

Use Case

Fair Usage

Mobile Internet usage is growing exponentially, fueled by competitive pricing plans and extensive use of smartphones and dongles to access bandwidth-intensive applications. As a result, mobile service providers across the globe are experiencing network congestion – in some cases as few as 5% of subscribers are consuming as much as 80% of the available bandwidth.

One approach to managing network congestion is the implementation of fair usage controls. Fair usage controls impose adaptive limits on bandwidth consumption to ensure that all subscribers enjoy a rich mobile broadband experience.

Situation

Service providers offer a range of data plans to their subscribers—including both flat-rate and metered plans—giving them maximum choice in how they consume services.

Subscribers to flat-rate plans expect the same experience on their mobile devices that they have become accustomed to with their legacy wireline Internet services. However, the terms and conditions associated with flat-rate mobile data plans restrict subscribers to pre-determined fair usage levels which are often in the form of monthly download limits.

When a subscriber reaches the fair usage limit, service providers typically down-speed the subscriber for the rest of the billing period. In the case of metered plans, subscribers are charged for each additional megabyte consumed.

Service providers require flexibility to support different types of mobile data plans, including the ability to transition from flat-rate, unlimited plans to tiered services and flexible metered plans based on volume or time.

Challenges

Service providers face several challenges implementing fair usage policies:

- Determining the best approach to prevent heavy bandwidth users from degrading the network for other subscribers.
- Avoiding across-the-board bandwidth caps that punish subscribers indiscriminately even when the network is not congested.
- Keeping subscribers aware of their bandwidth usage and any impending overage charges or other usage-related changes to their service.
- Effectively supporting the various types of service plans – such as flat-rate unlimited plans and increasingly, metered plans – that are required to keep pace with the competition.

Solution

The Bridgewater® Policy Controller enables service providers to enforce fair usage policies in a way that protects network resources while providing a superior subscriber experience. Supporting monthly metered plans and flat-rate unlimited plans, the Policy Controller uses Smart Caps™ precise, real-time policy controls – to enable service providers to adapt to individual subscriber behavior in real time, and reprioritize subscriber access to bandwidth depending on the levels of congestion in the network.

Support for Unlimited or Metered Plans

Bridgewater's adaptive policy approach supports fair usage management of network resource consumption on a per subscriber basis – this includes quota management for flat-rate plans, which are popular in many markets globally.

The usage patterns of the majority of mobile data subscribers are varied, alternating between low bandwidth activities such as web browsing and e-mail and higher bandwidth activities, such as video streaming. By applying Smart Caps, the Policy Controller enables subscribers to take advantage of the benefits of their plan (flat-rate or metered) by using high-bandwidth content and applications on a regular basis – even during periods of congestion.

Provided that this type of bursty usage does not continue for many hours, the Policy Controller can let the subscriber continue to use

bandwidth intensive applications without restriction. If the level of congestion increases, the Policy Controller can reprioritize the subscriber's access to bandwidth as required. During periods of high congestion, for example, these types of subscribers may have their bandwidth temporarily and "gracefully" down-speeded until network congestion subsides.

Bridgewater's adaptive policy approach also enables service providers to offer metered plans. These can be based on time or volume and tailored to tiers of services with different bandwidth consumption rates. The Bridgewater Policy Controller features a quota manager that tracks usage in real time to meter volume or time-based services. The solution also features proactive personalized notifications that inform subscribers when they are approaching usage thresholds, and provides choice such as redirection for top-ups.

Managing Excessive Usage

A small percentage of subscribers consistently engage in bandwidth-heavy usage for sustained periods. In this case, the Policy Controller can apply Smart Caps to implement a variety of fair usage controls to ensure that network resources are protected and other subscribers are not adversely affected.

The Policy Controller makes it easy for service providers to notify subscribers via SMS or e-mail that they have violated the terms and conditions of their plan. Subscribers may then choose to purchase more bandwidth or upgrade to the next plan tier. For example, subscribers can be limited to the fair usage level or prevented from using certain types of traffic for the rest of the billing period. These notification methods keep the user aware of their current usage and in control of what they do on the network.

Benefits for Service Providers and Subscribers

- **Ensures a high quality experience** - for all subscribers, no matter that price plan or tier they have taken.
- **Dynamically manages network usage** – especially for bursty high-bandwidth applications such as video or peer-to-peer.
- **Proactive notification** – via email or SMS enables subscribers to change their behaviour or upgrade to new pricing tiers, including redirection to top-up options such as daypass or downspeed.
- **Optimization** – enables network capacity to be effectively managed, reducing infrastructure investments.
- **Multiple service models** – including simultaneous support for flat rate and migration to metered plans.

The Bridgewater Advantage

Adaptive approach

Bridgewater's solution includes a unique adaptive approach to quota management that leverages real-time data regarding usage, subscriber location, entitlements, network congestion and previous behavior.

Real time

Applies bandwidth management controls in real time – based on multiple flexible parameters such as network conditions, subscriber plan, and granular access based on time of day, location and other real-time subscriber data.

Consumer protection

Fair usage controls protect all subscribers from the impact of excessive bandwidth usage, while balancing fair usage with subscriber quotas in real-time.

Precise control

Bridgewater's fair usage solution enables precise management of bandwidth consumed by individual subscribers – both within sessions and monthly.

Transparency and communication

The solution provides service differentiation by giving subscribers visibility into their bandwidth usage and enabling them to manage it via proactive notifications. Service providers can conduct in-session communication with subscribers, using SMS, e-mail, and web redirects.

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, Tatum, 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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