



Billing Systems for New Generation IP Services: IPv6

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Agenda

- The Typical Internet user
- A Provider's perspective
- Evolution of tariff models
- Requirements of a Network Billing system
- Moving billing systems to the New IP - IPv6
- Billing for content - Challenges
- Mobile Internet, applications and content delivery
 - peer-2-peer
 - QoS

The Typical Internet User

- High & Consistent download throughputs
- Bandwidth on demand
- VPN and guaranteed services
- Service Level Agreements
- Secure transport
- Exploit data-voice convergence
- Unified services (multiple access modes: dialup, leased, wireless data, inter-provider roaming etc.)



A Provider's Perspective

- *Access provider (The Edge)*
 - Multi-provider connectivity
 - Multi-service connectivity (data, voice, mobile)
 - User profiles and access monitoring
 - Service profiles for each user
- *Backbone provider (The Core)*
 - Large bandwidth; service bandwidth demands from edge sessions
 - Demands of end-to-end sessions from the edge (secure transport, Quality on demand, etc..)
 - SLAs to edge networks eg: packet latency in the core



Evolution of the Tariff Models

- Tariff reductions equivalent to hardware price nosedives
- Flat Tariff model: All you can get for 50hrs/\$10 ... revenues nosedived too
- Volume based charge + fixed charge
- $V_b + f_c + \text{local value additions (managed services)}$
- $V_b + f_c + \text{content-based differentiated tariff ?}$

Requirements of a New Generation Network Billing system

- Real-time and online
- Integrated with system monitoring and authentication mechanisms
- Online services provisioning
- Support for implementing provider agreements & policies to enable roaming
- Online user profile and credit information
- Low implementation latency for changes

Moving billing systems to the New IP - IPv6

- No more a *passive & loosely coupled device, gathering data*
- Ability to do flow-based accounting
- Session parameters change *on-demand*
- Interface (signalling+data) to flow policing devices/layers
- Interface to quality monitoring devices/layers
- Interface to content monitoring devices/layers

Moving billing systems to the New IP – Concerns

- Scope of the billing function
- Interfaces to the billing system
- Complexity
- Cost (.. as expensive as telecom billing systems ?)
- Tariff Vs Demand Vs Revenues ?
- Bilateral provider agreements Vs the *IX
- Billing infrastructure & location on the network

Billing for Content

- Billing for content
 - Content vs usage – Is this scope for quality ?
 - Billing for content implies healthy and balanced ecosystems
- Who owns the customer ? Revenue sharing ?
 - Business relationship == billing model
- Prepaid is very popular
- Will the new IP enable higher revenues and fairness of use ?

Mobile Internet, applications and content delivery

- Value added services
 - SMS based – weather, astro, news etc
 - Downloads - Ringtones?
 - Audio streaming services ?
- Peer-2-peer applications
 - Gaming, home PC access from mobile?

Content and service delivery

- Who takes the risk of service delivery guarantee ?
(did the service reach on time?)
- Content value risk (was it worth it?)

Summary

- Billing systems need to evolve to accommodate the new generation demands.
- System complexity
- Integration: providers, banks ...
- Intelligence: profile vs usage in realtime
- Unified services = unified network = unified billing ?

Questions?





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