NEW IPX SERVICES – OPPORTUNITIES AND CHALLENGES

Natasha Tamaskar, VP Strategy, GENBAND
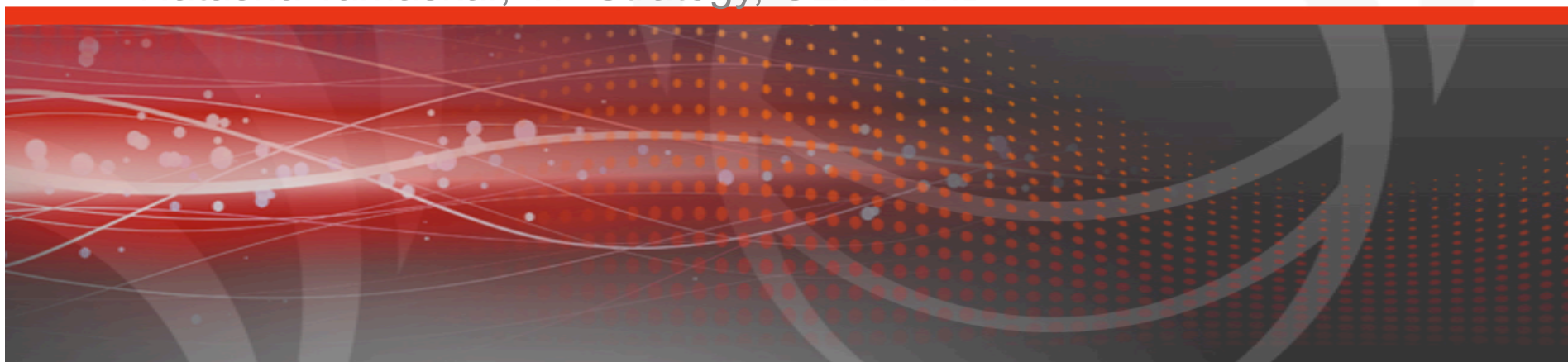
GENBAND at a Glance

Employees	**2,300**
Solutions	**Switching, Networking and Applications**
Operations	**50 Sales and Support Centers**
Market Leadership	**#1 Global VoIP Provider**
Customers	Bell BT CABLE & WIRELESS 中国移动通信 CHINA MOBILE NTT Telefónica TELUS vodafone bharti BSNL Connecting India CenturyLink China unicom中国联通 comcast COX Sprint Telstra T··Mobile· ROGERS TELMEX TURK TELE KOM verizon

GENBAND™

Market Dynamics
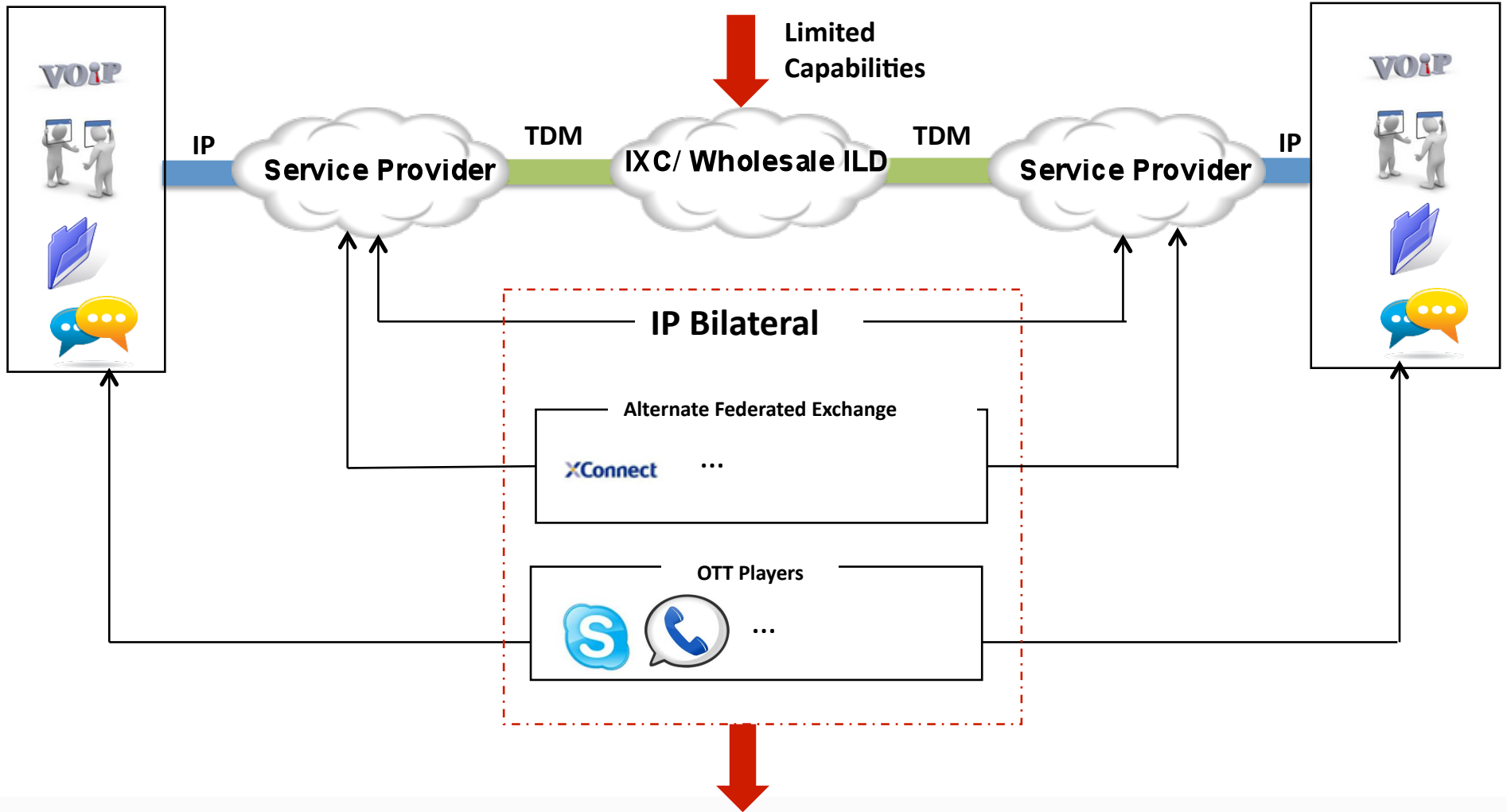
New Services

Standard Services

- ✓ Monetization of service aware Quality enabled bi-lateral and multilateral multimedia interconnects – Voice, Video, IM
- ✓ Hosted interworking between TDM, Mobile, and IP networks
- ✓ Transcoding as a service

Value Added Services

- ✓ HD voice and video telephony interconnects
- ✓ Interconnection between mobile operators for Rich Communication Services (RCS) interconnections
- ✓ Interconnect IMS interworks for VoLTE roaming
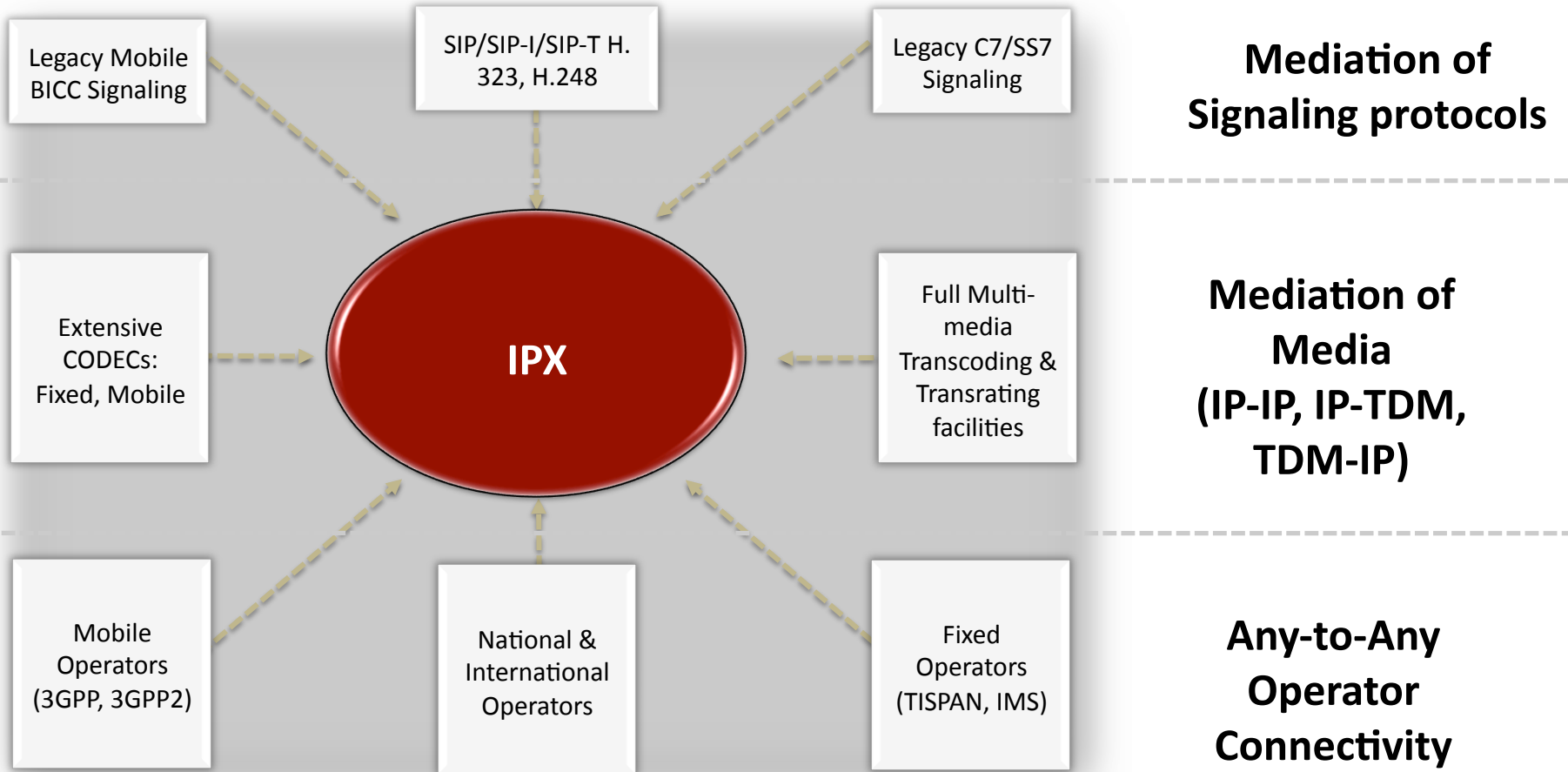
New Market Penetration

- ✓ Provide direct SIP business trunking services to enterprises
- ✓ Offer federated exchange between enterprises for unified tele-presence

New Business Model

- ✓ Provide managed SBC services to service providers or other wholesale carriers
- ✓ Provide hosted applications infrastructure to service providers
- ✓ Traffic analysis and policy enforcement, CDN, hubbing, etc..

Services
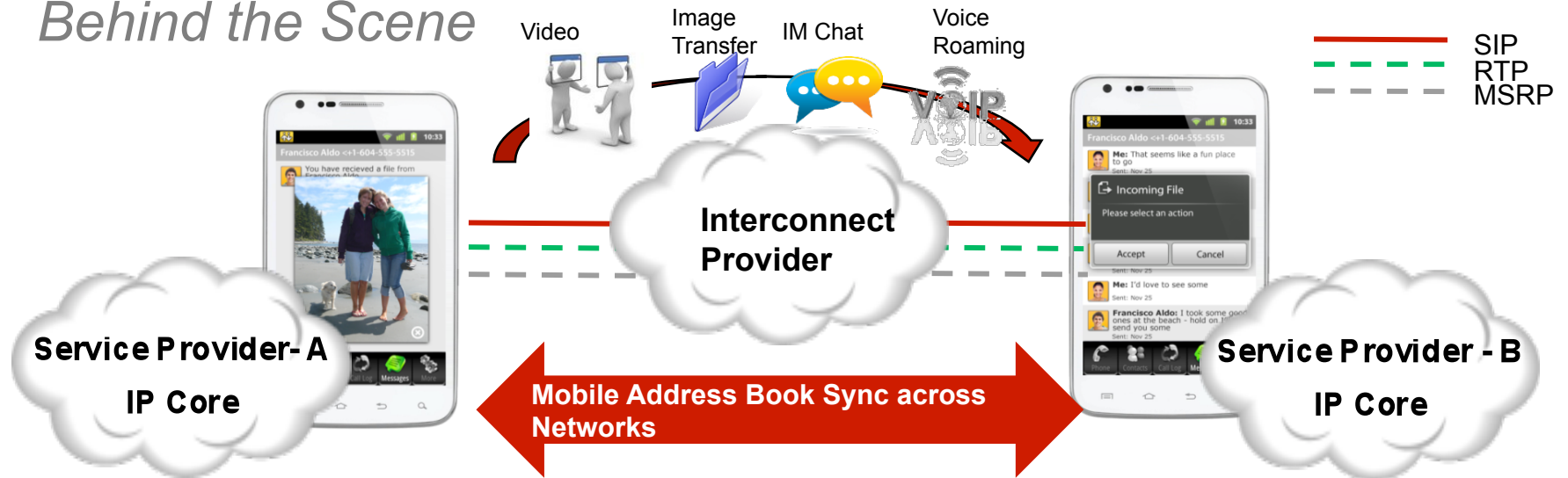
New Service Enablement

GENBAND

New IPX Service = New IPX Requirements

Legacy Mobile BICC Signaling

SIP/SIP-I/SIP-T H. 323, H.248

Legacy C7/SS7 Signaling

Mediation of Signaling protocols

Extensive CODECs: Fixed, Mobile

IPX

Full Multi-media Transcoding & Transrating facilities

Mediation of Media (IP-IP, IP-TDM, TDM-IP)

Mobile Operators (3GPP, 3GPP2)

National & International Operators

Fixed Operators (TISPAN, IMS)

Any-to-Any Operator Connectivity

Consistent Management & Visibility

Operational Control

New Service Enablement –

Behind the Scene

Video   Image Transfer   IM Chat   Voice Roaming

SIP
RTP
MSRP

Interconnect Provider

Service Provider- A
IP Core

Service Provider - B
IP Core

Mobile Address Book Sync across Networks

Robust & Adaptive Security

Seamless connectivity across networks

Capabilities exchange across networks

Advanced Reporting & Analytics

GENBAND

Ala Carte Menu Driven Interconnect Policies

- Sell predictable interconnect points

- Select the interconnect profile according to the service provider requirements

- Pricing can be differentiated according to requirements and backed by QOS SLA

Interconnect Type
- ☑ VoIP
- ☐ TDM
- ☐ Data

Signalling
- ☑ IETF SIP
- ☐ ETSI ISUP
- ☐ National ISUP
- ☐ BICC

Signalling Map
- ☑ ITU
- ☐ IETF

Codecs
- ☑ G.711
- ☑ G.729
- ☐ AMR
- ☐ …

Service Type
- ☑ Voice
- ☐ Video
- ☐ IM
- ☐ …

Providing "Predictable" Interconnections

Ensure Service Availability →
- ✓ Secure interconnect borders
- ✓ Highly resilient
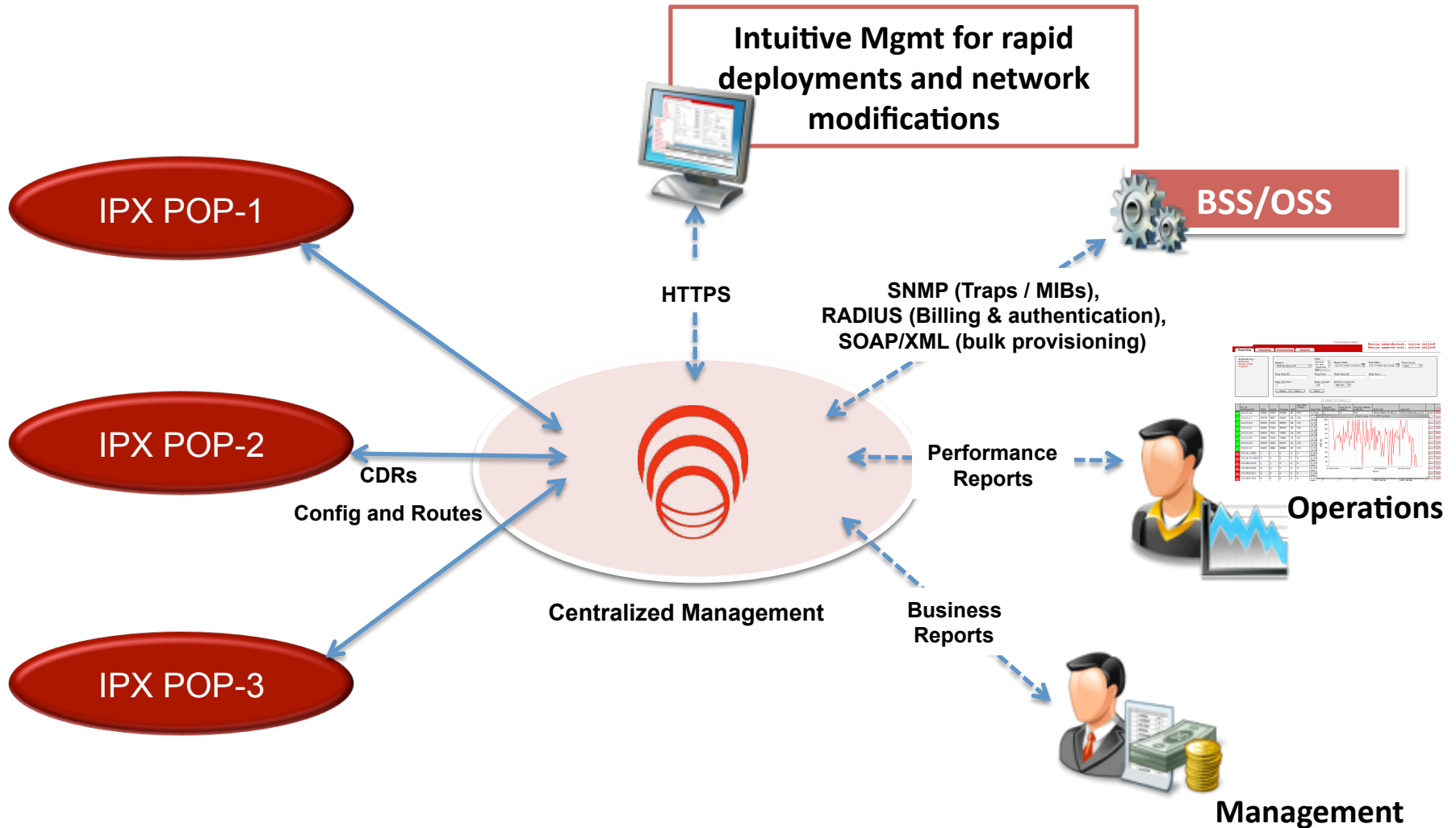- ✓ High performance & scalable

Ensure Service Interworking →
- ✓ Seamless Any-Any mediation of signaling and media
- ✓ Service profiles and connectivity management
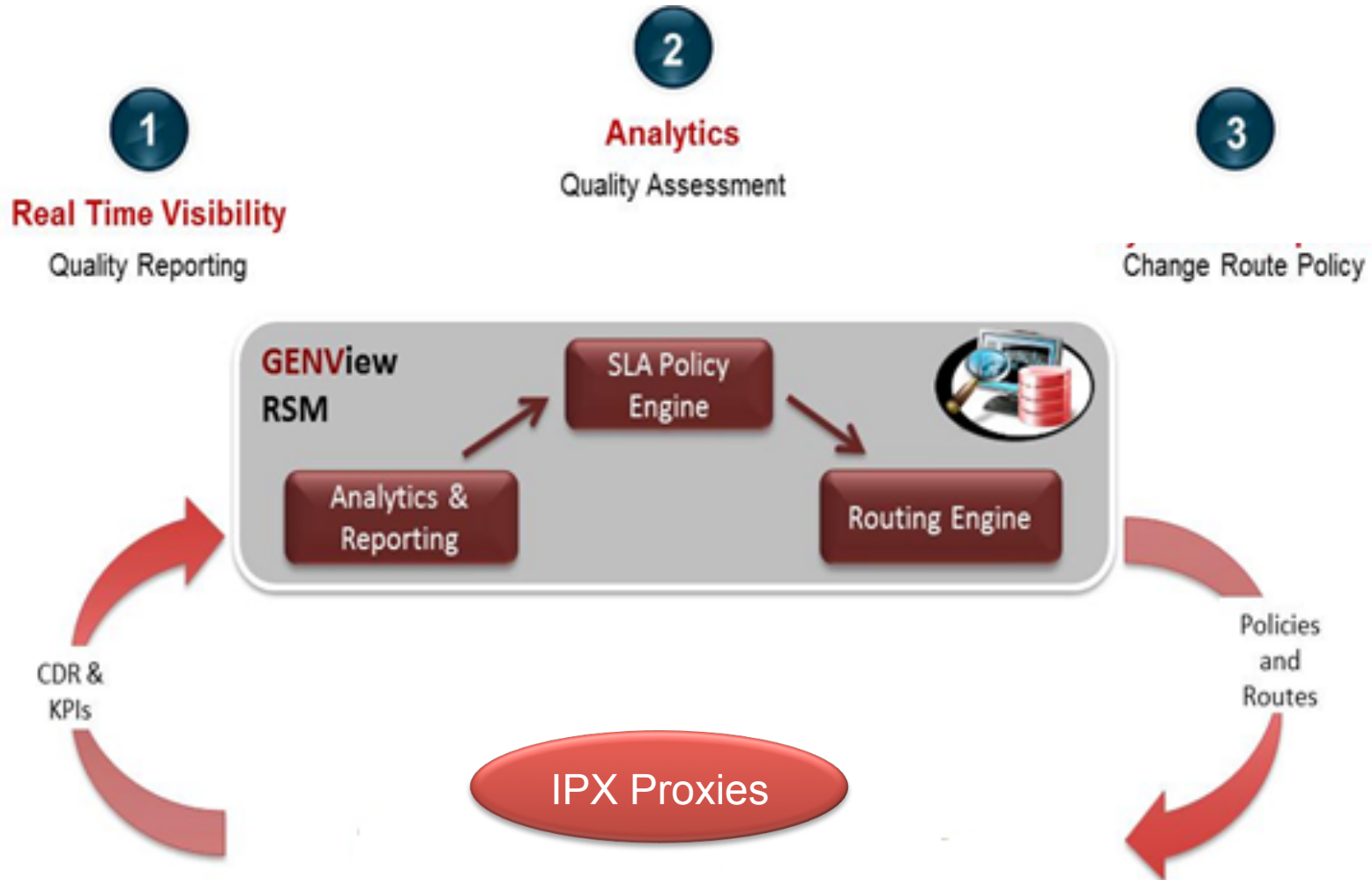
Ensure Service Performance →
- ✓ Policy driven routing
- ✓ Quality of Service assurance

GENBAND

Manage Interconnect Complexity

Intuitive Mgmt for rapid deployments and network modifications

BSS/OSS

IPX POP-1

HTTPS

SNMP (Traps / MIBs),
RADIUS (Billing & authentication),
SOAP/XML (bulk provisioning)

IPX POP-2

CDRs

Config and Routes

Performance Reports

Operations

Centralized Management

IPX POP-3

Business Reports

Management

Network Wide Policies to Define, Monitor and Enforce Performance Criteria

GENBAND

Predictive Analytics - Dynamic Response

1 **Real Time Visibility**
Quality Reporting

2 **Analytics**
Quality Assessment

3 Change Route Policy

GENView RSM

SLA Policy Engine

Analytics & Reporting

Routing Engine

CDR & KPIs

Policies and Routes

IPX Proxies

INTELLIGENT POLICY FEEDBACK

GENBAND

Interconnect With Assurance: Built In KPI

Network Quality

- R-Factor
- Packet delay
- Packet loss
- Packet variance (Jitter)
- Bandwidth allocation
- Admission Control
- Round trip delay

Service Quality

- ALOC (Average Length of Call)
- ASR (Answer to Seize Ratio)
- NER (Network Efficiency Ratio)
- PGRD (Post Gateway Ringing Delay) – Post Dial Delay
- Service Availability
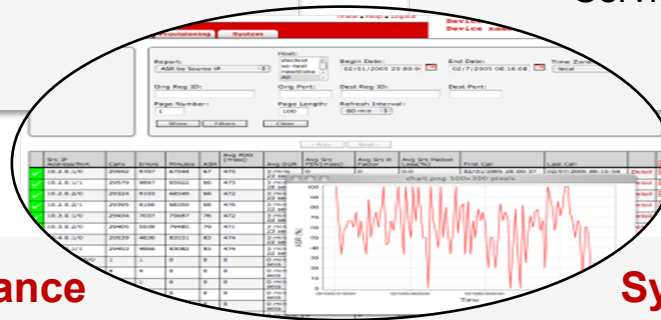
Route Performance

- Network load
- Destination call load and status
- Traffic conditions – Congestion
- Business conditions – Profitability/ Loss

System Performance

- Memory/ Disk Usage
- Interface status
- System health

VISIBILITY INTO SERVICE PERFORMANCE

GENBAND

Real Carriers with Real Challenges

Carrier 1:

- Many vendor components – integration & manageability
- Difficult & costly to scale (specifically routing)
- Lacked Mobile IP interconnect (BICC)

Carrier 2:

- Interoperability with the various networks – SIP, H.323
- Session Management
- Visibility into the Quality of Service being offered
- Connecting cable operator and OTT provider to MNOs

Real Carriers with Real Challenges (continued)
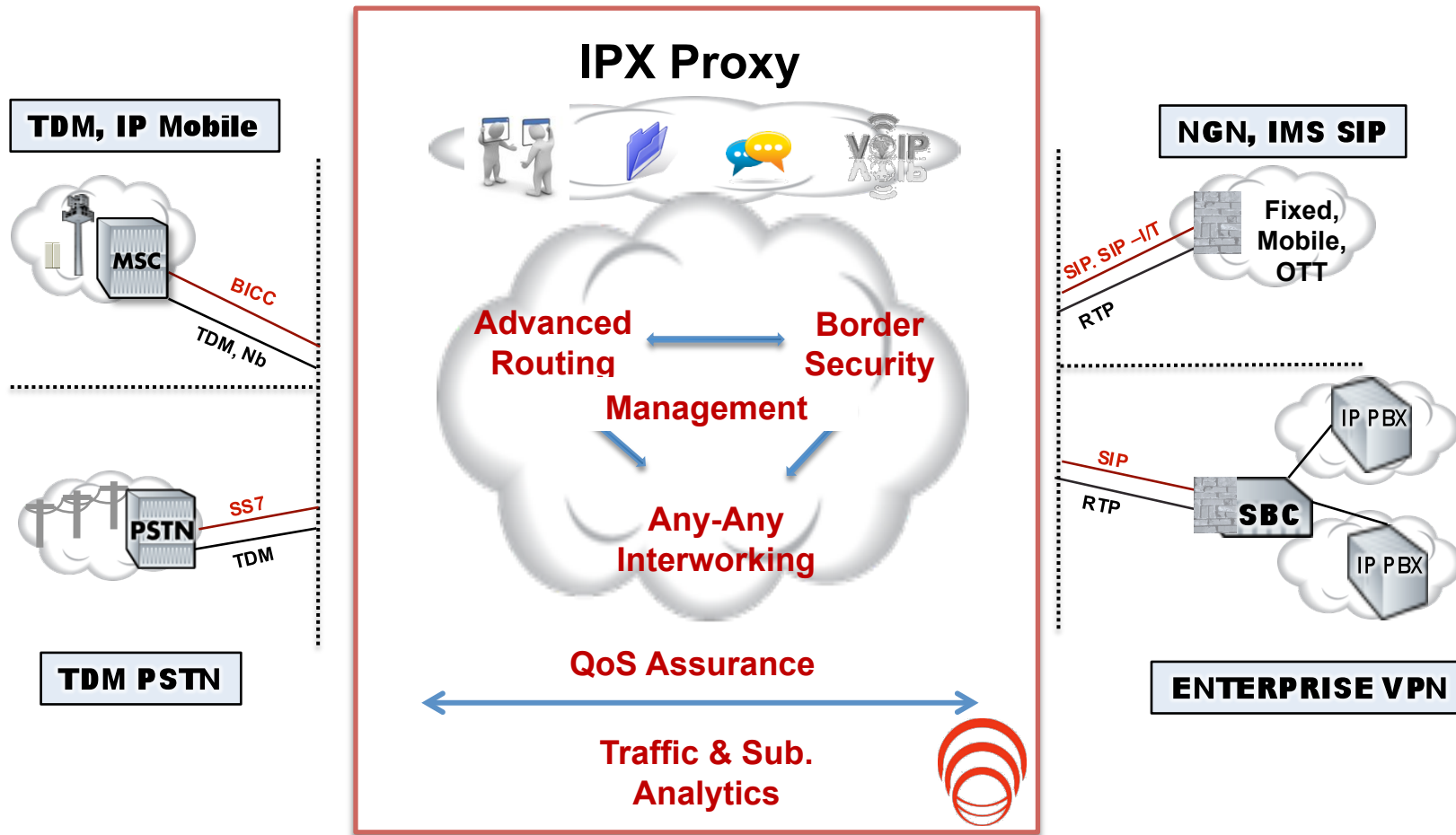
Carrier 3:

- Large volume of traffic
- Difficult & costly to provision and manage
- Needed to support Microsoft Lync 2010

Carrier 4:

- Needed scalable transcoding solutions
- Needed comprehensive peering & Interworking features – fixed to mobile
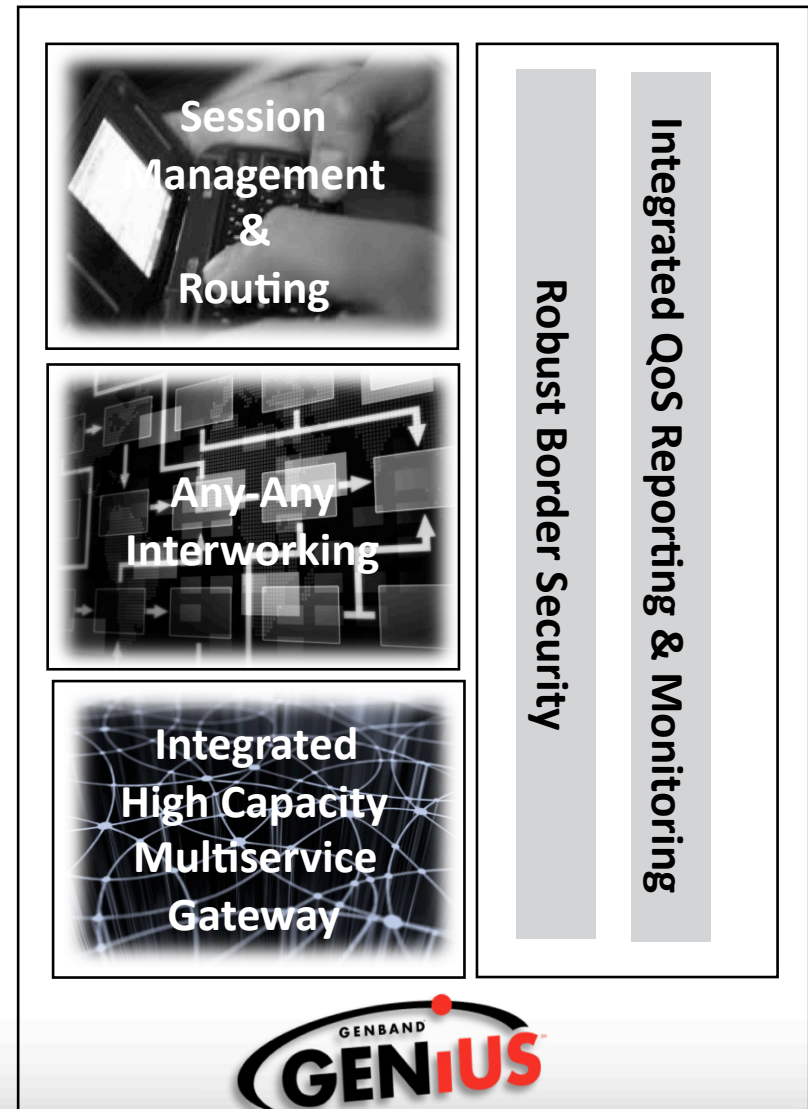- Required advanced routing
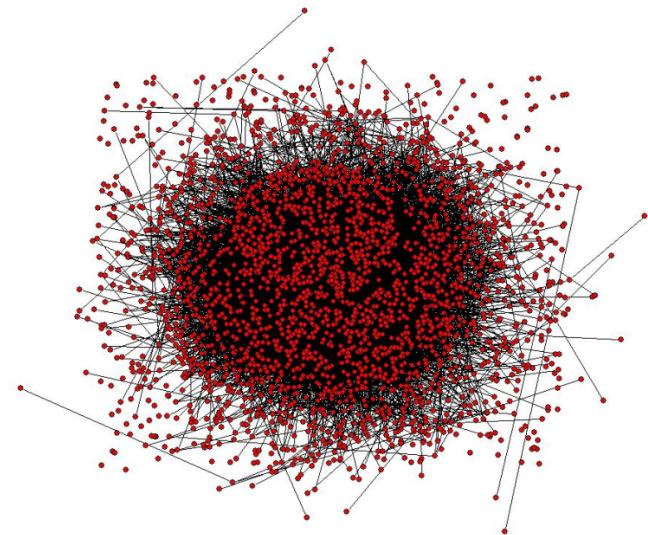
GENBAND

GENBAND Intelligent IPX Proxy

Any To Any Intelligent Interconnect

GENBAND IPX Solution Value

- **Enables scalable commercial offering**
  - Simple Secure Modular Architecture
  - Extends service reach with any to any interconnects – TDM, IP - Mobile, Fixed, Cable, OTT
  - SIP, SIP-I, TDM, BICC
  - High scale and performance
  - Standards compliant
- **Interconnect with assurance**
  - Robust security
  - Any-Any interworking
  - Extensive built in KPI for SLA assurance
- **Simple and Sensible Operations**
  - Centralized management with assurance
  - Manage interconnections not boxes
- **Low Total Cost of Ownership**
  - Network wide licensing
  - Best price performance ratio
- **Turn Key Deployment**
  - We build, operate and transfer your IPX core
  - Industry leading professional services
- **Enables new revenue opportunities**
  - Differentiated services backed by SLAs
  - Future proof: evolve with market needs

Session Management & Routing

Any-Any Interworking

Integrated High Capacity Multiservice Gateway

Robust Border Security

Integrated QoS Reporting & Monitoring

GENBAND GENiUS

Carrier Grade Intelligent IPX Proxy

ENBAND

Global Customer Experience

650 CUSTOMERS - MILLIONS OF PORTS

GENBAND Confidential and Proprietary

GENBAND