



Comverse Mobile Internet Hub

Unleash Your Broadband Potential

Data Market Trends: Massive Growth Sets the Stage for New Opportunities

While numbers vary slightly from analyst to analyst, the trend is unmistakable: mobile data usage is soaring.

Currently telecom's most dynamic asset, mobile data is growing exponentially.

Year-over-year consumption has been doubling for several years running. With this torrid pace forecast to extend to 2014 and beyond¹, mobile data services are on pace to generate more than \$500 billion in global revenues for mobile carriers by 2015² – a breathtaking increase of hundreds of billions of dollars a year over the levels of just a few years before.

Among the key traffic drivers are new 3G-enabled mobile devices. More than 90% of smart phone owners in mature markets now pay for Internet access³, with video content accounting for an ever-increasing proportion of the traffic.

The dramatically expanding popularity of the mobile Web poses a wide range of pressing challenges for CSPs (Communication Service Providers). Network congestion raises acute issues of capacity and performance impacting on the user experience, and the persistent gap between traffic and revenues heightens CSP awareness that they cannot let traffic flood their networks without ensuring that revenues follow.

Comverse Mobile Internet Hub addresses the concerns of today and beyond.

Mobile Internet Hub: Jumping Over the Hurdles of Today's Mobile Broadband Challenges

Comverse Mobile Internet Hub (MIH) is a highly advanced solution allowing CSPs to manage and monetize mobile broadband traffic while ensuring a high quality user experience at

1 <http://www.digitaltrends.com/mobile/mobile-data-to-double-every-year-through-2014-cost-carriers-50-billion/>

2 <http://wirelessfederation.com/news/35631-global-data-revenues-to-reach-500-billion-by-2015/>

3 http://www.parksassociates.com/press/press_releases/2011/mobiledata.html

all times. The solution manages all traffic types generated by a wide range of mobile devices, such as connected laptops and netbooks, smartphones and feature phones.

It offers CSPs a modular end-to-end framework based on three fundamental layers: **Policy Enforcement**, **Policy Management**, and **Data Charging Enablement**.

- **Policy Enforcement:** Includes a broad set of enforcement services designed to improve data monetization, enhance the user experience and tighten network control. Using MIH enforcement services, CSPs can execute a wide range of traffic management and smart monetization policies, implemented dynamically, according to network status and user profile.
- **Policy Management:** Centralized decision point supporting quick and easy definition of multiple business scenarios, such as tiered services, fair usage & quota management, bill shock prevention and congestion management. The MIH Policy Management solution is compliant with 3GPP PCRF standards (Release 9) and is open for standard integration with external network elements where required.
- **Data Charging Enablement:** Supports real-time and near real-time data charging services. The charging service can be pre-integrated with the Comverse ONE Billing & Active Customer Management, and may also be integrated with any other billing vendors using a standard Diameter Charging API.

The tight integration between the three pillars allows CSPs to easily jump the hurdles of today's mobile broadband challenges, with fastest time to market and lowest related costs.



Policy Enforcement

The Policy Enforcement layer includes the following groups of services and capabilities:

Traffic Management and Optimization

One of the core pillars of enforcement services, Traffic Management & Optimization allows CSPs to control and manage traffic levels, assuring maximum network utilization and a smooth, reliable user experience.

- **Video Optimization:** Provides end-to-end intelligence for efficient delivery of video traffic using best-of-breed video and mobile technologies, including device-aware, network-aware and content-aware optimization techniques, such as video transcoding and trans-rating.
- **Traffic Optimization:** Provides faster access speeds and consistent service quality; letting users enjoy an optimized mobile Internet experience over all wireless data networks using all devices: desktops, laptops, smart phones and feature phones.
- **Traffic Shaping & Prioritization:** Manages traffic loads and enables operators to apply fair usage policies and dynamically handle traffic per service or source based on a variety of parameters: user context, application QoS context, network conditions, etc. Service is enabled by the MIH integrated Deep Packet Inspection (DPI) technology.
- **Congestion Management:** Detects cell congestion and poor user experience. Applies various corrective actions, such as video optimization and traffic shaping, to dynamically relieve congestion and ensure a high-quality user experience.

Mobile Browsing and Streaming Management

This group of enforcement services includes comprehensive browsing and streaming management capabilities, such as access control and session enrichment. Operators deploying this solution can provide users with a personalized browsing & streaming experience while maintaining tight network control.

Content Adaptation & Filtering

A good user experience is key for increasing mobile Internet usage, penetration and revenues. This group of services includes content handling services aimed at enhancing the user experience through assuring best service quality:

- **Content Adaptation:** Real-time adaptation of content sources enables an optimal browsing and streaming experience on any

website and helps deliver an intuitive off-portal Web experience

- **Content Filtering:** Enables parental control and pre-defined content for specific audiences

Policy Management

The best-of-breed 3GPP PCRF (R9) compliant MIH Policy Management solution is designed to address a broad range of data challenges. Using the Policy Manager, CSPs can swiftly define the most comprehensive business and operational decisions based on real-time information retrieved from multiple sources, including session, transaction, device, subscriber data base, billing servers and network elements such as RADIUS and LDAP.

Supported cases include:

- **Tiered Services:** Supporting easy definition of different CoS/ data plans with multiple parameters: application type, content and URL, allocated bandwidth, quota and more.
- **Smart Charging:** Enabling CSPs to charge users by multiple parameters, such as time of day, application, content type, network status and more.
- **Quota Management:** Allowing CSPs to define and manage quotas at multiple levels such as application, content type, time of day, and more.
- **Bill Shock Prevention:** Enabling CSPs to send custom notifications via http redirect or SMS, in different quota and balance thresholds, encouraging users to upgrade their plan or top-up their account.
- **Promotions and Up-sells:** Facilitating dynamic user promotions based on real-time subscriber and network parameters. e.g.: half-price video during idle times in network
- **Congestion Management:** Enabling CSPs to manage congestion dynamically, applying different related policies (e.g.: traffic shaping; video optimization) to relieve the network load and to enhance the data experience
- **Access Control:** Enabling CSPs to define policies regarding limiting or blocking data access in predefined situations/ events.

MIH Policy Management is can be tightly integrated with MIH the charging enablement and enforcement elements providing CSPs with single place for policy definition. Moreover, it can be tightly integrated with Comverse ONE Billing and Active Customer Management solution, facilitating a Multi-Dimensional approach to Policy Management that is both network- and subscriber-aware.

At the same time the solution is open for standard integration with external network and IT elements where required.

Data Charging Enablement

The eroding access margins and the need to generate new premium revenues require mobile operators to introduce new business models and data plans that will be more appealing to different groups of users, and will reflect the load that different applications place on the network.

Comverse MIH offers a rich set of post and prepaid charging capabilities, allowing differentiation of applications and services and enabling premium revenues on top of access.

The following services and capabilities are included:

- **Online Charging Schemes:** Allows CSPs to charge by volume, event and/or duration. CSPs can introduce differentiated real-time charging in high granularity: per application type, time of day, URL group, quota status, network status and more.
- **Quota Management:** Provides a flexible & dynamic quota management mechanism that enables CSPs to define different quota types (time /volume) and manage them according to multiple static and dynamic parameters: application, content/ URL, time of day, network status, etc. The service also allows CSPs to send notifications and take different enforcement actions (e.g.: shape, redirect, block) in different quota thresholds.

Internet at Its Best for Users and CSPs

Comverse MIH creates an optimal ecosystem for users and operators. Benefits for users include:

- **Flexible Data Plans:** Service personalized to user needs and preferences
- **High-Quality Service:** Smooth and reliable mobile broadband experience

- **Enhanced Data Experience:** Customized services such as content filtering and content adaptation, in-session notifications, full plan control via self care portal

Benefits for CSPs include:

- **Enhanced Network Control:** Reduces network congestion and network-related costs and ensures high service quality through effective traffic management & control tools
- **Increased Service Revenues:** Allows operators to define sophisticated cross services policies and construct segmented data plans that support premium revenues generation

Comverse: Extensive Expertise

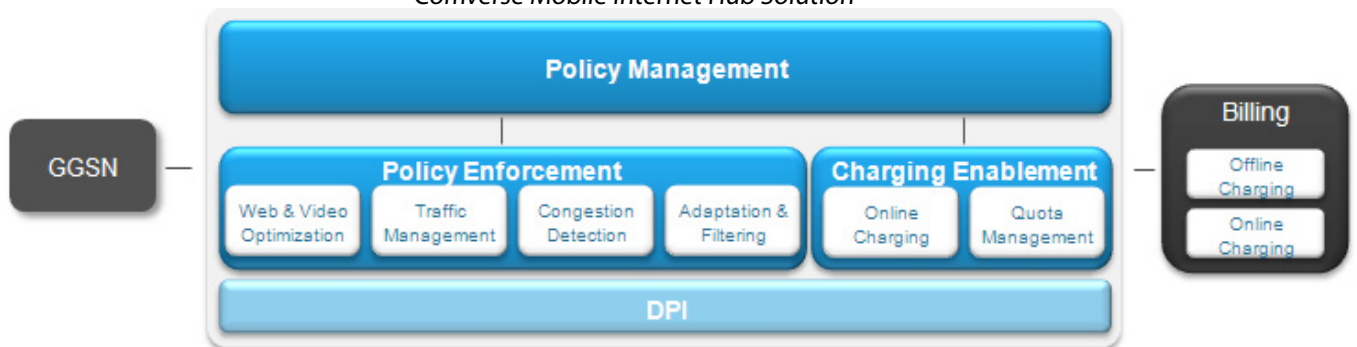
Comverse Mobile Internet Hub serves the needs of CSPs around the world, managing, enriching and monetizing user data activity.

With deep-rooted mobile data DNA, Comverse MIH is a natural choice for managing mobile broadband traffic

- **Centralized Management, Monitoring and Provisioning:** Rapid deployment over the Mobile Internet Hub platform; centralized management through the Policy Management
- **Enhanced Monetization:** High flexibility and short time to market in defining and enforcing segmented data plans
- **Low CAPEX and OPEX:** Best-of-suite solution with rich comprehensive functionalities
- **Powerful Platform:** Highest capacity, 99.999% referenced availability, proven in some of the globe's heaviest data traffic markets

The world's largest BSS and VAS provider with extensive proven expertise, Comverse is the best choice to leverage operator capabilities in the data arena to help the operator achieve greater success in its marketplace.

Comverse Mobile Internet Hub Solution



About Comverse

Comverse is the world's leading provider of software and systems enabling value-added services for voice, messaging, mobile Internet and mobile advertising; converged billing and active customer management; and IP communications. Comverse's extensive customer base spans more than 125 countries and covers over 450 communication service providers serving more than two billion subscribers. The company's innovative product portfolio enables communication service providers to unleash the value of the network for their customers by making their networks smarter.

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