

Use Case

Femtocells

Today, 60% - 80% of mobile calls and data services originate inside homes and buildings as mobile becomes the primary communications device for subscribers. However, indoor wireless coverage is often limited by building materials and urban canyons, leading to a frustrating user experience.

Femtocells – mini low-powered “cell-sites” that connect mobile devices to the network through a wireline broadband connection – offer an attractive, cost-effective solution to the problem with benefits for operators and subscribers alike including:

- Significantly improved indoor mobile coverage, with an expanded footprint and a superior user experience for both voice and data services;
- Alleviating 3G network congestion by offloading data traffic to femtocells, reducing the burden on mobile networks and offering a better user experience; and
- Landline displacement, as mobile operators lead the fixed-mobile convergence charge.

Bridgewater’s solution for femtocells enables secure authentication, authorization, and accounting with end-to-end security. Proven with tier 1 operators, it offers geo-fencing applications, quality of service prioritization, device provisioning, and accounting and metering services to support billing plans.

Femtocell Opportunities and Challenges

Reduce churn

Service providers offering femtocells to consumers can improve in-building coverage, while offloading the data burden to fixed line networks. With 3G network congestion and poor indoor coverage leading factors in consumer churn, operators now have a viable business model for subsidized femtocell deployment.

Reduce costs and increase revenues

The huge growth in mobile data traffic makes data offload an attractive proposition for service providers. Femtocells offload mobile data to fixed networks, potentially reducing both opex and capex through lower required investment in network capacity. Femtocells also offer mobile service providers the opportunity to gain a greater share of wireline spend by increasing in-building service quality and accelerating the fixed to mobile transition.

Challenges

Service providers need to address several requirements in managing femtocell device access to the 3G network including:

- Authentication and authorization of femtocell hardware and subscribers across both 3G and wireline networks.
- Tracking of subscriber femtocell usage.
- Ensuring Quality of Service by maintaining or improving service levels as the subscriber moves to a femtocell.
- End-to-end security – robust key management and authentication services as well as geo-fencing applications.
- Quality of Service prioritization for high bandwidth applications such as streaming media.
- A common database to manage both subscriber devices and femtocells.

Solution

Bridgewater’s femtocell solution includes:

- The Bridgewater® Service Controller anchored by Bridgewater’s Subscriber Data Broker,™ which securely and transparently re-authenticates and re-authorizes subscribers and performs critical accounting functions as they move from a congested 3G network to a femtocell. It federates subscriber data from existing HLRs and caches that data to ensure fast and secure access to femtocells.

Additional features include:

- Support for wireline offload to femtocells from 3G devices such as the iPhone, smartphones and datacards.
- Device entitlement management – provisioning, re-registration, firmware updates, geo-fencing and simultaneous sessions.
- Multi-access support for 3G and 4G solutions, ensuring a future proof solution.
- End to end security – encryption, authentication, authorization and key management.
- Carrier-grade solution including quality of service prioritization, device management and accounting functionality.

Benefits for Service Providers and Subscribers

- **Better user experience** – reduces the cost associated with subscriber churn, increases subscriber loyalty and encourages spend on mobile content and services while providing a transparent subscriber access experience.
- **Mobile data offload** – reduces the burden on the wireless network and associated opex/capex by offloading data throughput to the wireline network.
- **Accelerates fixed mobile displacement** – by providing a higher quality of service indoors than previously available within guaranteed SLAs.
- **Hierarchical management** – of both devices and subscribers from a common platform with the Bridgewater® Service Controller anchored by the Bridgewater's Subscriber Data Broker™
- **Carrier-grade service control** – provides superior performance, including both device and subscriber support and support for flexible authorization parameters.

The Bridgewater Advantage

Carrier-grade with proven support for femtocell deployments

Bridgewater offers an extensible solution for femtocell deployment that supports this rapidly evolving market. With deployments at tier 1 service providers, Bridgewater's femtocell solution supports a few thousand to millions of subscribers.

Common platform for femtocell deployment

Bridgewater's femtocell solution provides a common policy-based platform for authentication, authorization and accounting to manage subscribers and devices, adhering to stringent standards-based security requirements for femtocell access points.

Vendor Neutral

Bridgewater provides a best-of-breed femtocell solution that supports multiple vendor equipment types simultaneously. By deploying a vendor agnostic solution, service providers can avoid vendor lock-in, exploit economies of scale, and leverage existing investments.

Integration within service provider's existing data services ecosystem

Supporting operations, administration and management significantly reduces time to market for service introduction, with a common subscriber management capability. Bridgewater's femtocell solution enables modeling of devices and subscribers allowing service providers to use a common approach to managing authentication and authorization for individuals and femtocells.

Broad Interoperability

Bridgewater has completed extensive interoperability testing with security gateways, Home Location Registers, and femtocell vendors.

About Bridgewater Systems

Bridgewater Systems, the mobile personalization company, enables service providers to efficiently manage and profit from mobile data services, content and commerce. The company's market leading mobile personalization portfolio provides a real-time, unified view of subscribers including entitlements, devices, networks, billing profiles, preferences and context. Anchored by Bridgewater's Subscriber Data Broker™, the portfolio of carrier-grade and standards-based products includes the Bridgewater® Service Controller (AAA), the Bridgewater® Policy Controller (PCRF) and the Bridgewater® Home Subscriber Server (HSS). More than 150 leading service providers including America Movil, Bell Canada, Clearwire, Cox, Hutchison Telecom, Iusacell, Scartel, SmarTone-Vodafone, Sprint, Tata Teleservices, Tatung, Telmex, Telstra, and Verizon Wireless use Bridgewater's solutions to rapidly deliver innovative mobile services to over 150 million

subscribers. For more information, visit us at www.bridgewatersystems.com.

Company Headquarters

303 Terry Fox Drive Suite 500
Ottawa, Ontario
Canada K2K 3J1
P: +1 613 591 6655
F: +1 613 591 6656

European Office

Albany House
324 / 326 Regent Street,
Suite 404, London,
United Kingdom W1B 3HH
P: 44 (0) 118 925 3298
F: 44 (0) 118 925 3299

Asia Pacific Office

Suite 211/250 Pitt Street
Sydney, NSW, Australia 2000
P: + 61 2 9283 2313
F: + 61 2 9283 3738

U.S. Office

280 Madison Avenue, Suite 912
New York, NY
United States 10016
P: +1 866 652 0471
F: +1 613 591 6656