

Prevent Mobile Data 'Bill Shock'

The surge in mobile broadband data popularity is clearly evident around the globe with the GSMA reporting that the number of mobile broadband connections had reached 100 million worldwide.

As subscribers become increasingly reliant on mobile data, they are now responding to the fact that they are unaware of how their application downloads and roaming behavior are translating into the data charges that appear on their monthly bills. This is evidenced by European Union (EU) regulations designed to protect subscribers while roaming, and the Federal Communications Commission's (FCC) consultation process on mobile bill shock announced on May 11, 2010.

The Bridgewater® Policy Controller provides an intelligent means of meeting regulatory requirements by monitoring subscriber usage thresholds in real-time — including data roaming usage. Using Policy Controller, operators can send notifications to subscribers when they are approaching their usage thresholds, and then again when they actually reach them. It also allows subscribers to set personalized usage caps and notifications, which prevents 'bill shock' and ensures that they have a positive mobile experience.

FCC Consultation Process

On May 11, 2010, the FCC's Consumer and Governmental Affairs Bureau (CGB) launched an initiative on "bill shock", calling for industry input on technical methods to alert consumers about potential high charges, increase cost transparency, and provide usage controls.

Industry has 45 days to prepare comment in one of the first initiatives undertaken by the Commission's Consumer Task Force which was launched in January 2010.

EU Roaming Regulations and Implications

In March 2009, the Industry Committee of the European Parliament voted to amend the 2007 EU Roaming Regulation to set new roaming voice call price caps that would apply between 2010 and 2012. They also proposed bringing mobile data into this legislation by introducing price caps for text messages, and suggested measures for preventing consumer bill shock from data roaming charges. On April 22, 2009, the European Parliament voted with an overwhelming majority in favour of the new roaming regulations, which will come into effect during 2010.

Central to this legislation are measures for preventing bill shock – which include roaming charge cut-off limits, proactive notifications to subscribers, and setting upper limits on data roaming charges.

"As mobile operators are tasked with ensuring tight control of subscriber activity and delivering highly personalized services to each subscriber, a dedicated policy management and control solution is a must. Not only does this enable compliance with the EU regulations around roaming limits, but it can spur revenue growth through the introduction of new services, bandwidth boosts, applications on demand and other value-adds." — **David Vorhaus, Yankee Group, April 2009**

Implications for Subscribers and Service Providers

Subscribers:

- No more mobile bill shock around roaming charges.
- More incentive to use mobile data services while traveling, and to try new applications.

Service Providers:

- **Dynamic policy controls are required** – Operators need to implement solutions that can be applied dynamically in real-time to minimize incremental operating costs associated with compliance around user notification and usage threshold balances for example.
- **Opportunity for differentiation** – Operators can seize the opportunity to differentiate their services around transparent notifications that eliminate bill shock and subscriber dissatisfaction, and self-service portals that extend personalized control to subscribers to manage their data roaming usage thresholds.

Operator Challenges

- **Balancing network protection with a superior subscriber experience** – While operators are implementing fair usage caps to protect

the network against excessive usage, the impact on user experience can be detrimental to subscriber satisfaction if bandwidth is capped without warning. By the same token, not capping usage can result in bill shock.

- **Implementing subscriber usage policies based on multiple dynamic parameters** – Implementing policies while roaming, while in the home network, and based on application type.
- **Transparency of communication** – Operators need to ensure that subscribers get multiple notifications about pending usage breaches, including meeting the requirement for the minimum set of notifications to be mandated through legislation.
- **Implementing personalized usage caps that protect against bill shock** – Operators need to determine how best to enable this across millions of subscribers, and track usage in real-time.

The Bridgewater Solution

The Bridgewater® Policy Controller is a real-time policy server that provides an intelligent and dynamic means of monitoring subscriber usage thresholds in real-time – including data roaming usage. This allows operators to automatically generate notifications to subscribers when they approach and reach their usage threshold.

- **Dynamic controls** – Because the Policy Controller can manage data usage in real-time on a per-session and per-subscriber basis, operators minimize the operational costs associated with offline analysis of subscriber usage, calls to the customer care desk from dissatisfied customers, and provisioning of usage limits.
- **Smart Caps advantage** – The Policy Controller allows operators to evolve from hard caps, which cut off services when limits are reached, to intelligent policy controls such as Bridgewater’s Smart Caps™. Smart Caps are precise controls that adjust bandwidth levels based on real-time factors such as the subscriber’s bandwidth usage during a mobile data session, roaming status, and level of network congestion.
- **Extend control to subscribers** – Coupled with a self-service portal, the Bridgewater Policy Controller can enable subscribers to set their own data roaming or usage thresholds and implement these changes in real-time so that notifications can be sent in a timely manner to avoid bill shock.
- **Charging interfaces** – Generate triggers and events required for online rating and billing. This reduces revenue leakage and improves billing accuracy.
- **Integration with Bridgewater’s Subscriber Data Broker™** Provides operators with a unified view of the subscriber including whether the subscriber is on the network, what device they are using, and if they are roaming. This allows operators to set appropriate data usage controls for when subscribers are roaming or in the home network.
- **PCRF-compliant** – Can be deployed as a 3GPP-compliant policy charging rules function (PCRF) supporting Gx and Gy interfaces for 3G UMTS/HSPA networks, evolving LTE requirements, and interoperability with leading networking vendors.

Comply with Legislation – Get the Bridgewater Advantage

Requirement	Bridgewater Solution	Bridgewater Advantage
Offer subscribers cut-off limit for data roaming charges that they can set	<ul style="list-style-type: none"> ▪ Self-service mobile portal framework integrated with the Policy Controller. ▪ Enables users to set their limits or for operators to over-ride these limits with proposed regulatory retail limits. 	<ul style="list-style-type: none"> ▪ Flexible per-subscriber limits can be set or amended at any time by the subscriber — in line with travel plans or personal financial limits. ▪ Can be applied dynamically and automatically — minimizing provisioning requirements. ▪ Avoids revenue leakage due to non-timely implementation.
Proactive notification versus hard cap cutoff	<ul style="list-style-type: none"> ▪ Multiple thresholds can be set to generate automatic notifications — i.e. at 70%, 80%, and 90% of the limit — providing more transparent communications with the subscriber. 	<ul style="list-style-type: none"> ▪ Can be generated dynamically based on a dynamic view of subscriber usage vs. after the fact analysis. ▪ Dynamic view provides more accurate and timely notifications to subscribers.

	<ul style="list-style-type: none"> Can be set according to different subscriber groups — basic notification vs. more notifications for premium subscriber services. 	<ul style="list-style-type: none"> Avoids customer complaints and increased burden on customer care personnel — reducing costs and improving subscriber satisfaction.
<p>No immediate cut off or service blocking when cap is reached</p>	<ul style="list-style-type: none"> If notification has been provided, can enable graceful downspeeding based on subscriber usage, network conditions, and other parameters. 	<ul style="list-style-type: none"> Can be applied in real-time on a session basis vs. traditional hard and soft cap approach that is less precise and can lead to subscriber dissatisfaction. Because the Policy Controller can detect when subscribers are roaming, multiple types of Smart Caps can be set — while roaming, and while in the home network, while using certain applications.

Benefits for Service Providers and Subscribers

SERVICE PROVIDER BENEFITS:

Personalized Mobile Experience - Operators can provide a personalized mobile experience for their subscribers by giving them more control over their service choices, including setting usage limits.

Transparent Communication with Subscribers in Real-time - Most average subscribers don't know their mobile data consumption and how this relates to their current plan. Operators can offer transparent, proactive notifications when subscribers are near fair usage or data roaming charge limits. Subscribers could then be given choices in real-time such as a service extension, a data usage boost, or other alternatives.

Choice in Services - Offer a broad range of service choices such as: pre-paid and post-paid plans, casual usage options like day passes or a trial period for new applications, multiple flat-rate tiers, special event-based offers, and applications on-demand.

Keep Operating Costs in Check - Apply policy controls dynamically during individual subscriber sessions to minimize incremental operating costs that can result from offline user notifications, and the offline analysis of usage threshold balances.

SUBSCRIBER BENEFITS:

More control of their mobile data experience — when at home, while roaming.

Subscribers can make changes on-the-fly when they need to reduce or increase their personal thresholds.

No more data roaming bill shock.

Personalized mobile data experience — based on wallet and personal preferences.

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.bridgewater.com.

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