# IPX Signaling-Control

*Creating competitive advantage through investment in signaling-control solutions*

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# IPX Environment

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- Requirement for converged services
  - SS7/C7, ENUM, DIAMETER, SIP
    - More complicated than originally envisioned by the GSMA

- Every customer wants something slightly different
  - Signaling interworking
  - Legacy equipment "tweaks"
  - Customized policies

- Super high volume services
  - Infrastructure scaling is a major issue

- Cost conscious environment
  - High revenue but low margin business

> How do we build a business that creates above average return in this environment?
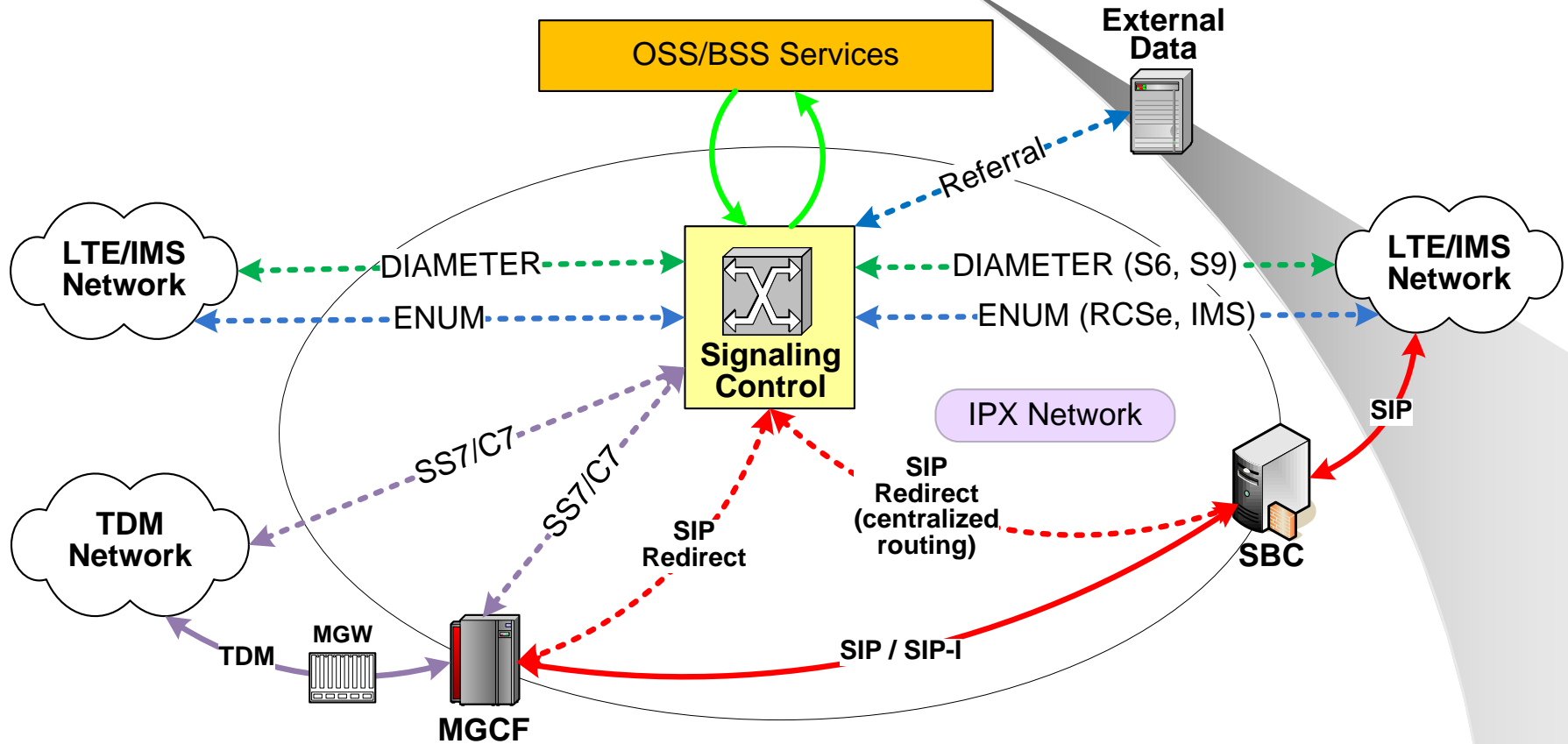
# Align technology with business requirements
## *Three recommendations for building a better IPX*

- **Combine signaling-control services on a common platform**
  - SIP, ENUM, DIAMETER, SS7/C7
    - Multiple silo solutions are complicated, hard to scale and expensive.
    - Multiple silos make interworking difficult to implement

- **Separate OSS/BSS from real-time signaling control**
  - LCR example
    - LCR policy engine is an OSS function (i.e. *Ascade/CSG*)
      - Key value proposition in OSS is flexibility
    - Real-time LCR implementation is signaling-control function (i.e. *NetNumber*)
      - Key value propositions in signaling-control are speed, reliability, scale.

- **Embrace NFV**
  - Faster scaling of services
  - More efficient utilization of hardware assets

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# Simplified Signaling Control
## *Common infrastructure for SIP, ENUM, DIAMETER, SS7/C7*



OSS/BSS Services

External Data

Referral

LTE/IMS Network

DIAMETER

ENUM

DIAMETER (S6, S9)

ENUM (RCSe, IMS)

LTE/IMS Network

**Signaling Control**

IPX Network

SS7/C7

SS7/C7

SIP

SIP Redirect

SIP Redirect (centralized routing)

SBC

SIP Redirect

TDM Network

TDM

MGW

MGCF

SIP / SIP-I

Reduce your number of vendors, reduce the number of systems you manage, minimize the moving parts in the solution

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# Creating competitive advantage
## *Signaling-control as service differentiation*

- **Common signaling-control platform**
  - SIP, ENUM, DIAMETER, SS7/C7
    - *Faster delivery of customer specific services*
    - *Unlimited interworking flexibility (new features)*

- **Separate OSS/BSS from Signaling-Control**
  - LCR, PCRF, OCS, HSS, etc.
    - *Flexibility to invest in "best of breed" OSS features as they become available without being forced to tear-out your network infrastructure*

- **Embrace NFV**
  - SBC, MGCF, Signaling-Control
    - *Cost effective scaling*
    - *Timely capacity scaling*

*Thank You*

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# Panel discussion questions

- Are there any real-world examples of separation of OSS policy-control from real-time signaling-control implementation of the policy in the network?

- Are NFV deployment of core network services a reality today or just a vision?

- Are multiple vendors working on the concept of combining multiple network functions onto a reduced number of platforms?