Studying Deeper Knowledge About DPI Technology
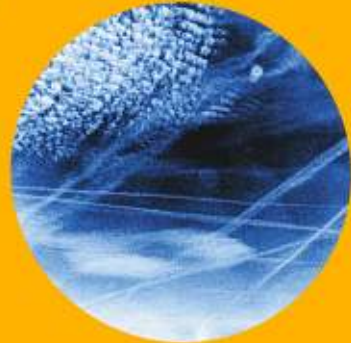
Yaniv Sulkes

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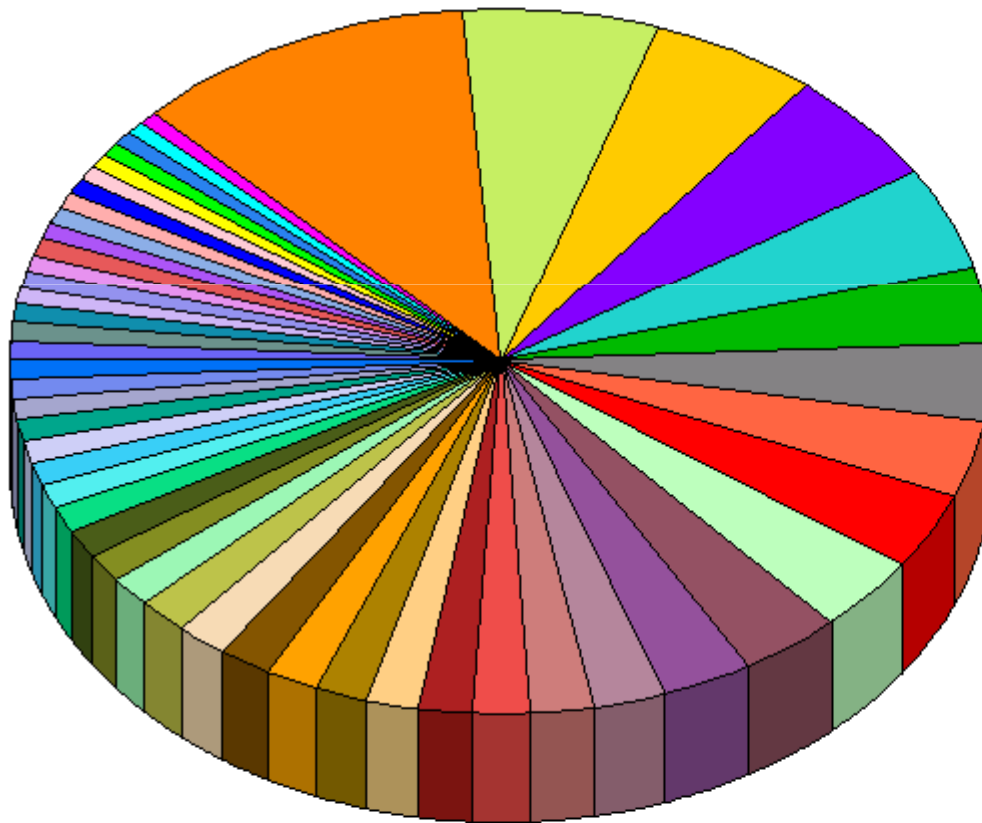
JANOG24, 7/14/2009

A World of Protocols

Classic DPI Offering

OPTIMIZE with Core DPI Services

Monitoring

Reporting

Policy Control

Quality of Service

Application Control

Subscriber Awareness

DPI Engine

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Classic DPI Offering

OPTIMIZE with Core DPI Services

Monitoring
Reporting
Policy Control
Quality of Service
Application Control
Subscriber Awareness

Core DPI Services

DPI Engine

Redefining the Role of DPI

MONETIZE with Value Added Services

- Media Acceleration
- Parental Control
- Network Security (DDoS)
- Spam Mitigation
- Content-based Charging
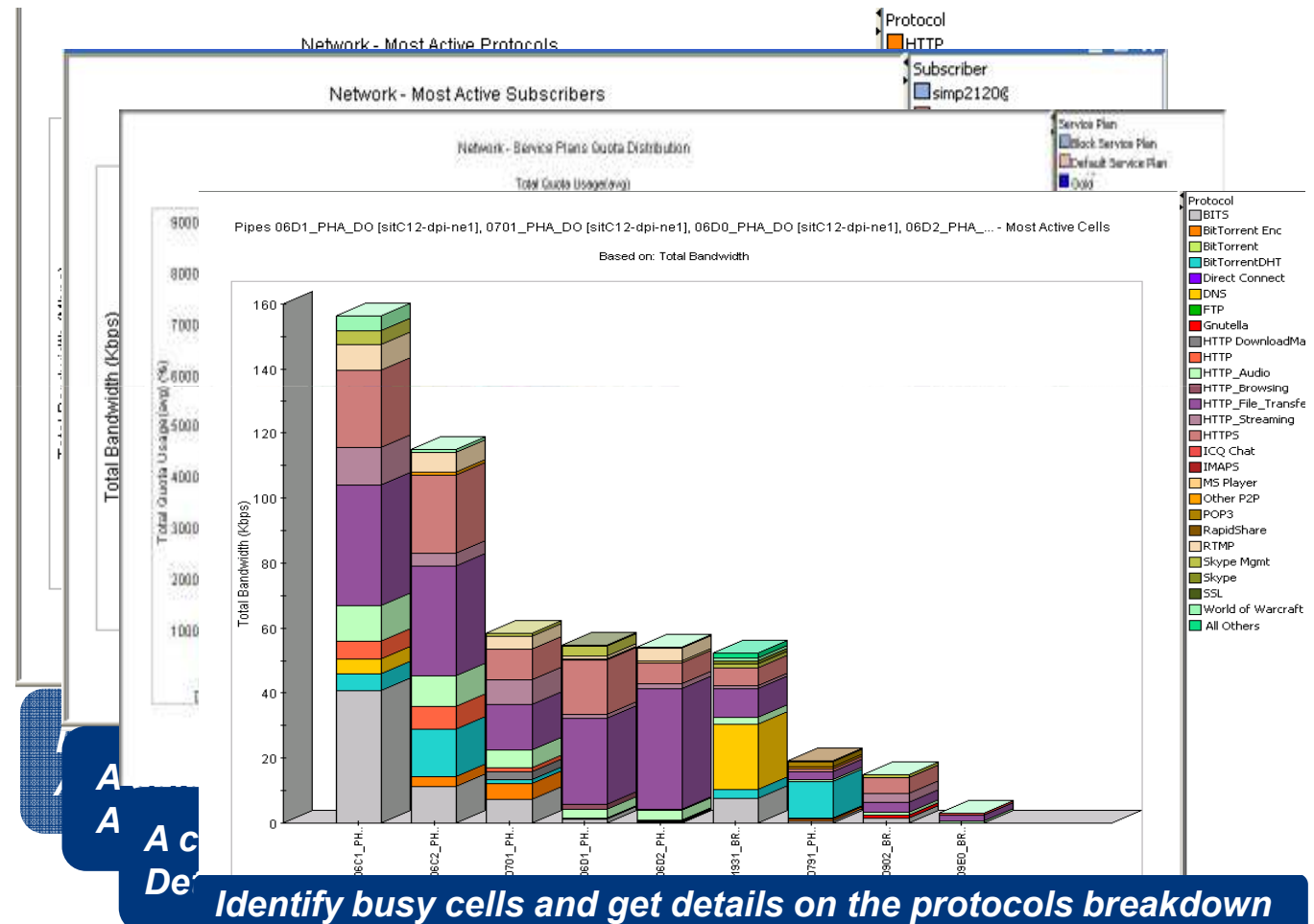- VoIP Assurance and Billing
- Future Service

Core DPI Services

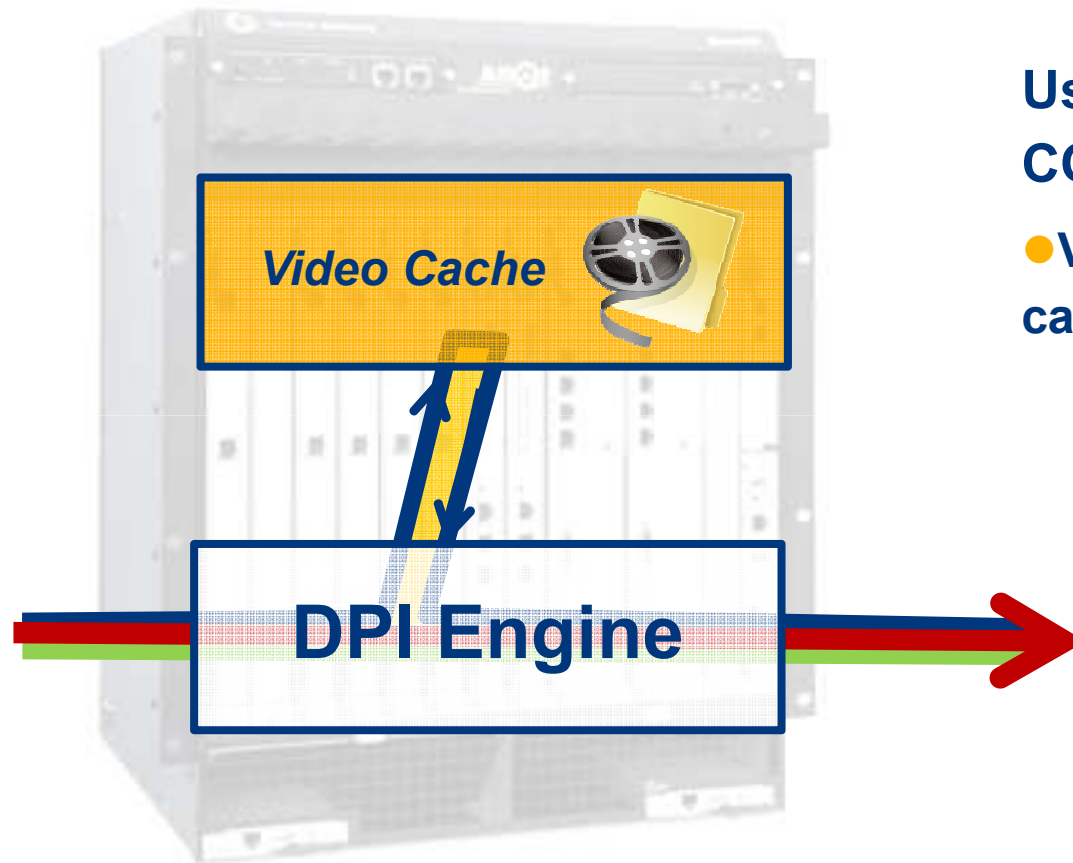## DPI Engine

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Visualization: What Is Running On Your Network?

- **Multiple Visualization dimensions:**
  - **Applications**
  - **Subscribers**
  - **Services**
  - **Topology**
  - **…**

Identify busy cells and get details on the protocols breakdown
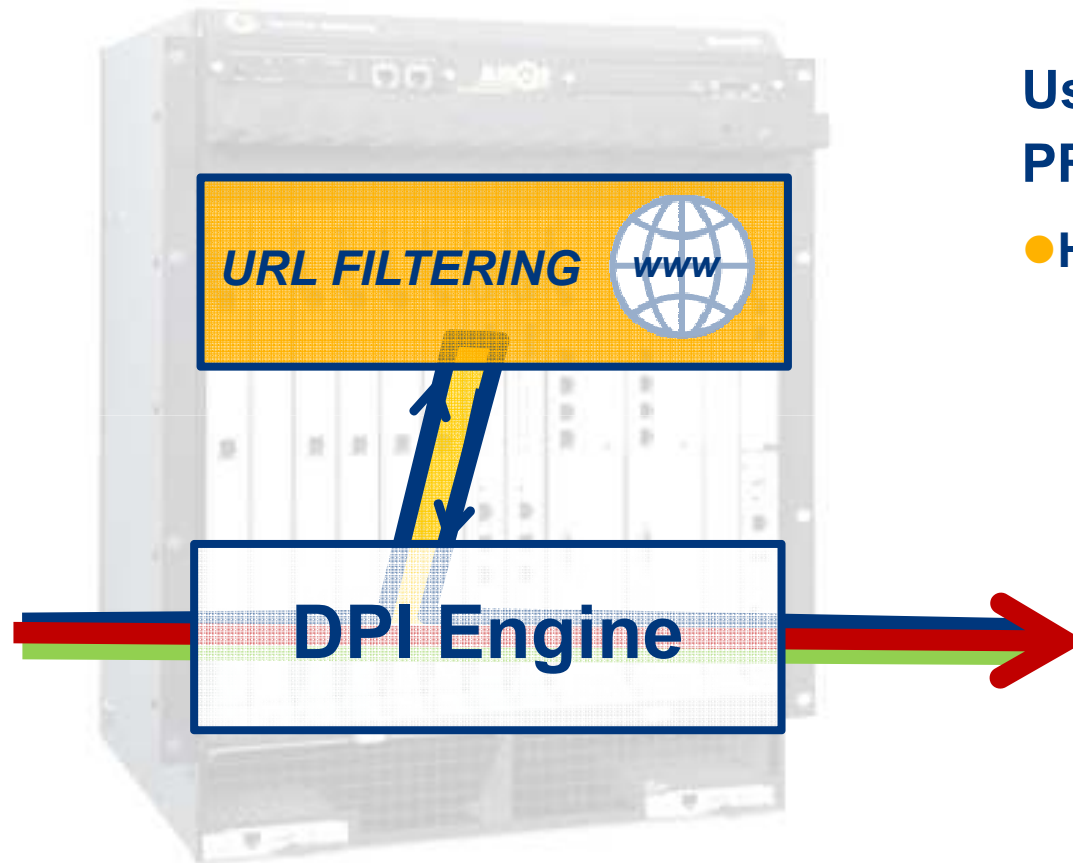
Intelligent CONTENT Steering

Using DPI for Steering of CONTENT

- **Video Traffic redirected to cache to:**
  - **Increase Subscriber Quality of experience**
  - **Reduce Service Provider traffic on expensive peering links**
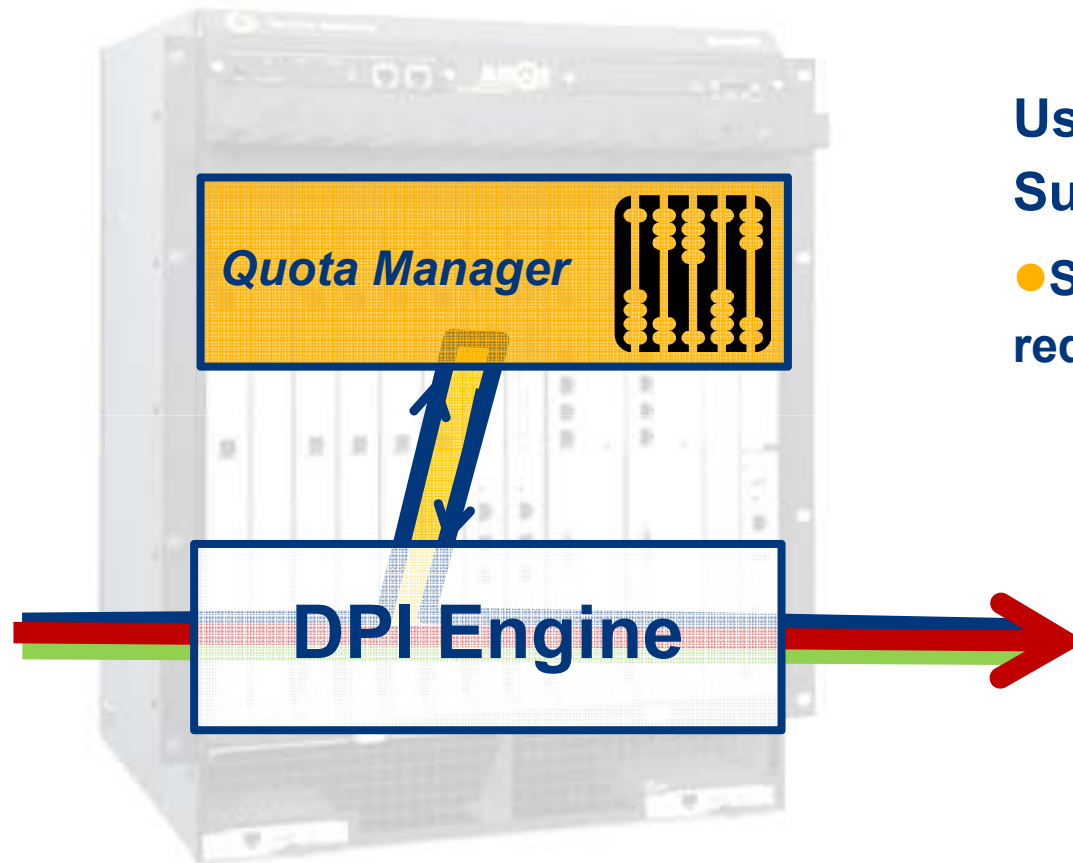
Intelligent PROTOCOL Steering

URL FILTERING www

DPI Engine

Using DPI for Steering of PROTOCOLS

- **HTTP redirected for:**
    - **Filtering of harmful or illegal content**
    - **HTTP Data mining**

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Intelligent SUBSCRIBER Steering
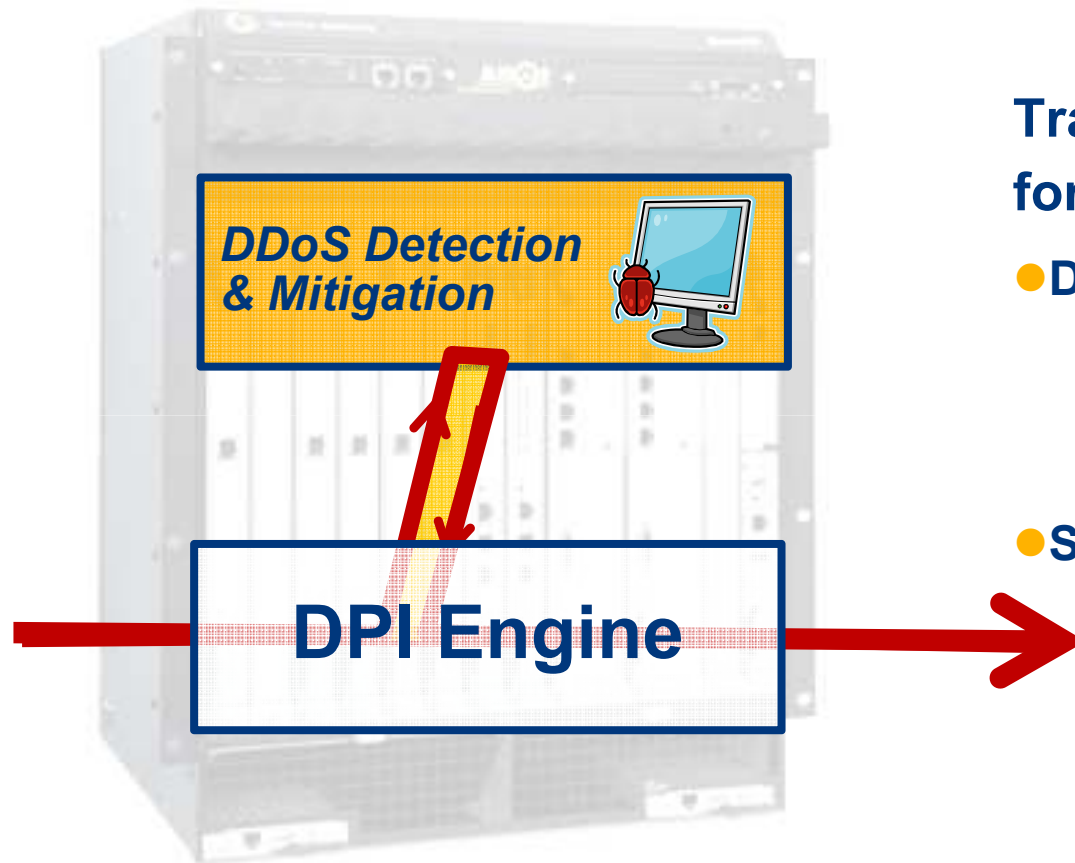
Quota Manager

DPI Engine

Using DPI for Steering of Subscribers

- Subscriber specific traffic is redirected to QM for:

  - Volume based quotas (e.g: 20GB downloads per day)

  - Time based quotas (e.g: 100 hours web use per month)

Traffic Steering for Intelligent ACTION

DDoS Detection & Mitigation

DPI Engine

Traffic is Copied and forwarded for:

- **Detection:**
  - Attacks on the SPs network
  - Outgoing attacks from within the SPs network
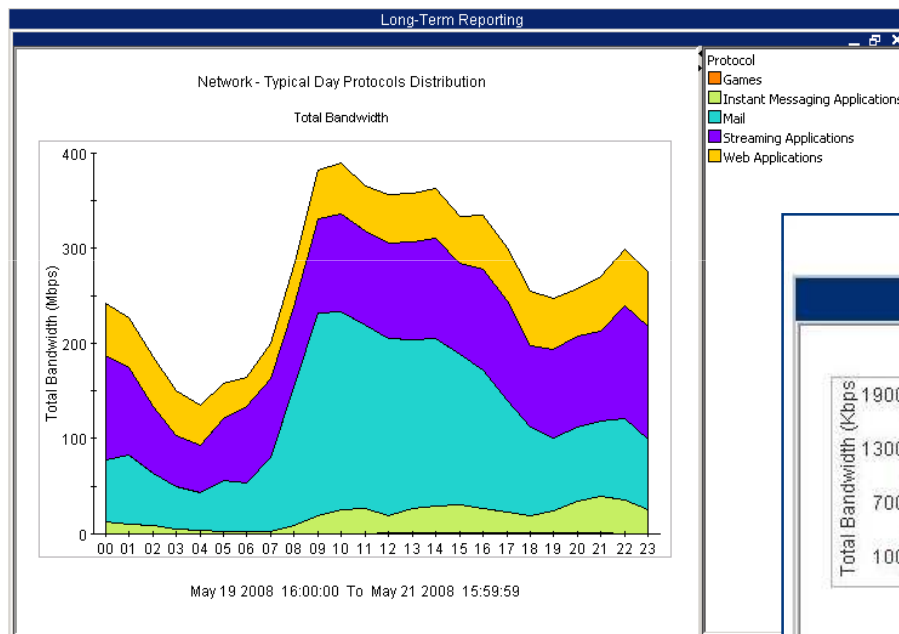
- **Surgical mitigation:**
  - Limiting or blocking attack traffic
  - Reporting, suspending, quarantining offending subscribers
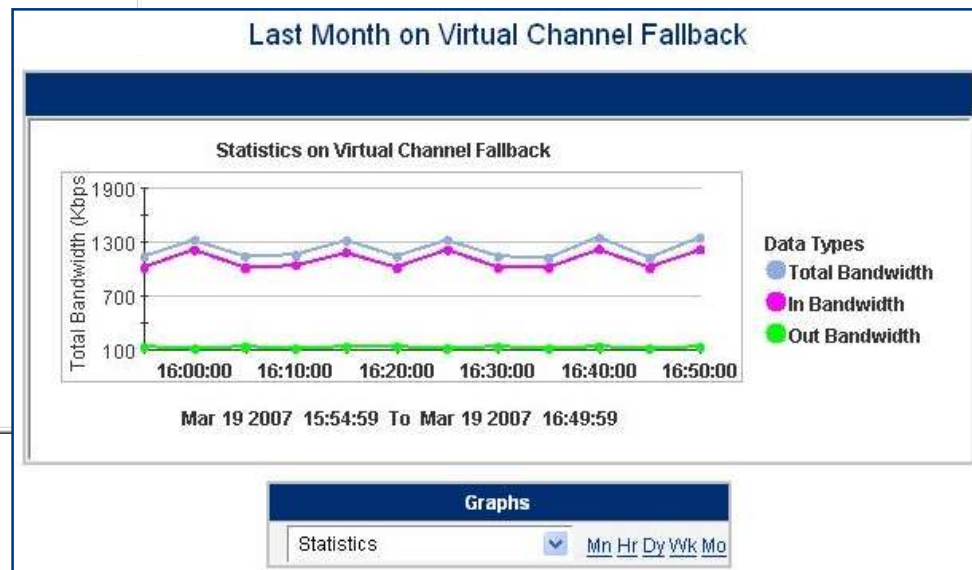
Subscriber Empowerment

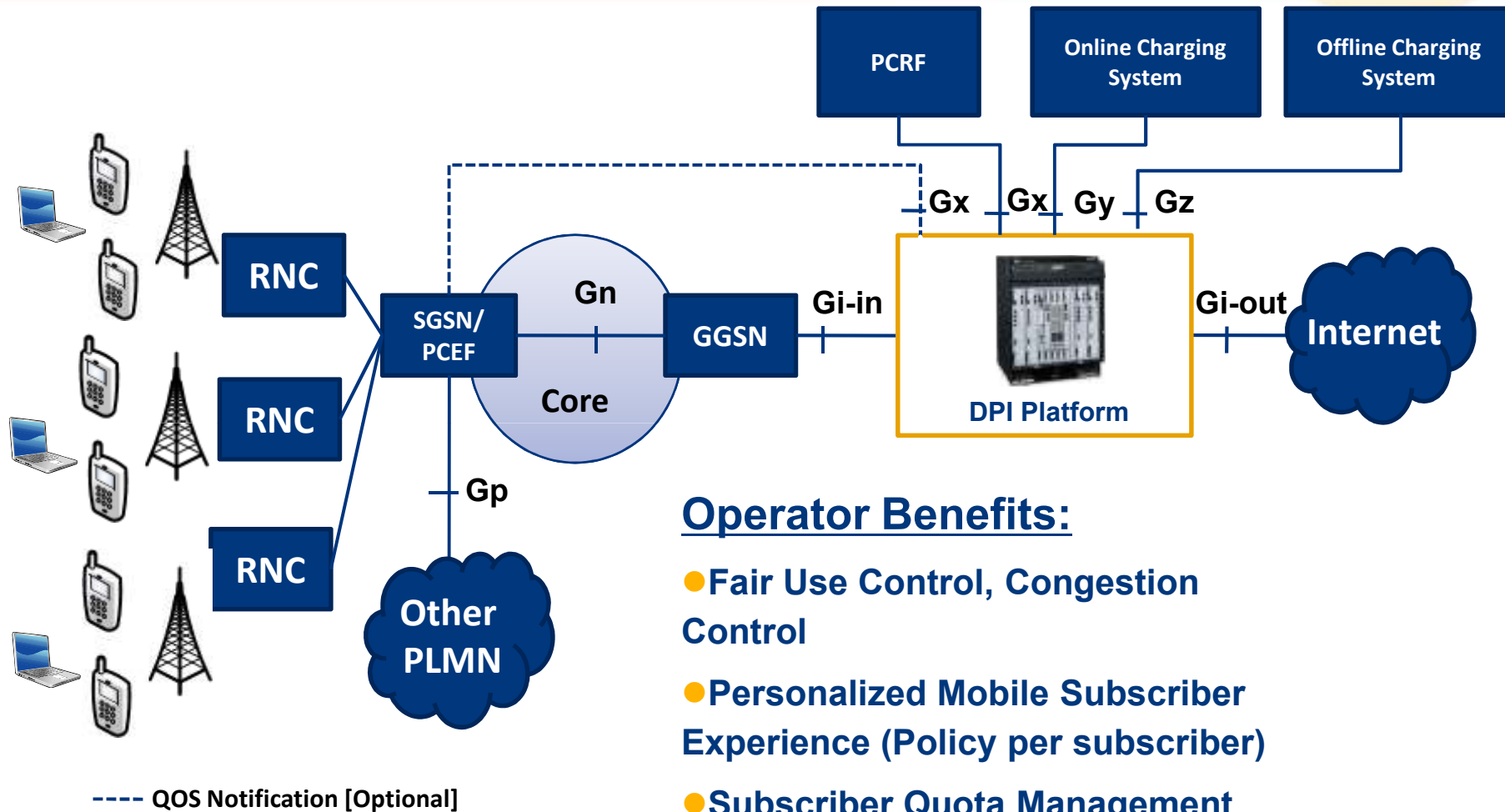## See your activity, choose your services, prioritize your traffic

My Bandwidth Distribution Over Time

My Protocol Distribution

Case Study I: Tier1 Mobile Provider in Europe

Operator Benefits:

- Fair Use Control, Congestion Control
- Personalized Mobile Subscriber Experience (Policy per subscriber)
- Subscriber Quota Management
- Online Charging by subscriber usage

Network diagram labels: RNC, SGSN/PCEF, GGSN, Gn, Core, Gp, Other PLMN, Gi-in, DPI Platform, Gi-out, Internet, PCRF, Online Charging System, Offline Charging System, Gx, Gx, Gy, Gz

- - - - QOS Notification [Optional]

Case Study II: Tier1 Fixed Carrier in Asia

Subscriber Management

Policy Management

OSS

DPI Platform

Access Network

Subscribers

1GE

Core Network

10GE

Transit and Peering Links

Internet

Caching Platform
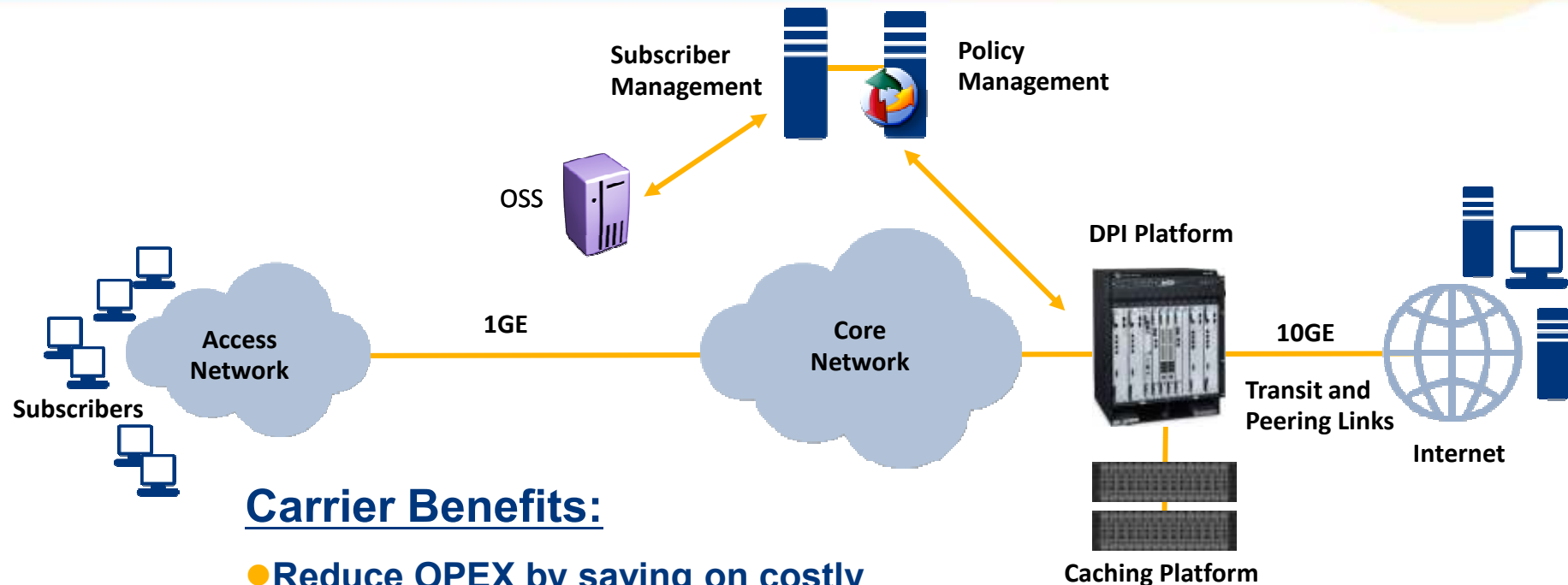
Carrier Benefits:

- Reduce OPEX by saving on costly transit/peering links

- Generate New Revenues based on accelerated media tiered service and due to increased adoption of higher bandwidth packages

- Increase subscriber QoE and customer loyalty

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Allot At-A-Glance

Public Company
- **Traded on NASDAQ [ALLT]**
- **Founded in 1996**

Value Proposition
- **Network Intelligence; IP Service Optimization and Revenue Generation**

Products sold
- **More than 13000 units sold in 120 countries**
- **More than 800 Service Providers**
- **More than 2000 Enterprises and Education Inst**

Offices
- **Americas: Minneapolis, USA**
- **Europe: Nice, France**
- **Asia: Tokyo, Japan & Singapore**

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