Migration Scenarios to NGN

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VoIP – The POTS of the Future
The VoIP market is taking off in all regions of the world

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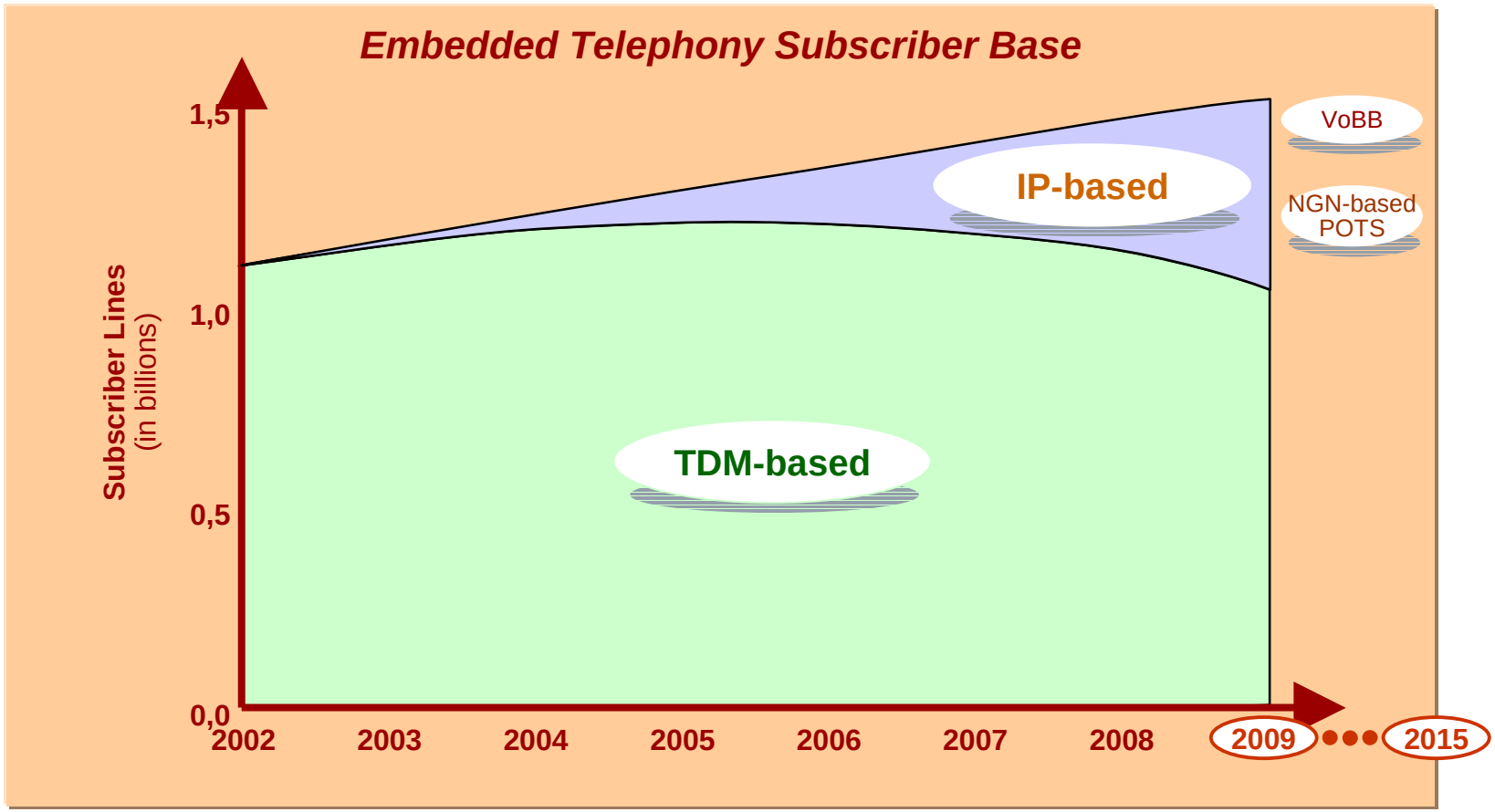

Source: ITU Main Telephone Lines and Dell'Oro Group estimates (Q2/2005)

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NGN Migration Approaches

- Two steps to migrate to NGN:
  - Softswitch based PSTN Emulation
    - Highlights : 100 % preservation of TDM voice features
  - IP Multimedia Subsystem (IMS) based PSTN Simulation
    - Highlights : Some important voice features + NEW multimedia services

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Definition

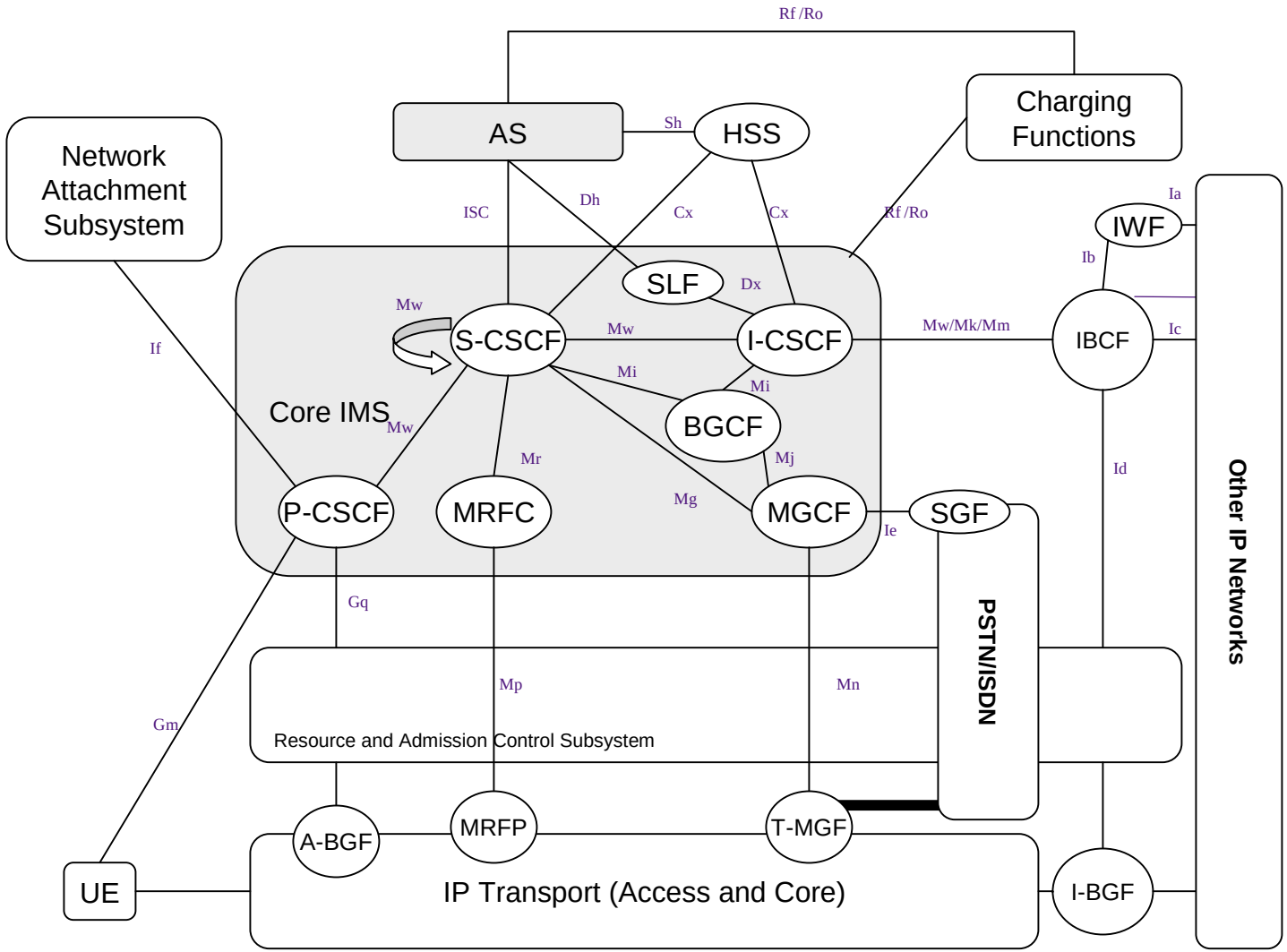
- **PSTN/ISDN Emulation**

  Mimicking a PSTN/ISDN network from the point of view of a legacy terminal by an IP network, through a gateway. All PSTN/ISDN services remain available and identical (i.e. with the same ergonomics) such that end users are unaware that they are not connected to a TDM-based PSTN/ISDN.

- **PSTN/ISDN Simulation**

  The provision of PSTN/ISDN-like services to advanced terminals such as IP-phones. There is no strict requirement to make all PSTN/ ISDN services available or identical, although end users expect to have access to the most popular ones, possibly with different ergonomics.

NGN Architecture



PSTN Emulation Architecture

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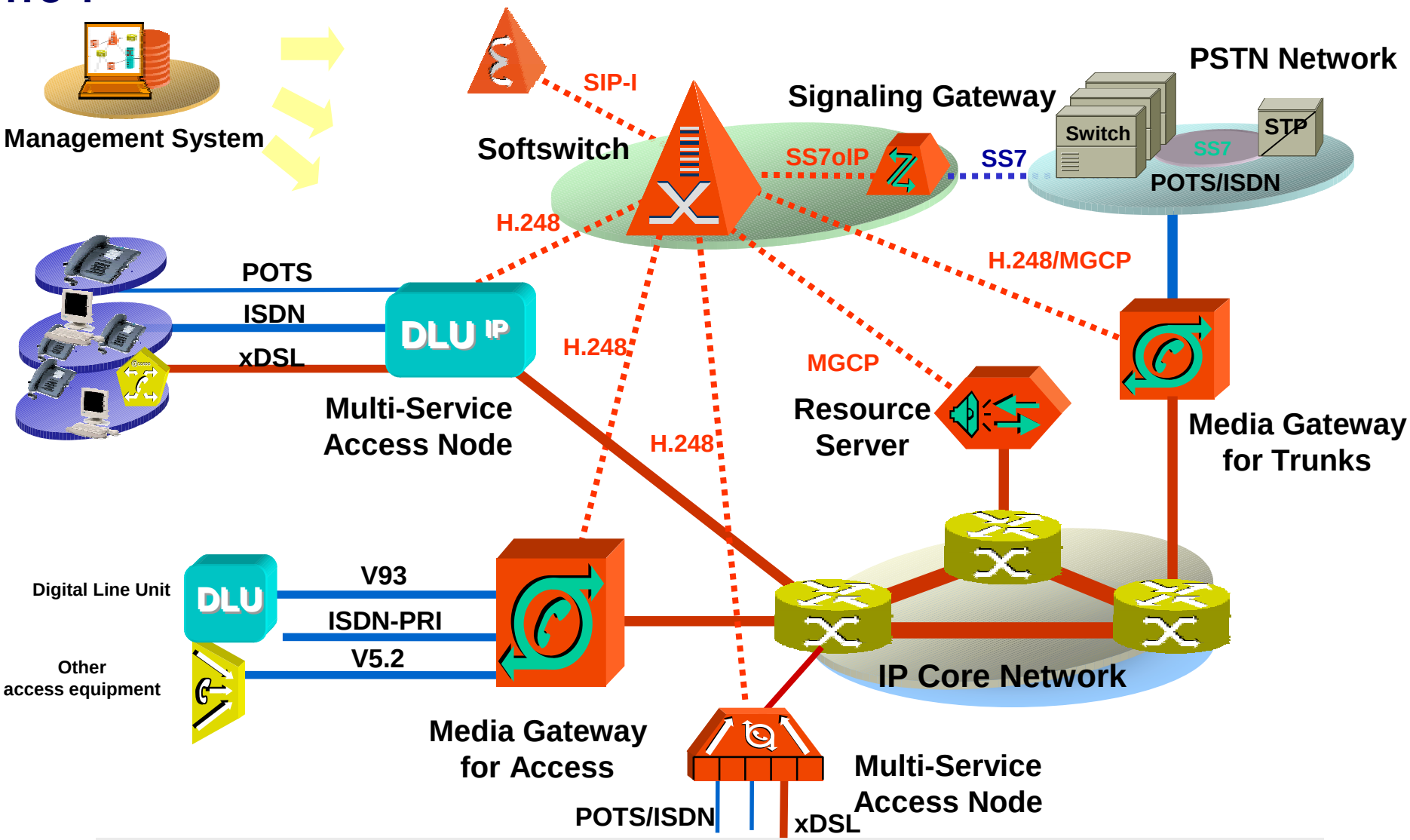

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Highlights for Softswitch based PSTN Emulation

- Provides current PSTN/ISDN services with an unchanged presentation (100% feature preservation) for all interfaces
- Services/features provided by call control of Softswitch
- H.248 control of Access Gateways
- Covered by existing ETSI TISPAN and ITU-T standards
- Emulation domain (softswitch) and IMS session control are interworking via SIP
- Possibility to re-use installed access equipments (POTS, ISDN, PRI, CAS etc)
- Protection of embedded subscriber base through immediate migration

Migration Scenario – Class 4

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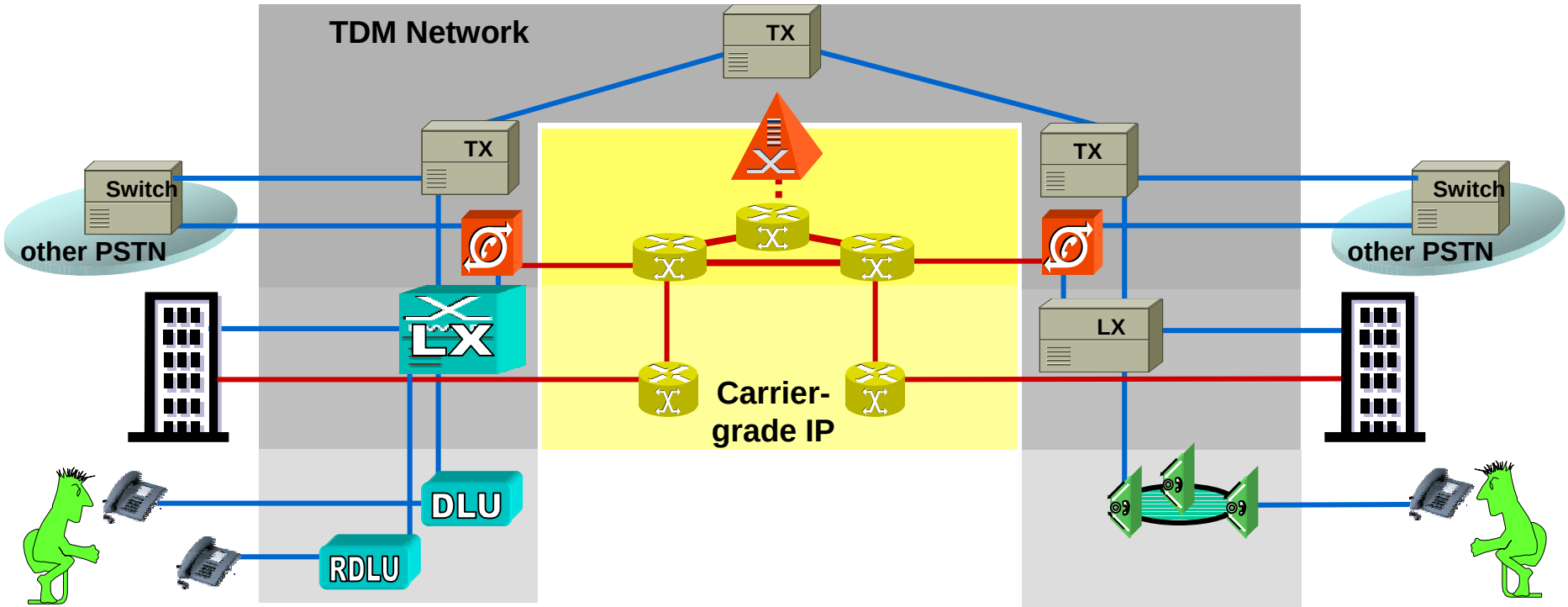

Value proposition

- Reduction of network elements to be managed
- Reduction of operational expenses (OPEX)
- Efficient, simpler architecture based on IP

Migration Scenario – Class 5

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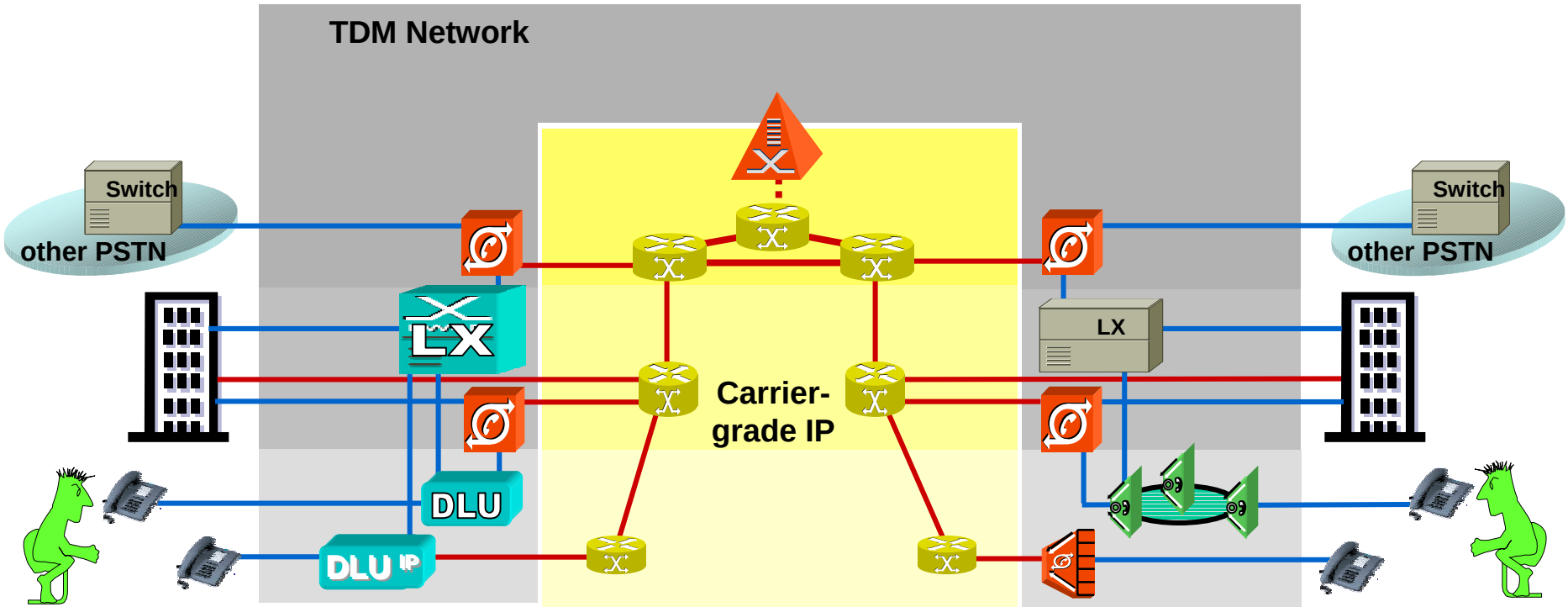

Value proposition

- Reduction of network elements to be managed
- Reduction of operational expenses (OPEX)
- Grow on IP -> Future Proof solution ..
- 100% preservation of Class 5 features

PSTN Simulation Architecture

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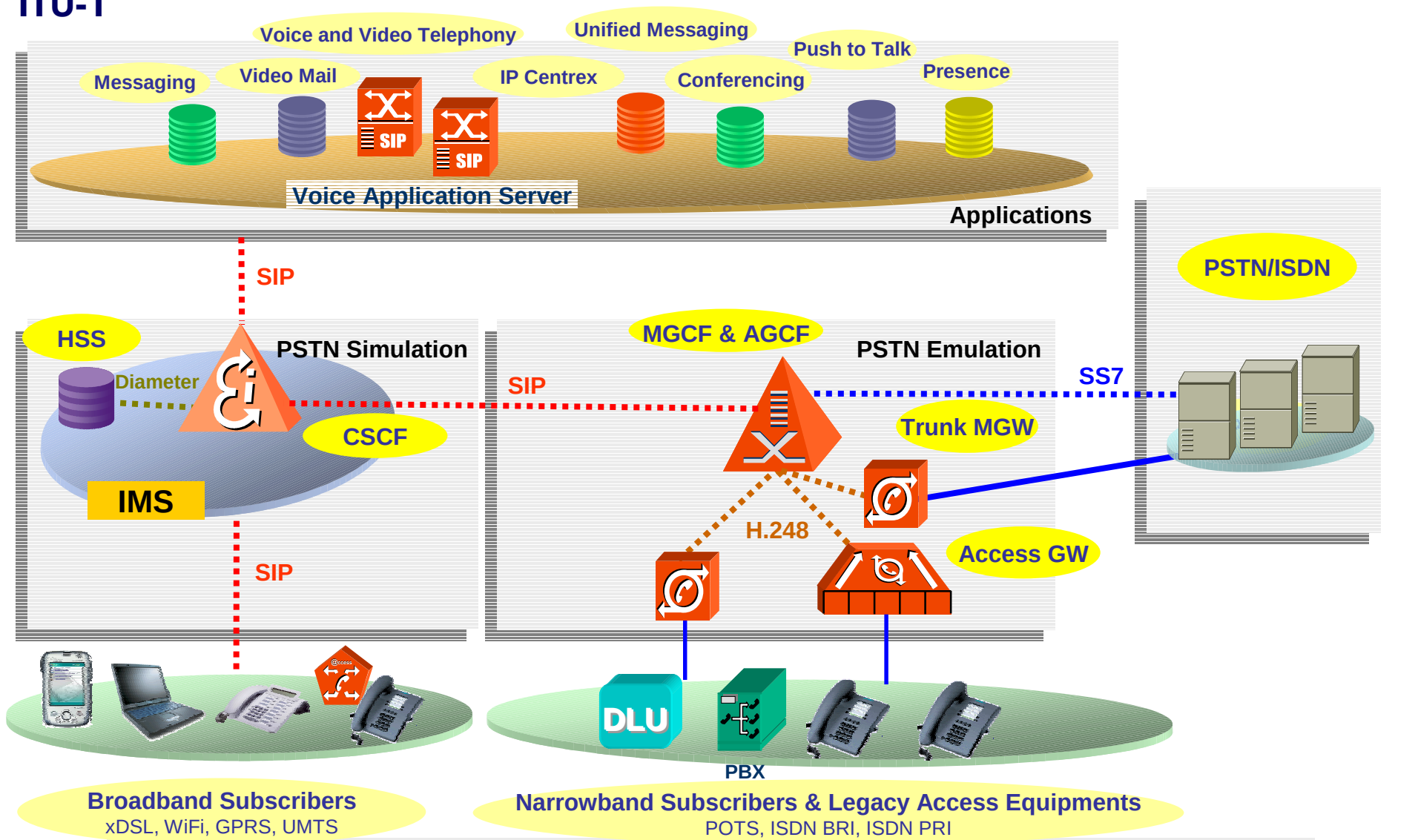

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Highlights of PSTN Simulation based on IMS

- Focus on New Multimedia services
- Advanced Multimedia services like push-to-talk, video conferencing, IP centrex etc
- Converged services across different acccess domains, eg: mobile networks, broadband wireline networks (xDSL, FTTH etc), WiFi
- Voice service is limited to simulation, with SIP based voice application server
- Most commonly used and popular voice services are simulated (eg: CLIP, Call Forwarding etc) – PSTN Simulation
- Interworking with PSTN Emulation domain via SIP

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IMS is a key element in NGN network evolution

- IMS (IP Multimedia Subsystem) is the **common control infrastructure for** real-time and non-real-time **end-to-end multimedia services** and any mixture of those
- IMS is designed and **standardized by 3GPP** to integrate smoothly with existing mobile and fixed networks
- New and existing **services** (e.g. Presence, Location) and **applications** can be connected and controlled by IMS through the standardized ISC interface
- By using SIP (Session Initiation Protocol) IMS based services can be accessed **from any IP/SIP capable device** (UMTS, GPRS, WLAN, wireline users, etc.)

IMS allows efficient application integration

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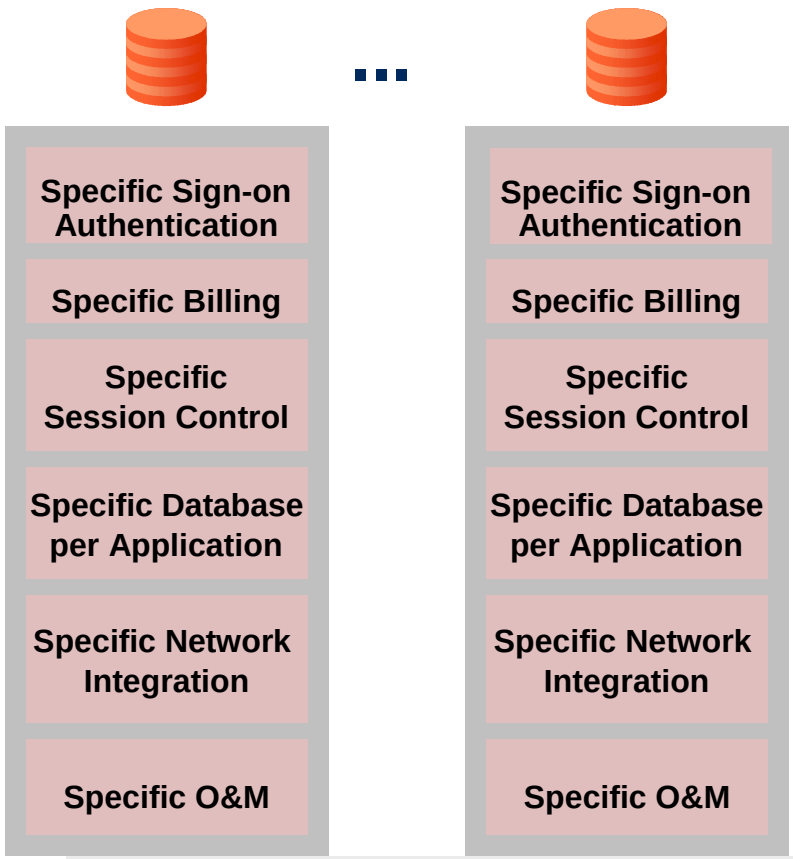
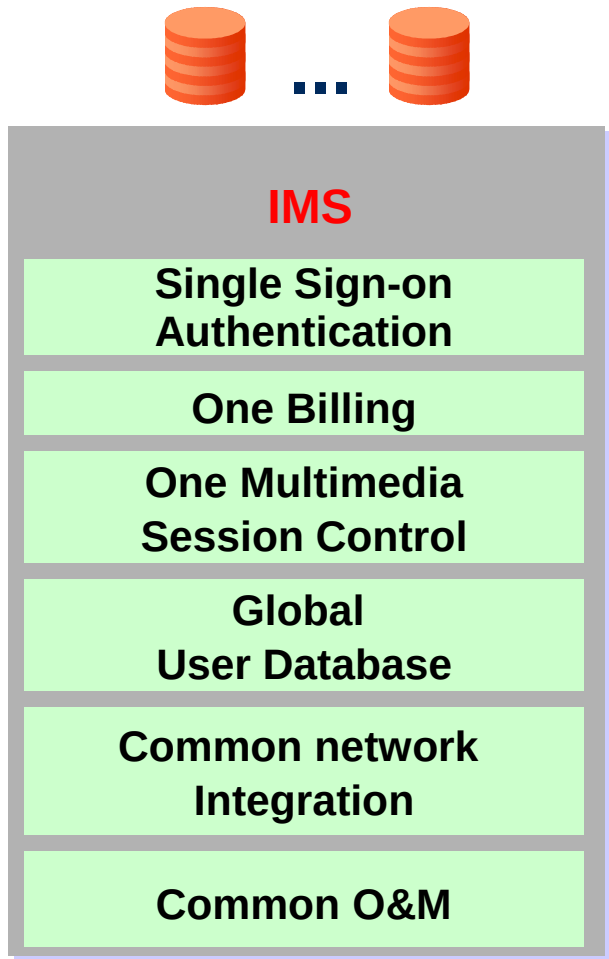
- No IMS: - repeated vertical integration
  - no synergies!



- With IMS: - one-time integration



IMS as Service Delivery Platform – Mobile IP Centrex

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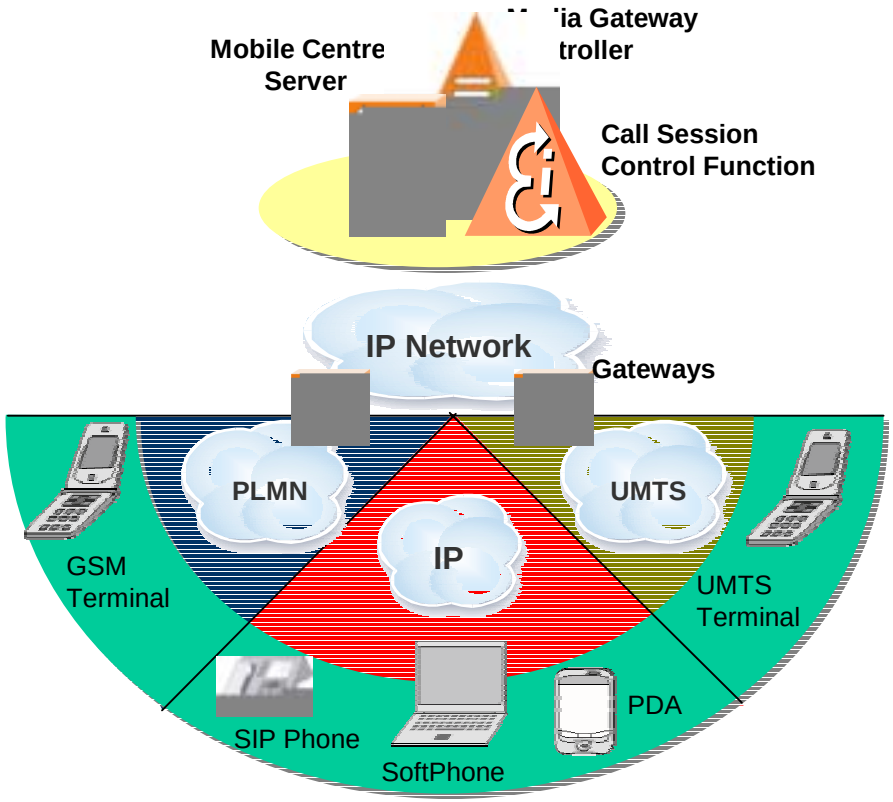

Mobile IP Centrex Group

- Hybrid Centrex Groups
  - SIP phones
  - GSM / UMTS phones (2G, 2.5G & 3G)
- Wide range of enterprise features to all this device types under a single platform
- Common feature set to business group users connected via fixed IP phones/Softphones, mobile phones

IMS as Service Delivery Platform – Video Call Applications

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VIDEO TELEPHONY

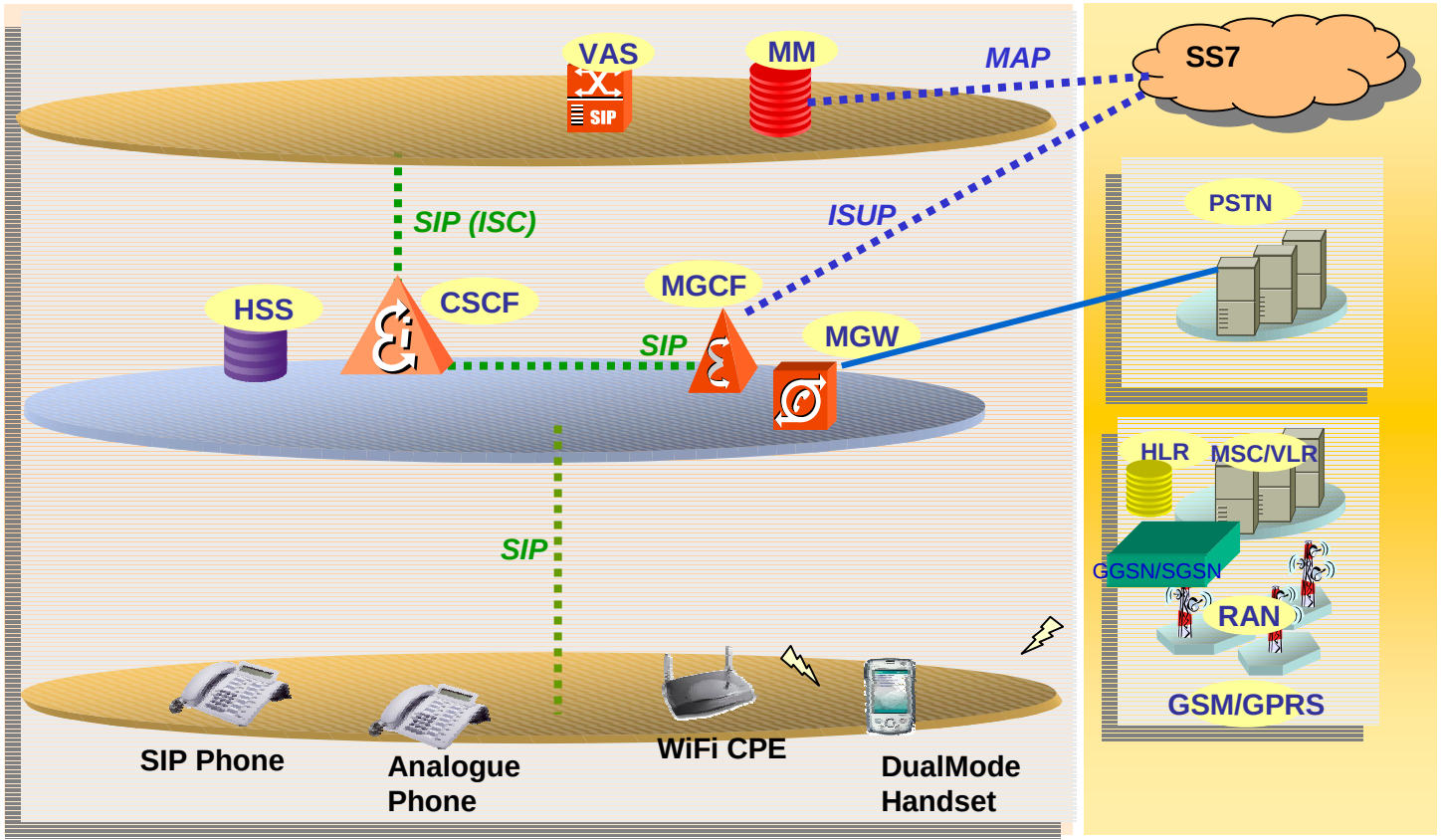
VIDEO PORTAL

VIDEO MAIL

VIDEO CONFERENCING

- Video Telephony is provided to SIP clients with interworking with 3G.
- Video portal enables SIP/3G users to stream video contents from portals
- Video Mail enables to access their recorded video mails, and also to record a videomessage to answer calls
- Video Conferencing enables users to establish video conferences with up to 16 participants per conference

IMS as Service Delivery Platform – One Number Service



- The Voice Application Server is used to provide call supplementary services for all IMS subscribers. The Mobility Management Application Server provides roaming between mobile network and IMS network

Migration to NGN today for the benefits tomorrow

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- Migration towards NGN with PSTN Emulation based on softswitch

Defend

  - IP based, flatten, simplified network
  - 100 % preservation of TDM voice features

- Introduction of IMS as service delivery platform

  - Introduction of SIP based, revenue generating applications to increase ARPU, eg: Mobile IP Centrex, Video call applications etc

Attack

  - Fast, simple introduction of new services

- Provides attractive service bundling

Exploit

  - Reduce churn rate with triple play services
  - One platform for video, voice and data

Case Study KPN, Netherlands

Case study

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Attack

Defend

Exploit

Leadership of converging communications market

The cornerstone of KPN strategy

GO FOR VoIP

In Q2 2005, KPN launched 'Internetplusbellen'

The bundle price for this combined subscription costs less than two separate subscriptions for telephony and Internet.

An innovative total package that offers unlimited calls in the weekend to all fixed lines in the Netherlands and unlimited ADSL (800Kbs) in one single subscription for **€ 34.95**

"There has been a change of pace at KPN this year. We have put our innovation initiatives in high gear, and the roll out of our strategy to attack new revenue opportunities, defend our leading share for traditional services and exploit a structurally lower cost base is on track. We are delivering on our promises, with increased revenues and an improving margin ... With the launch of Consumer VoIP services we took the first steps in our migration to an all IP network, the future basis for all our services."

Ad Scheepbouwer, CEO of KPN, August, 2005

"In the years ahead KPN and its customers will be entering an IP world in which communication is set to change fundamentally. … SIEMENS' strength in fixed and mobile networks was obviously extremely important to us."

Eelco Blok, KPN managing board member, December 2004

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Thank you !