framework (SDP) infrastructure have typically been justified by streamlining operations and allowing faster time to market with new services. However, we have now reached the point where SDP must evolve from a technology framework to a business solution that resolves critical business issues via rich and compelling subscriber experiences. The Motorola SDP enables personalized subscriber experiences that feature converged, 3-screen multimedia experiences as well as the advertising and rating mechanisms that enable traditional and alternative revenue models. Motorola's SDP goes far beyond the expected essentials of a Service Oriented Architecture (SOA) architecture to provide a highly scalable metadata control plane that coordinates subscribers, content, services, devices, and advertisements.

Introduction

Escalating demand for current and next-generation services presents network operators with exciting opportunities for expanded revenue streams, as well as significant technical and operational challenges. Service providers continue to invest significant resources into the adoption of the Service Delivery Platform/Framework (SDP) architecture, which provides them with the flexibility to respond to the rapidly changing competitive landscape. SDPs, as with any new architecture, must evolve past their initial technological value, to establish their solution value. By providing significant capability for monetizing the SDP investment, Motorola's SDP technology is uniquely positioned to provide meaningful solutions to subscriber and service provider needs.

Both consumers (for media and entertainment) and commercial users (for productivity applications) have embraced services that enhance the ways they live, work, and play. The common attributes of successful services are repeatedly shown to be ubiquity, ease-of-use, novelty, and cost-effectiveness.

As Metcalf's law states, as the value of a network grows with the size of that network, so too do the services that ride on such networks. From recommendations to media sharing to work place or entertainment collaboration, the value and take-rate for a service tends to grow as the population using the service expands. Importantly, the revenue model for a service must evolve considerably in the current age of rapidly changing customer expectations, shortened life-cycles, and advertising subsidization.

The key benefit of the Motorola SDP for service providers is flexibility. Motorola's flexibility manifests itself in a number of ways that specifically relate to the most important Market Needs:

Flexibility	Market Need	Service Provider Benefit
Convergence of wireless, TV, and wireline	Ubiquity of services	Standards-based cross domain inter-operability to capture maximum ARPU and to cross market to and from the subscriber domain of preference
Rapid new service introduction	Novelty of services	SOA-based architecture enables differentiation through first-to-market speed (or fast-follower catch up), rapid and continuous enhancements, and third-party integrations
Personalized and simple UI	Ease-of-use services	Web technology based subscriber/user UI with default presentation of personalized "found" content, including services, social networking, and advertising.
Multiple revenue model support	Cost-effective services	Support for subscription, transaction, and subsidized revenue model to pursue niche or mass markets throughout the service life-cycle

Service providers have responded to the market's needs by investing in new technologies. Profitably delivering multimedia services, however, is becoming less of a technology challenge and more of a delivery challenge: how to create differentiated offerings that increase Average Revenue Per User (ARPU) and subscriber loyalty, which lead to steady streams of recurring revenues.

Making Multimedia Services Attractive

Consumers are presently overwhelmed with the wide variety of offerings available through both the traditional and the rapidly growing community of Internet and value-added service providers. While the result is the rapid availability of new and 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 who understand their specific needs and interests and deliver these services in a customer-friendly manner. Service providers, therefore, have a key asset in their long-standing consumer relationships. To be successful, service providers must transform their business models and become digital merchandisers who can quickly stock new services and content to profitably exploit market opportunities to broad and niche markets alike.

To secure customer loyalty, as many nimble Internet/Web competitors have done, service providers need to build upon their core network assets by constantly refreshing their services and delivering them in a personalized way across one or more storefronts (TV, Web and/or mobile), along with targeted advertisements, promotions, and personalized/relevant incentives. The traditional model, in which services were delivered to individual devices in a silo fashion (often by multiple providers), has changed. With convergence, blended services can be delivered across multiple devices and networks, thus maximizing ubiquity, customer ease-of-use, and service provider revenue opportunities. Thus, service providers must establish themselves across all devices as the preferred landing page for targeted services. They need the ability to present subscribers with the ability to quickly search, browse, preview, and purchase relevant content on any device for consumption on the same or another device.

Key elements to providing customers with a value-added navigation mechanism include the delivery of a storefront landing-page across 3 screens, and the personalization of the page to include services of interest to the customer. To accomplish this goal, the service provider must use available information about the subscriber's devices, subscriptions, preferences, location, etc. to pre-search all available services and present only those services (and ads) that are relevant to the customer's criteria. Doing so provides a more compelling experience for the user and advertiser alike.

Motorola SDP enables service providers to customize services by:

- Rapidly introducing revenue-generating data, voice, video, and multimedia services
- Personalizing the marketing of services across 3-screens
- Efficiently managing application resources (both internal and third party)
- Significantly reducing ongoing integration costs
- Enabling constant deployment of best-in-class services
- Effectively optimizing network investments

Model Sensitivity to CPE Price and Subscription Revenue

Motorola SDP solutions enable the rapid deployment of personalized, converged multimedia offerings with relevant advertising. The centralized metadata model and SOA architecture enable rapid deployment of innovative service bundles via the unified storefront and significant operational automation. It is this end-to-end enablement of converged services across multiple domains (TV, Web and Mobile) that empowers differentiated service creation, marketing, scaling, and business model evolution.

Motorola's SDP enables expanded revenue generation through the flexible use of a variety of business models, both in how converged services are delivered and how they are marketed and managed. For example, the Motorola SDP 3-screen unified storefront supports the extension of services to 3 screens, with advertising and promotional capabilities to continuously increase ARPU, by allowing service providers to deliver seamless media mobility across:

- User interfaces/content guides
- Content formats
- Network protocols

- Data rates
- Access networks

A dynamic and flexible Storefront is insufficient to lock in customer loyalty, however, and the entire complex value chain must be actively managed to ensure a profitable business model. The Motorola SDP metadata and SOA capabilities enable efficient partner management, which leverages a shared subscriber profile and a common experience across devices and access networks. Service providers can:

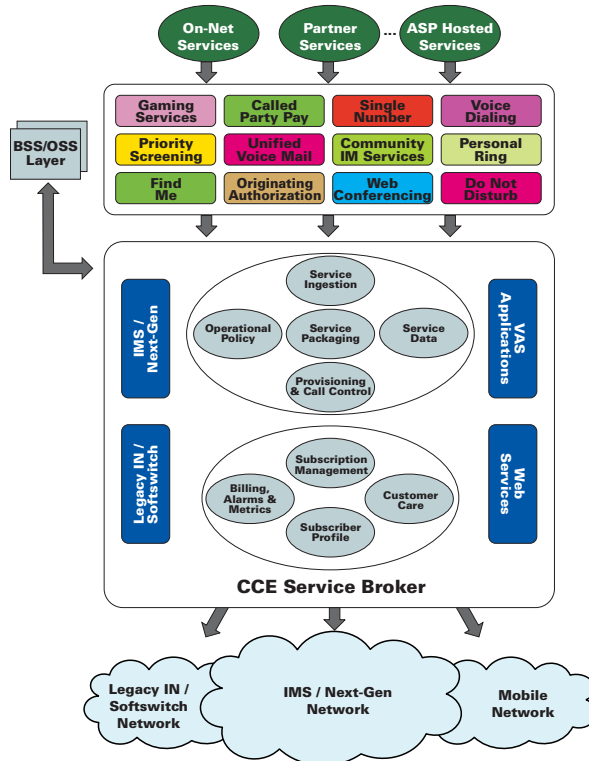
- Encourage and increase customer loyalty
- Enable subscriber personalization
- Rapidly incorporate new services
- Rapidly incorporate new partners into offerings

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

Services Where and When the Subscriber Wants Them

Providing a ubiquitous and easy-to-use services storefront landing page is essential for enabling service mobility. Service mobility allows subscribers to take a service with them throughout their day, in addition to attracting subscribers from any specific domain of their preference. Enabling service mobility across wireless, wireline, and Broadband networks is facilitated by the Motorola SDP in two principle ways:

1. Extensive use of metadata to define, market, and manage service bundles across multiple systems and partners
2. Extensive use of SOA technology, and a robust transaction bus, to facilitate cross silo and partner service execution



The Motorola SDP enables wireline, wireless, and cable network operators to rapidly conceive, design, package, deploy, and manage a broad range of compelling services. Motorola SDP provides a unified environment for managing and delivering communications and content services regardless of access infrastructure. The Motorola SDP utilizes a significant number of messaging adaptors for service execution (among them MM7,

MM3, SGIP, SMPP, WAP/PAP, HTTP, SMTP, FTP, and Web Services) for communication with SMSC, MMSC, WAP, and SS7 Gateways. The SDP also utilizes adaptors for authentication (including RADIUS, LDAP, HSS) and billing (iPDR) to interface with both prepaid and post paid billing systems.

Enabling Multiple Revenue Models

Cable operators, telecommunications carriers, and mobile operators all want to evolve their revenue models as they expand their portfolio of services. Subscription-based TV needs to accommodate transaction based video-on-demand (VOD), while transaction-based Long Distance telephony is moving towards subscription based toll, local, and data plans. Of course, all service providers are exploring the Internet model of advertising subsidization. The Motorola SDP provides significant capability in meeting these needs, by using metadata to align the characteristics of services, subscriber groups, advertising and Multimedia content to augment the billing system.

Importantly, Motorola's SDP infrastructure provides tools for the complete service revenue life-cycle, including:

Revenue Model	Detail
Subscription rating	Support for daily, weekly, monthly, annual and metered use Subscription (Ex. Subscription VOD)
Transaction rating	Support for a wide range of "per-use" rating, including usage beyond usage included in a subscription
Promotional price rating	Managing Service life-cycle through initial and ongoing target marketing, as well as life cycle extension through discounting and promotion: target market discounts, volume discounts, buy x get y free (or % off)
Personalized advertising	Aligning service subscribers with ad that are of interest to minimize experience impact and maximize CPM

The Motorola SDP capabilities listed above provide service providers with significant flexibility in building their revenue models. Service providers can use these capabilities to control the targeting of pricing schemas, price points, promotions, and ads based on specific subscriber profiles, demographics, geographic/market areas or purchase histories. Several examples include:

- Vary advertisements and pricing based on subscriber profiles, subscriber memberships (e.g. personalization options to Sci-Fi, astronomy, or home building), geographic/market area, or purchase history.
- Expand the marketing effort with cross-selling/up-selling content and "off-net" goods while opening new revenue sources, such as sponsored ad revenue.
- Coordinate subscriber target marketing across Web, TV, and Mobile domains, leveraging the strengths of each to maximize marketing and advertising impact.
- Coordinate multimedia marketing tools by combining personalized ad/promo presentations with e-mail/SMS notifications and differentiated pricing, embedded in services and across all 3 screens.
- Dynamic personalization of local advertising insertion into on-demand videos, time-shifted videos, and linear TV.

Importantly, the Motorola SDP solution's core SOA design provides the means to interface with third-party resources, such as recommendation engines or search engines, to allow adoption of best-in-class capabilities as they emerge in the marketplace.

Benefiting from A Metadata Control Plane

Motorola's SDP solutions enable wireline, wireless, broadband, and cable operators to package, bundle, deploy, and manage a broad range of services across a wide range of service technologies, including TDM, AIN, QAM, IP, SIP and IMS SIP. Operators can compete through innovation and differentiation. Fulfilling one of the key promises of the SDP movement, Motorola's SDP solutions provide the means to offer communications and content services over an access-neutral architecture by implementing a robust metadata control plane in the service provider's back office.

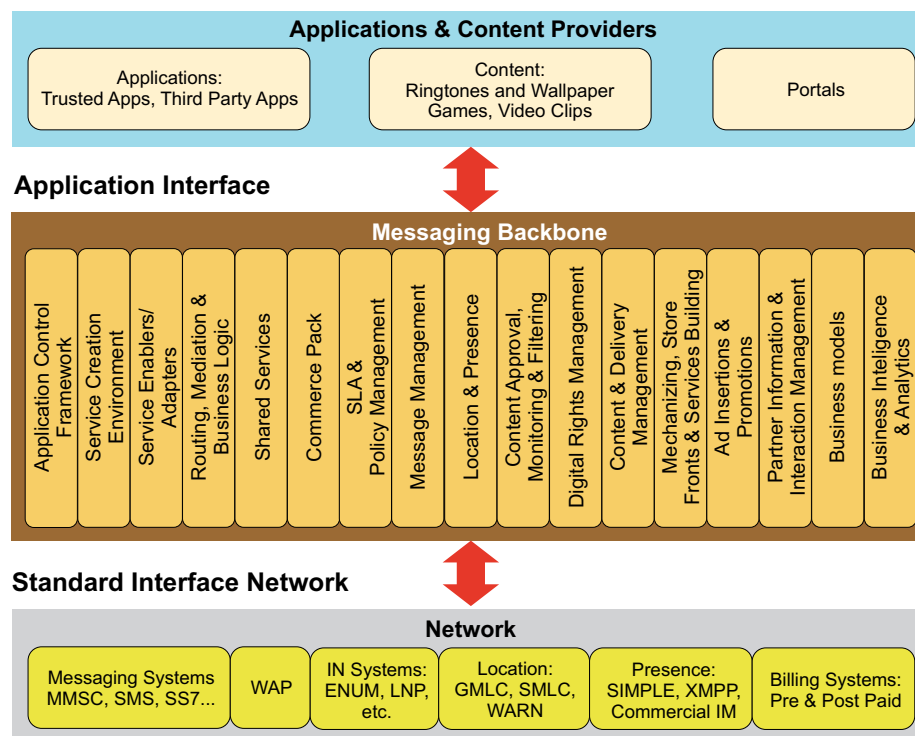
The Motorola SDP provides operators with a metadata-driven service model that operates through an open integration framework with role-based security. This feature-rich, product-based solution is based on carrier-grade scalability and availability, and it supports key industry standards.

Benefiting from a SOA Architecture

Introducing profitable new services quickly and efficiently and delivering them to subscribers across wireless, wireline, and broadband connections is taxing legacy systems and forcing major redefinitions of operators' business models. Heterogeneous legacy environments typically do more than just drain human and financial resources; they also hinder the vital business agility necessary to stay one step ahead of the competition.

The Motorola SDP provides an end-to-end Service Delivery Platform based on a Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) implementation to provide a cost-effective yet highly scalable real-time performance execution platform. The pervasive use of such open technologies allows for rapid integration with standards-based and proprietary interfaces alike, maximizing investment protection.

Motorola Global Application Management Architecture (GAMA) Service Delivery Platform



Implementing Motorola SDP Solutions

Motorola's SDP solutions include three distinct but related products: Motorola GAMA, 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 GAMA

The Motorola Global Application Management Architecture (GAMA) is an innovative, end-to-end Service Execution platform that includes network infrastructure, middleware, and end-user applications. The platform is designed for low latency, high availability, and high capacity and meets the needs of the next generation of services.

Motorola's solution enables flexible applications development and integration by supporting numerous industry standards, including OMA, WAP, and HTTP, among others. The solution also includes the Motorola GDS (Geographic Data System), a mapping solution that provides terrain, street, building maps, and point-of-interest data, as a fully integrated offering. The flexible software architecture for Motorola LBS (Location Based Services) enables Motorola to support different business processes and revenue models.

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, 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; it also opens up new revenue opportunities.

Motorola CCE Service Broker

Motorola's 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.

CCE 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.

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

The Motorola SDP 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 SDP 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 SDP 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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