



# **ITU/BDT Regional Seminar on Costs and Tariffs for Member Countries of the Tariff Group for Africa (TAF)**

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## **NGN services and business planning**

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# NGN services and business planning

## Content

- **NGN driving services**
  - **Services motivation and market issues**
- **Key economical factors and Convergence**
  - **Cost factors and economies of scale**
  - **Convergence**
  - **Tariff structures and revenue trends**
- **Business modeling and evaluations**
  - **Support to Business and Design**



# NGN services and business planning

## Driving Services for Residential

- VoIP
- Content delivery
- Video on demand

***NGN → Enabler for multiservice Convergence***



# NGN services and business planning VoIP

- **Context**

- Access to plain telephone services with different levels of quality of service from a data line (e.g. DSL or Wireless) and reduced pricing
- Computer to computer/ user to computer / user to user

- **Interested customer segments**

- Corporate: based on VPN VoIP
- SME / SOHO / homeworkers: based on IP Centrex
- Residentials: Secondary line
- Residential: Primary line



# NGN services and business planning VoIP

- **Motivation**

- End-user

- Access to different tariff schemes and cost saving
    - Enabler for IP services (CTI) => e.g. IP Centrex, Browse and Talk

- Operator

- Add value to BB delivery for emerging operators
    - Defensive position for incumbent operators

- Operator concerns

- Cannibalization (incumbent)
    - “Free services”
    - Interconnection
    - QoS and regulatory obligations (e.g. for primary line: power feeding, emergency service, localization,... )
    - End to end quality supervision



# NGN services and business planning

## Content Delivery

- **Context**

- Access to paid content with different quality levels
  - Music: (> 25% of total market) → Exploit Win-Win legal solutions
  - Games: (> 50 million users) → Need for BB and quick reaction time
  - Gambling: → Need for BB and short delay

- **Motivation**

- End-users
  - Trusted relation with operators
  - Integrated contract
- Operators
  - Capitalize on their access to users with increase of revenues through marginal investments
  - Get share of e-commerce and increase business chain
- Content providers
  - Ease of use for distribution channel;
  - Operators as trusted party



# NGN services and business planning

## Video on demand

- **Context**

- Access to movies on a per-demand basis (from DSL line or Wireless) (VoD, NVOD, iTV)

- **Motivation**

- End-users
  - Accessibility/Control / personalization of video content
- Operators
  - Capture a part of entertainment value chain
  - Uplifts DSL demand



# NGN services and business planning

## Video on Demand drivers and issues

- **Revenue Drivers**

- Share of revenue depending on value chain
- Possible payment intermediation

- **Market**

- Fundamental service for the triple play operation
- High interest and fastest growing market
- Candidate for convergence in broadband
- Willingness to pay per movie, per subscription and per time unit





# NGN services and business planning

## Driving Services for Business

- VPN
- IP Centrex
- Multimedia Conferencing
- Unified messaging
- ASP

***NGN → Enabler for Multiservice Convergence***



# NGN services and business planning

## Virtual Private Network - VPN

- **Context**

- Set of communication capabilities provided over a private network using a common telecom infrastructure shared by several companies

- **Motivation**

- More efficient and customized operation
- Homogeneous solutions for all company
- Private numbering plan
- Services integration
- Security management



# NGN services and business planning

## Virtual Private Network - VPN

- **Market issues**
  - Cost benefits: Balance between tariff levels for competing services (PSTN & leased line services)
  - CAPEX versus OPEX expenses over a period of time
  - Need for skilled telecom staff
  - Provision of VPN features
  - Billing and Management
  - Service Delivery Process Planning



# NGN services and business planning IP Centrex

- **Context**

- Provides PBX-like voice / CTI services to enterprises
- Main targets: SOHO/SME and teleworkers

- **Motivation to users**

- No CAPEX investment from non-core business (telecom)
- No operation staff to be trained and employed
- Deployment follows company's pace (growth or reduction)
- Easier cost management (against move, obsolescence, traffic patterns)
- Multi-site converged service (e.g. for homeworkers)
- Willingness to pay: 8-15 Euros per month



# NGN services and business planning IP Centrex

- **Motivation to Operators**

- Offer voice services on top of (deployed) data-VPN,
- Move up the value chain providing core-business (voice) services
- Reduce churn to in-house solutions and competitors
- Possible building block for an SME bundle
- Associate to Voice and Data VPN for full Virtual Company solution (Phones, PBX, Mobiles)



# NGN services and business planning

## Multimedia Conferencing

- **Context**

- Multi-party room-based or PC-based multiservice conference (with document sharing, Instant Messaging facilities,...)
- Non-IP users allowed in voice
- Room-based quality with "NetMeeting - like" ease of use and services

- **Market Issues**

- Threat of "free" web conference?
- Cannibalization of ISDN visioconf (leased lines; BRA)?
- Willingness to pay: 0.5 to 0.7 \$ /min per user



# NGN services and business planning

## Multimedia Conferencing

- **Motivation**

- For End User

- Teleconf. shares time and costs and improves efficiency.
    - Intermediate step between phone call and face to face visit
    - Lower cost / better user friendliness than ISDN room-based visioconf.

- For Operator

- Incremental value on data/voice
    - Brick for package to business segment or vertical service (distance learning; home working...)
    - Lower cost to operate Visioconf. helpdesk



# NGN services and business planning

## Unified Messaging

- **Context**

Retrieve from anywhere any message from any device: e-mail, voice mail, SMS, MMS, Fax

- **Motivation**

- To End-User

- Main target: Businesses, Teleworkers
    - Productivity gain, ease of use, time-critical information management

- To Operator

- Move up value chain in Business segment (competes with enterprise-related EVS/Messaging)
    - Leverage Mobile services





# NGN services and business planning

## Unified Messaging

- **Market Issues**

- Service partly offered by advanced IP-PBX systems
- Benchmark with Mobile penetration
- Check competitive positioning vs. Mobile operator
- Interest to be a component for a bundle in the business segment
- Willingness to pay around 1 to 3 \$/employee/month



# NGN services and business planning ASP

- **Context**

- ASPs provide a contractual service offering to deploy, host, and manage access to an application residing in a facility other than the customer's site.

- **Motivation**

- To end user
  - Solution to lack of internal IT resources
  - Potential cost savings and better cost control
  - Easier and faster software implementation
  - Gives access to otherwise unaffordable applications (SMEs)
  - Access to latest technology and superior connectivity
- To operator
  - Enlarge value chain business to the applications and
  - Empower attractive bundling for business customers
  - Increases participation in e-business



# NGN services and business planning ASP

- **Market Issues**

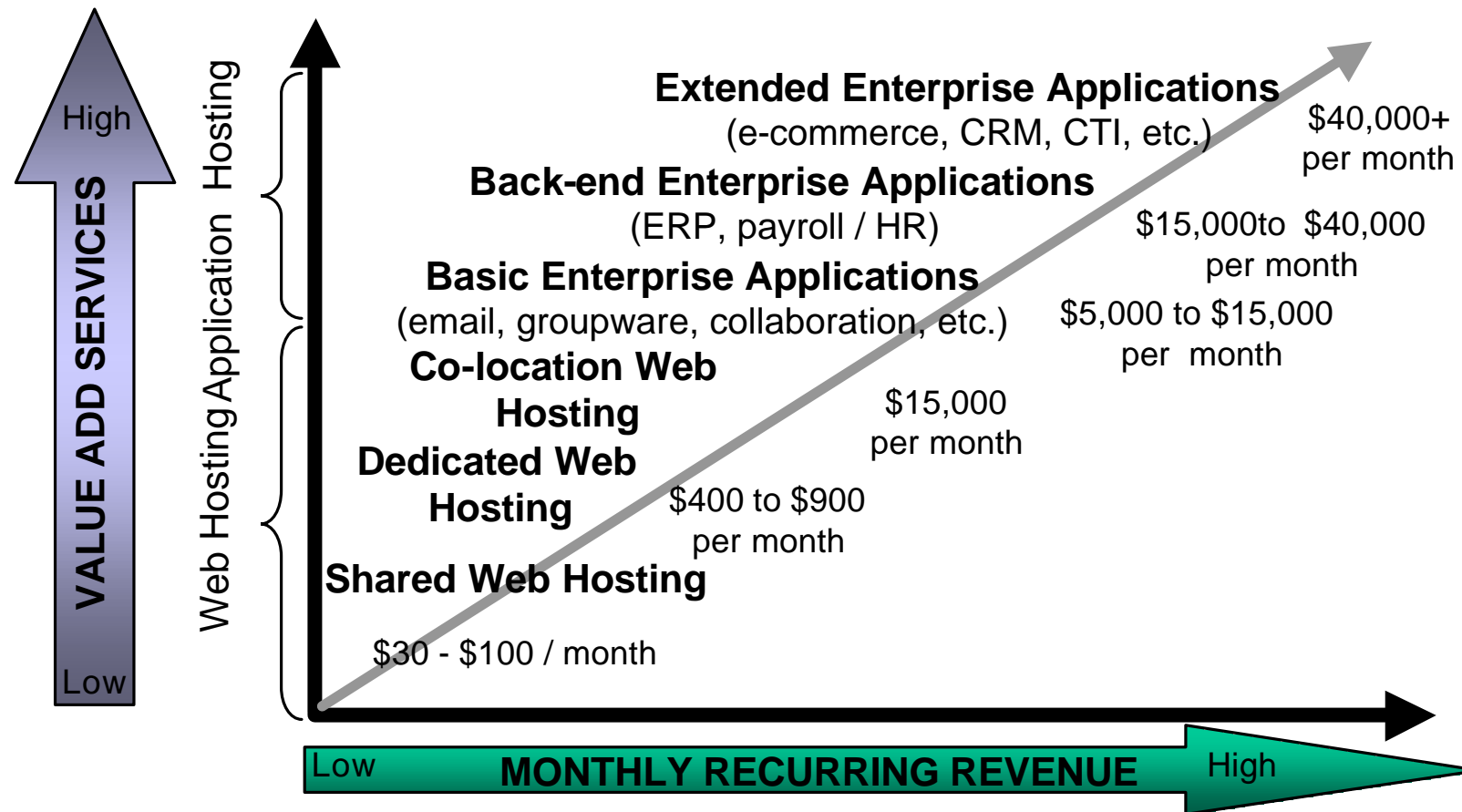
- Customer acceptance culture due to external control
- Availability of network performance, reliability and robustness
- Enhancement of applications towards web-enabling capabilities
- Some Services partly offered by advanced IP-PBX systems



# NGN services and business planning

## ASP

### Main applications and projected value/revenue added



Source: Cherry Tree & Co



# NGN services and business planning

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# NGN services and business planning

## Key Factors: Cost structure and savings

- High cost impact of network infrastructure layer: **> 60%** in Greenfield areas of which **> 70%** in access segment.
- Dimensioning and cost evolving in 3 phases through time:
  - A) Accessibility due to **Geo coverage** either physical or radio
  - B) Equipment in **Ports/users** as customers grow
  - C) Capacity in **Traffic** due to increase of multiservice applications
- Significant savings by resources and equipment sharing within an operator due to convergence at network layers : i.e.: **30%**
- Additional savings inter-operators due to cost sharing of non-core equipment (buildings, towers, etc.) **> 20%**



# NGN services and business planning

## Key Factors: Economies of scale

Economies of scale are an inherent characteristic to the telecom technologies that impacts on solutions, evolution and also now survivability in competition

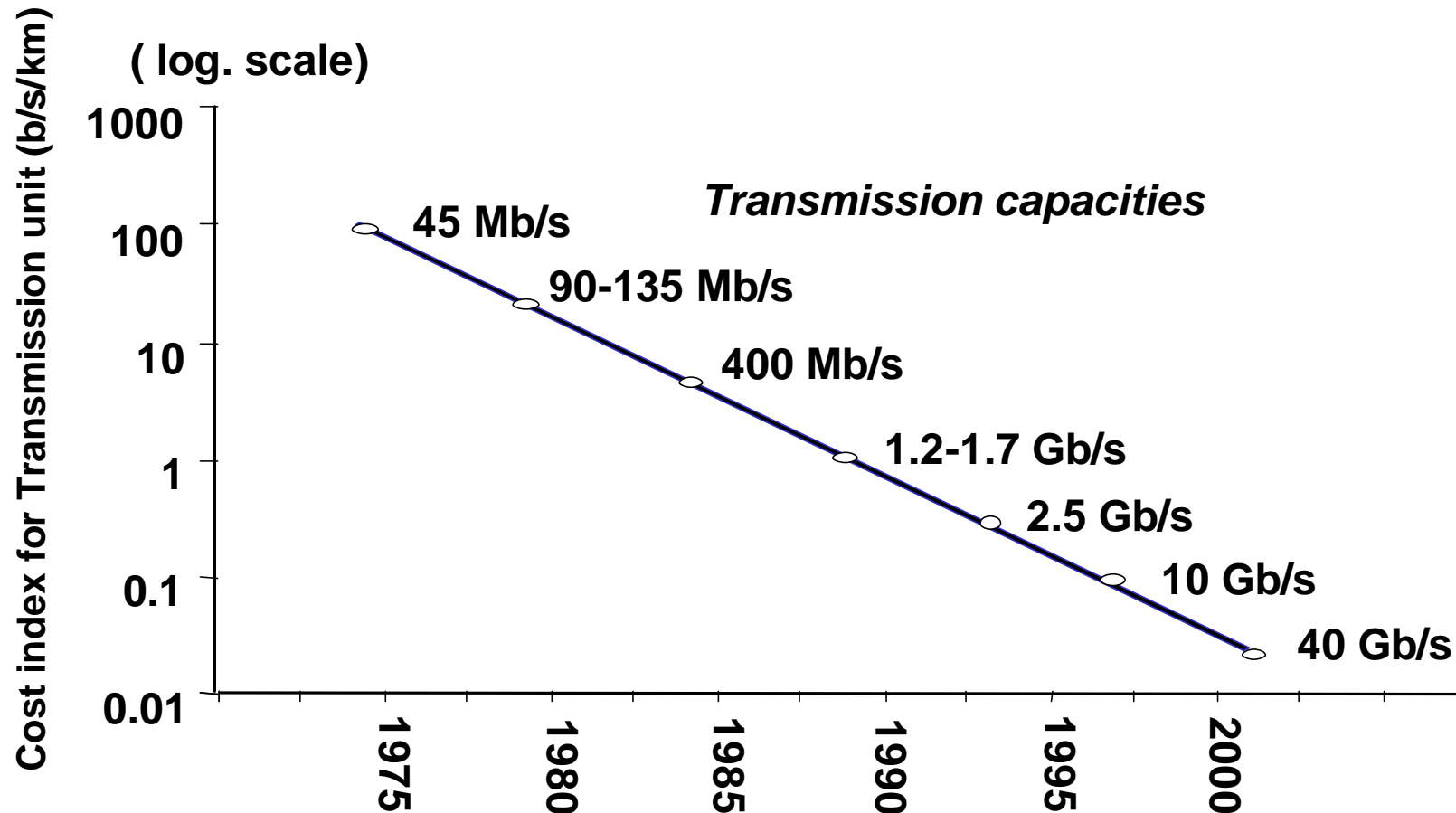
– The five dimensions of the economy of scale:

- By **Size** of the systems → Larger systems cheaper per unit
- By **Technology** capabilities → New technologies with higher capacity
- By **Traffic efficiency** with the occupancy → Higher utilization for a given GoS when more servers
- By customers **Density** → Quadratic increase with coverage radio
- By **Volume** of purchasing → Discount per volume in log scale



# NGN services and business planning

## Key Factors: Economies of scale by technology



*Source: AT&T data reproduced by Word Bank and TeleGeography Inc.*

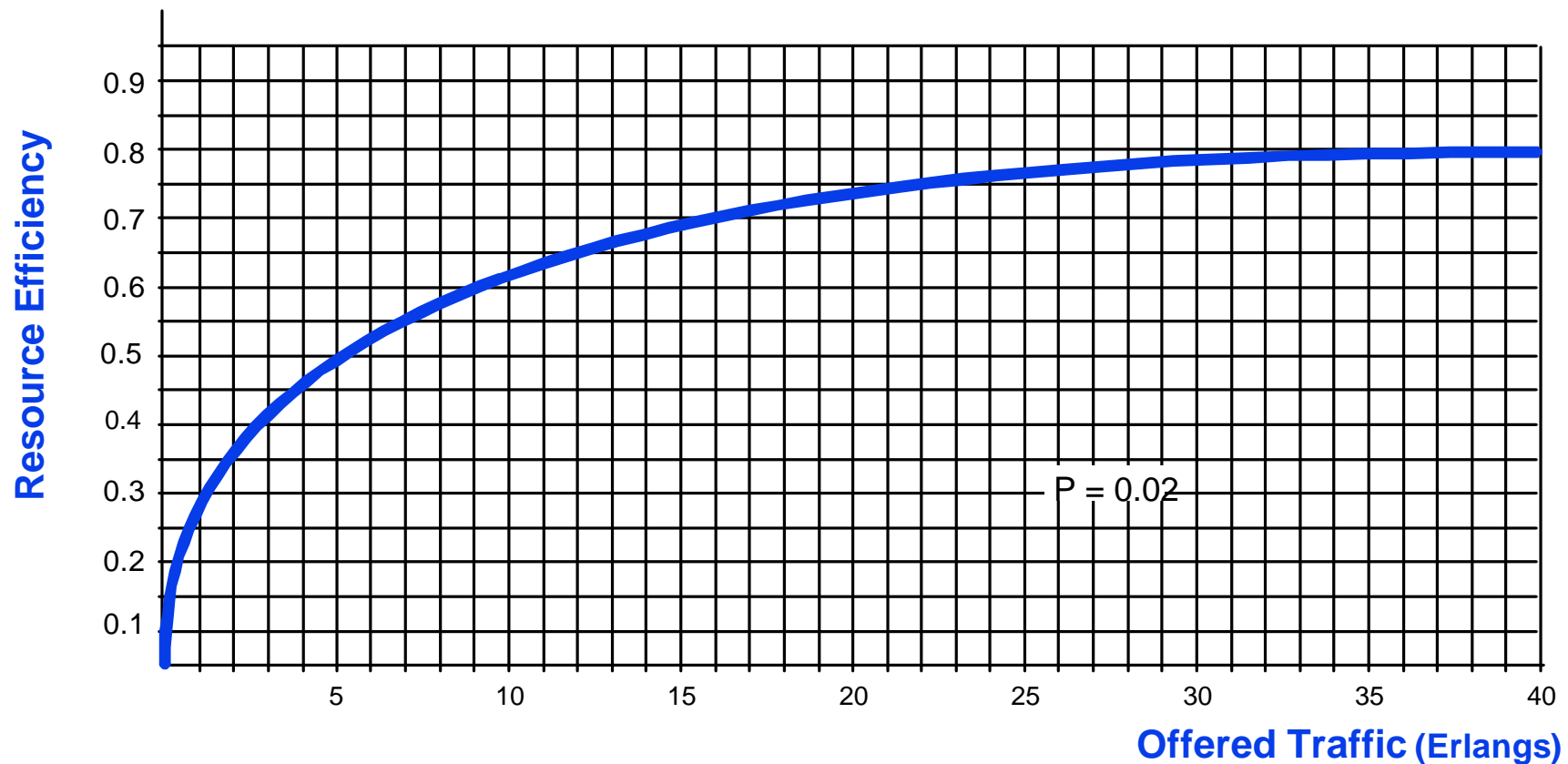




# NGN services and business planning

## Key Factors: Economies of scale by traffic efficiency

Impact on efficiency increase for a given quality with traffic and group size (non-linear effect)

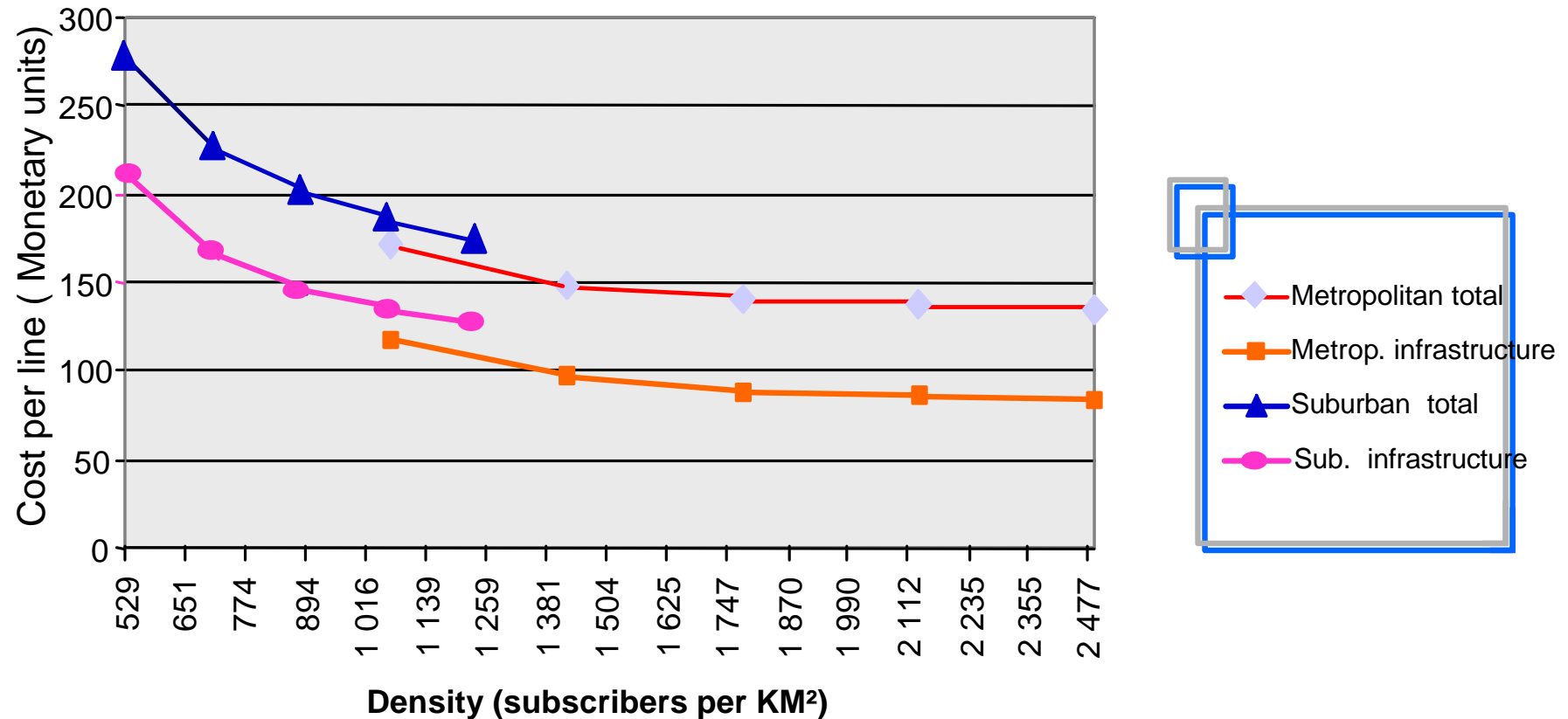




# NGN services and business planning

Key Factors: Economies of scale by density

Metropolitan and suburban scenarios



High impact of customer density in cost per line and  
higher impact on Rural (up to 20 to 1)



# NGN services and business planning

## Key Factors: Competition level

### Different Levels of Competition

- **L1) Monopoly** for all geographical areas, customer classes and service types
- **L2) Limited monopoly** per area and/or service types while free operation for niche operators
- **L3) Moderate competition** for all network segments and services
- **L4) High competition** for high revenue customers and services
- **L5) Aggressive competition** for all areas, customers and services

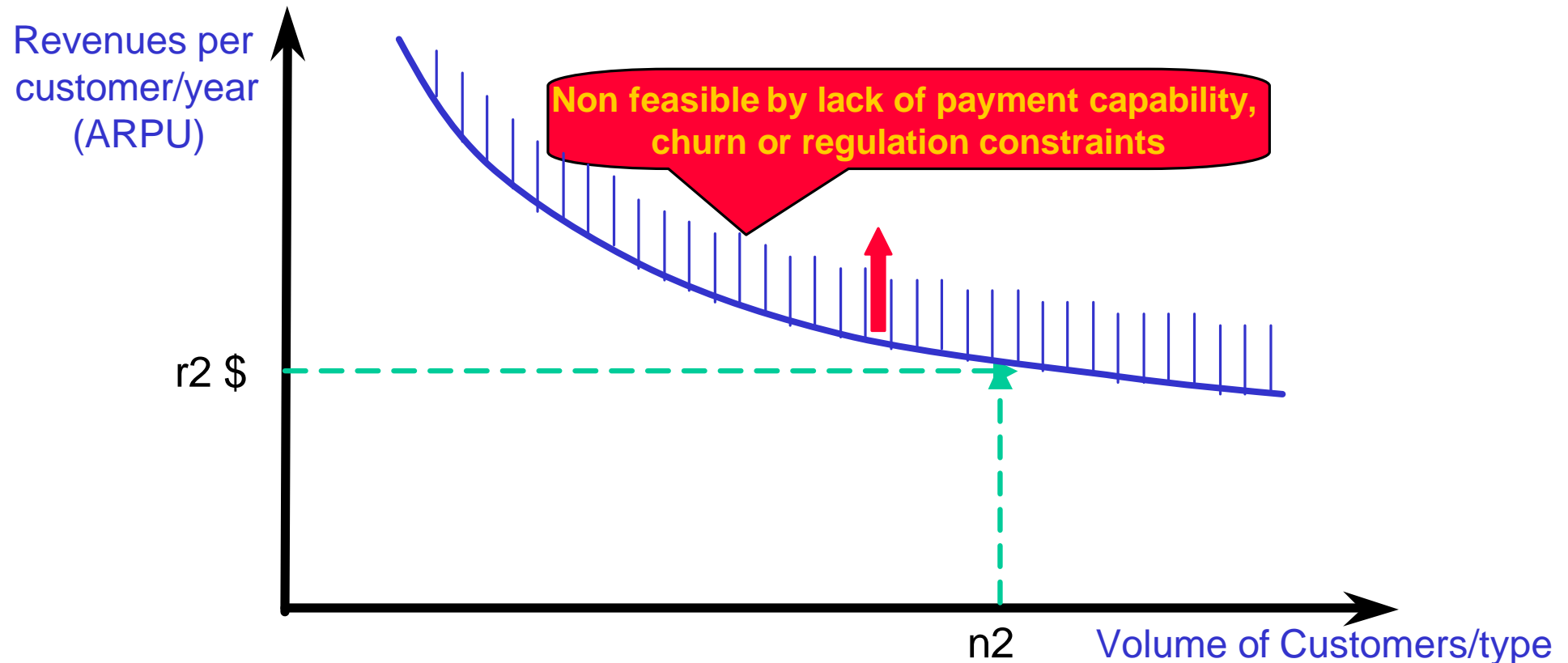
*“Efficient telecom implies different competition levels as a function of country size and development status”*



# NGN services and business planning

## Key Factors: Competition level

Business feasibility space as a function of volume and ARPU



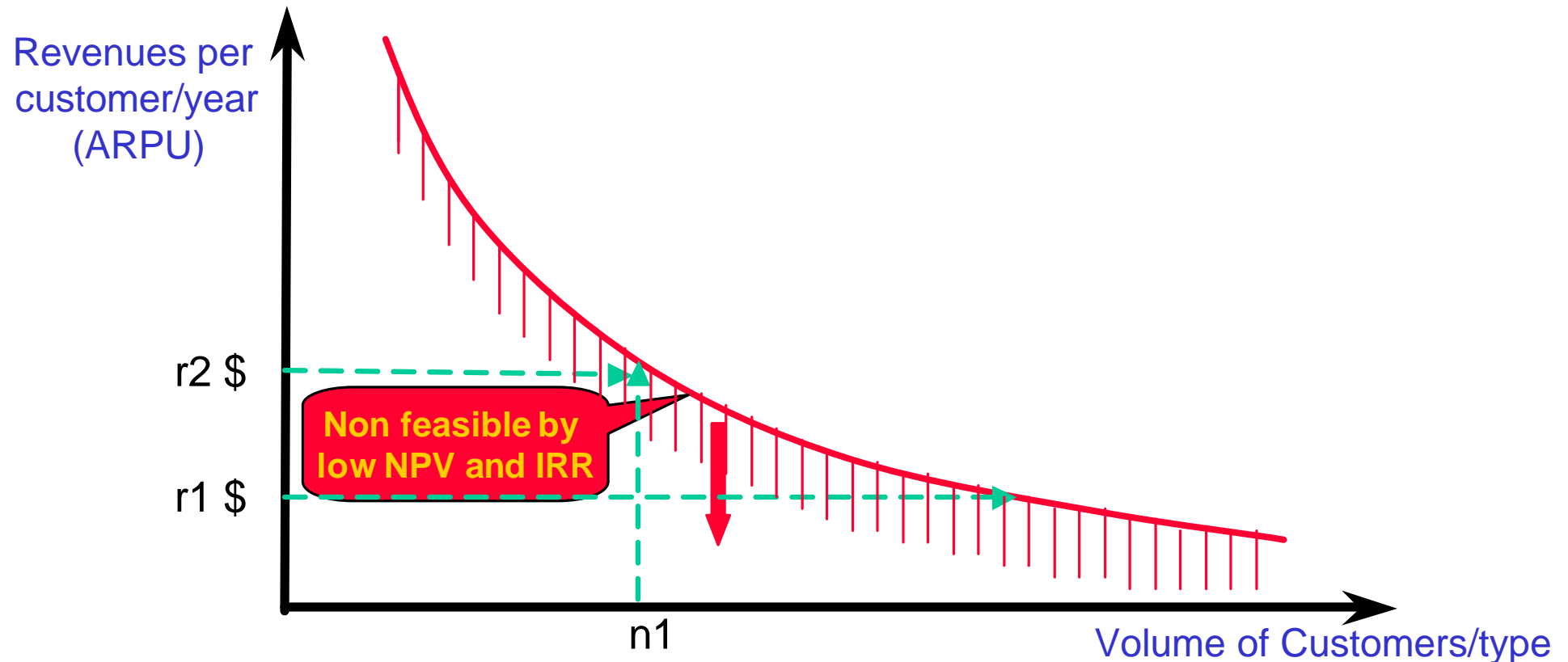
ARPU is limited by the economical development level and fixed costs



# NGN services and business planning

## Key Factors: Competition level

Business feasibility space as a function of volume and ARPU



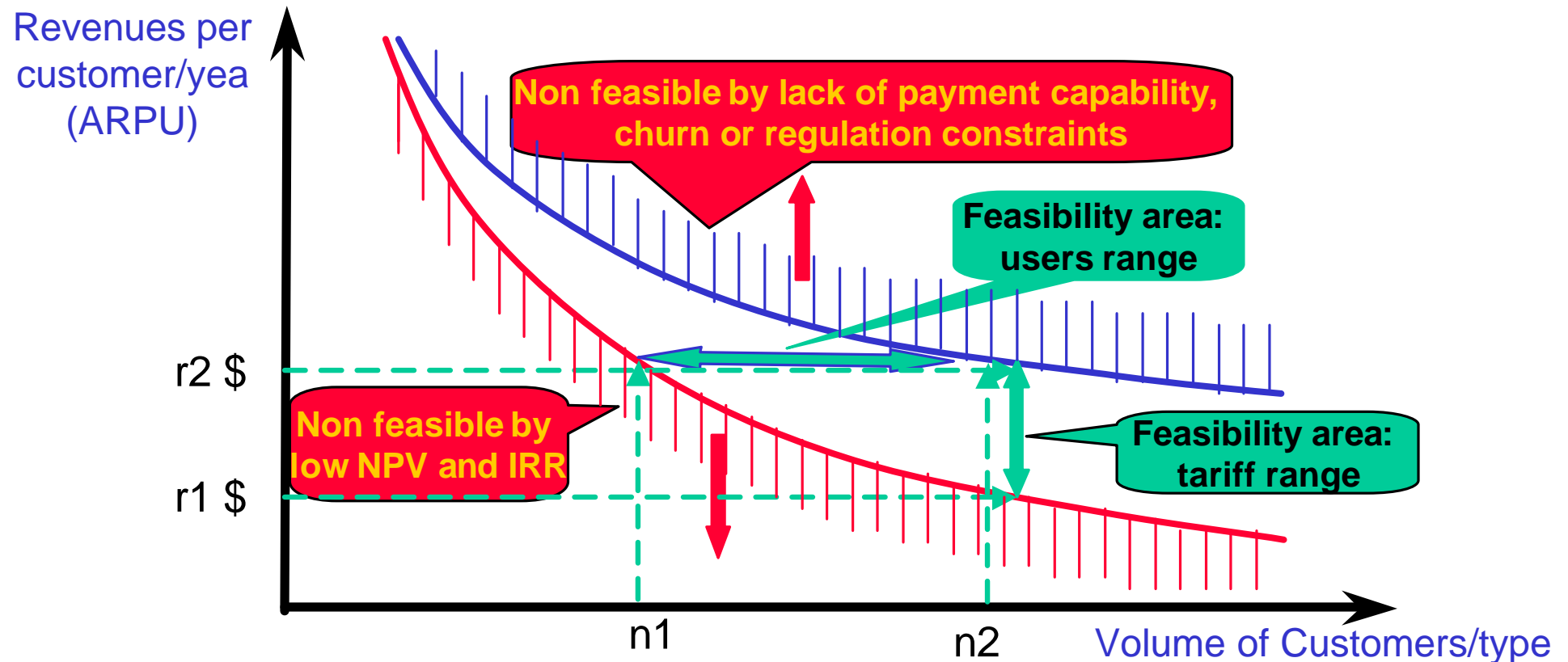
Business feasibility limited by positive NPV



# NGN services and business planning

## Key Factors: Competition level

Business feasibility space as a function of volume and ARPU



Feasibility space highly dependent on country size and economical level



# NGN Network Architecture

## Cost drivers in NGN

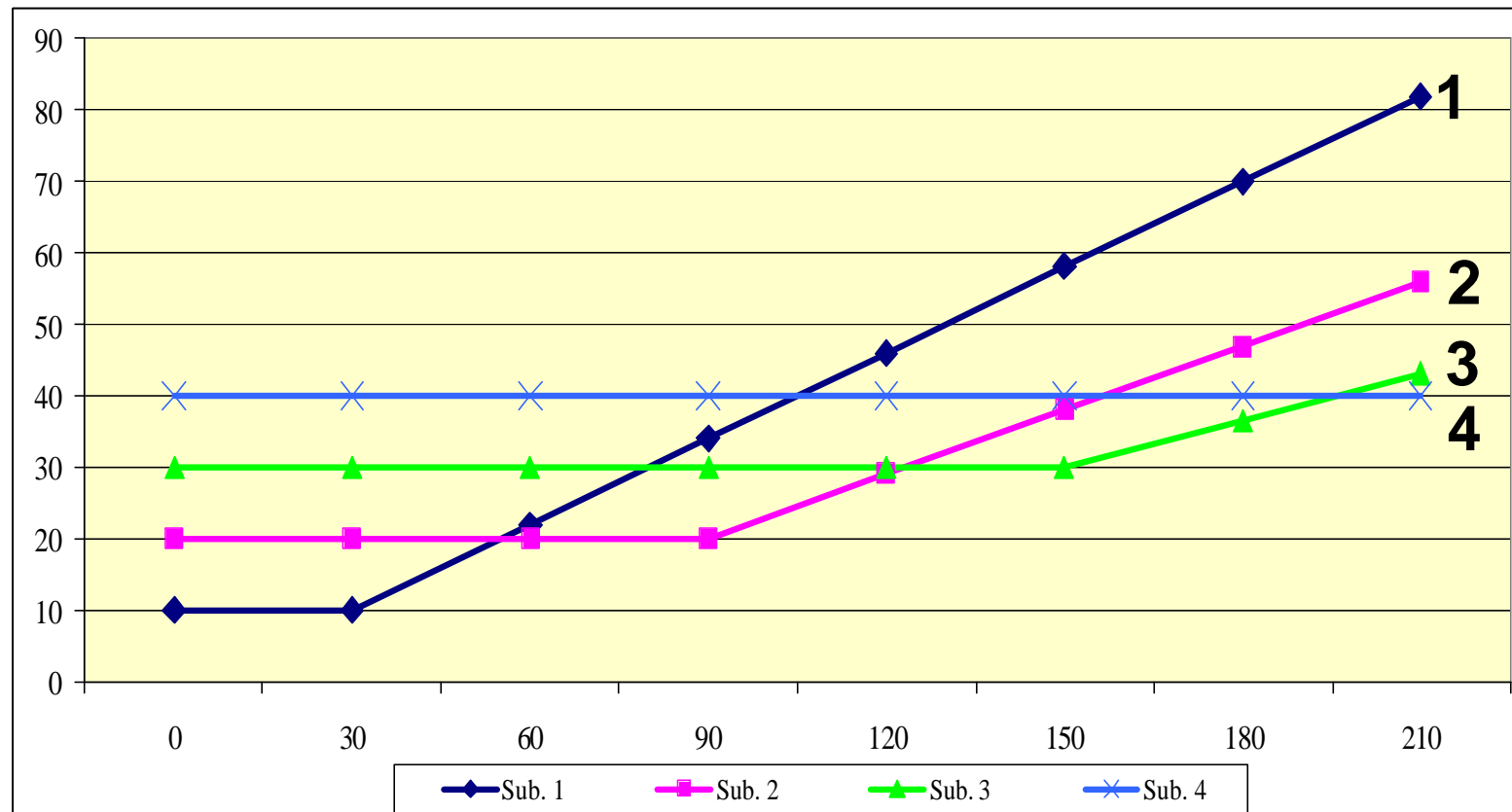
- Volume of customers per category
- Bandwidth demand per origin/destination
- Packet processing rates for control related functions
- Variety of applications/services and related platforms
- Content storage and location within the network
- Leasing of physical or communication resources

**Backward evaluation of contribution to services cost is essential to calculate cost dependent tariffs, cash-flows and IRR**



# NGN services and business planning

## Combined fixed and traffic dependent rates



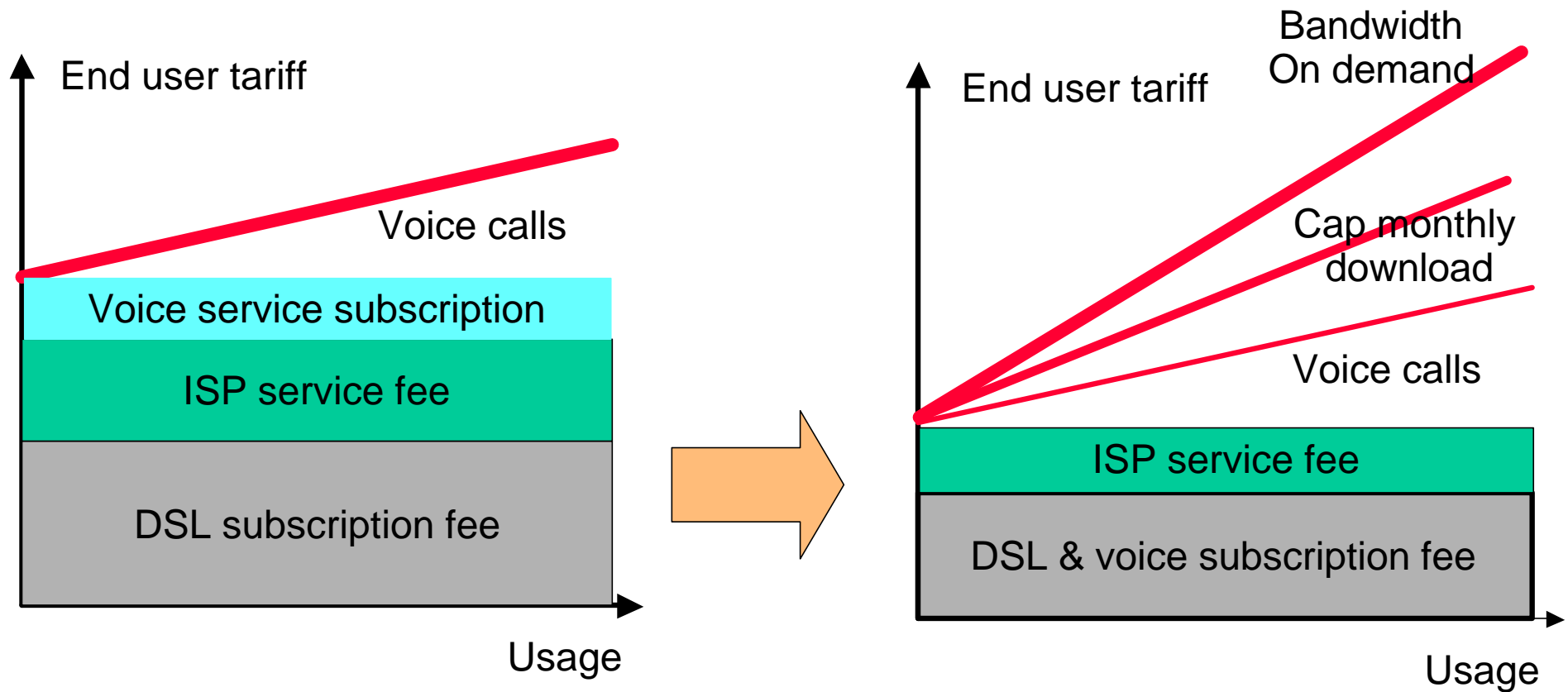
Combined fixed and variable tariffs has best flexibility  
for customers, operators and business





# NGN services and business planning

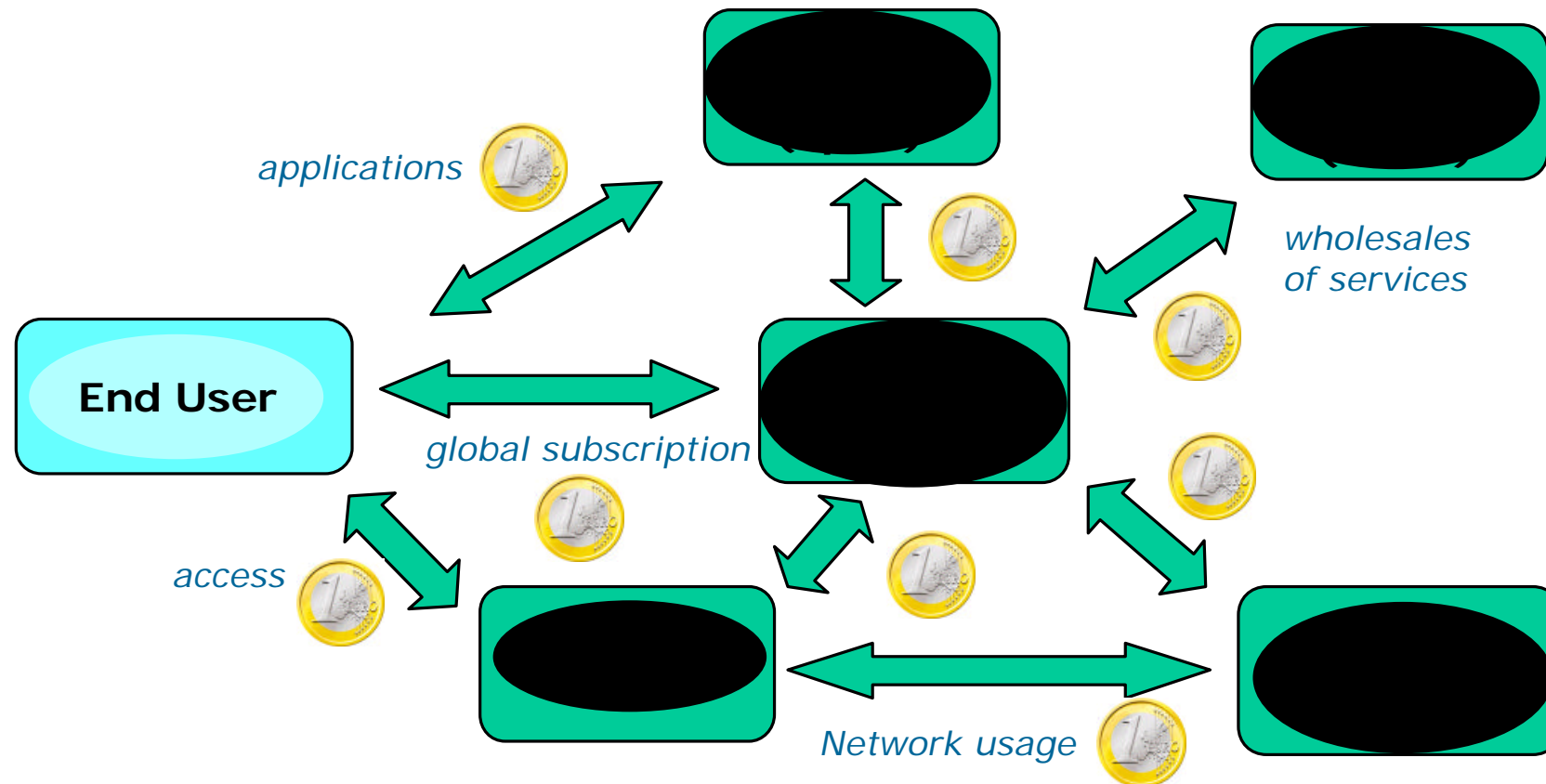
## Illustration for tariffs strategy in DSL





# NGN services and business planning

## Revenue chain with multiple business players

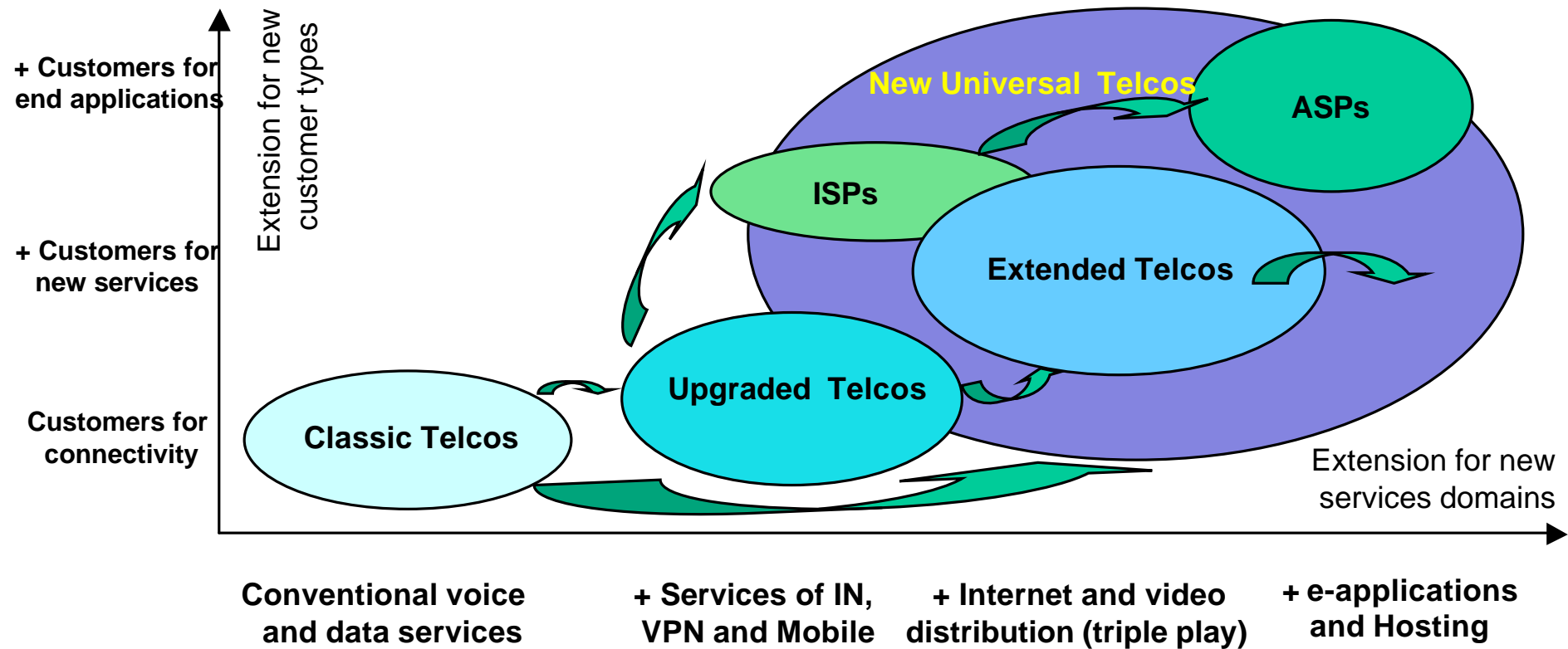


Increase of players for multiservice business specialization



# NGN services and business planning

Universal Telcos converge in order to increase value chain



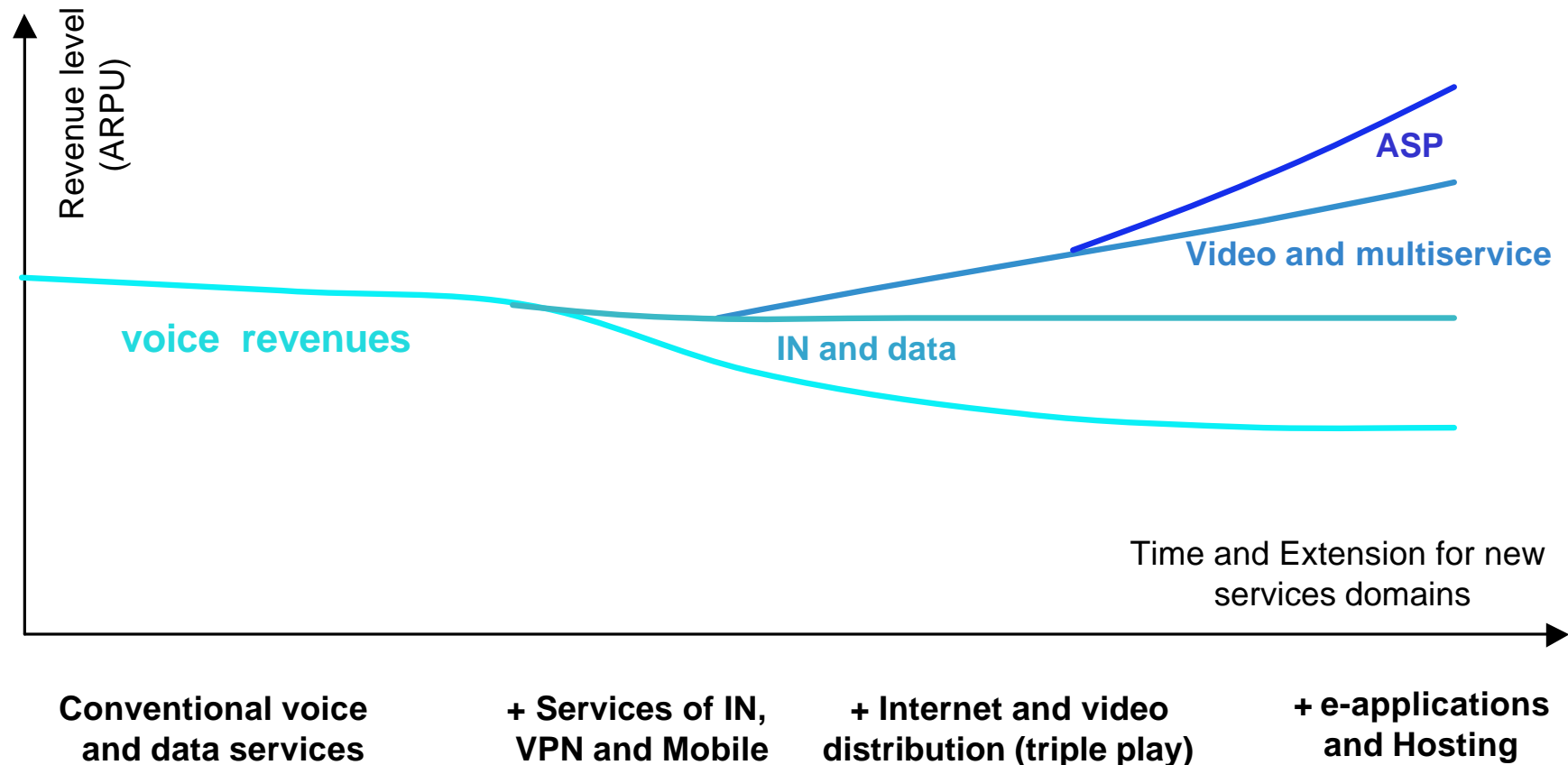
Specific migration and timeframe to be optimized for the country context and regulatory conditions



# NGN services and business planning

## Migration steps

Evolution of revenues with major service domains



Convergence strategy is fundamental to ensure business feasibility



# NGN services and business planning

## Key factors for survivability in competition

- Push for **new services**
- Imaginative **pricing** strategies and bundles
- Actions for **market share** capture and better **take-up** rate
- Actions do minimize **churn**
- Actions to decrease **Cost of Ownership** and share common resources
- Business **profitability** positive and within or better than indicators benchmark



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# NGN services and business planning

## Support tools: Business

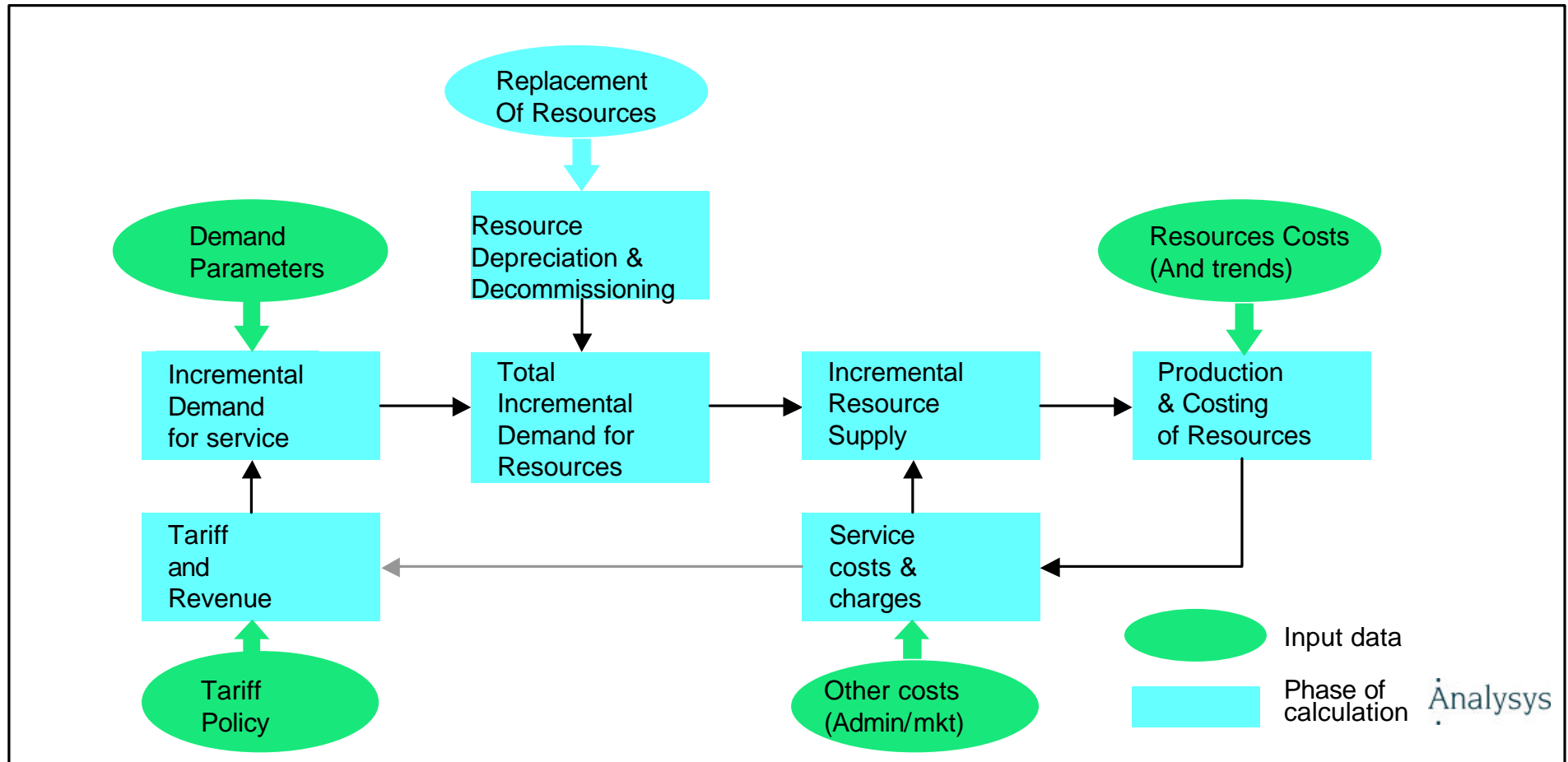
- **Required functionality for Business tools**
  - Service Demand Projection
  - Dynamic modeling for technology **substitution and migration rates**
  - Dimensioning **multiple flows** (circuit and packet modes)
  - Evaluation of network resources and associated investment (CAPEX)
  - Evaluation of revenues for given tariffs and installation rate
  - Modeling **multiple resource lifetimes**
  - Modeling of demand elasticity to tariffs
  - Interrelation between network growth and operational cost (OPEX)
  - **Cost assignment** as a function of utilization rates
  - Generation of standard financial results like Cash Flow, Profit & Loss, Balance Sheet, NPV, IRR, etc.



# NGN services and business planning

## Support tools: Business

Activity Flow in STEM to evaluate migration alternatives:



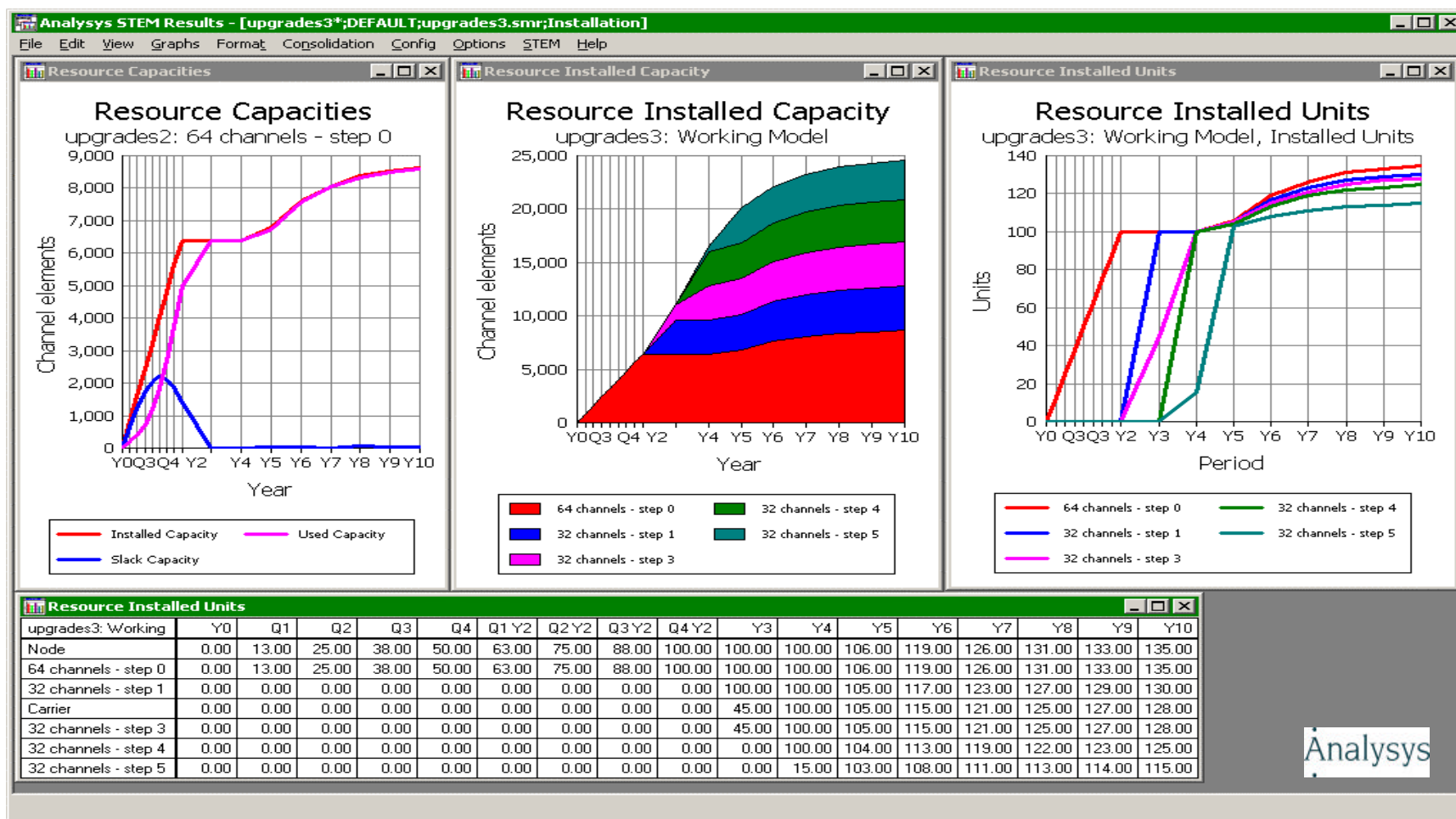




# NGN services and business planning

## Support tools: Business

### Type of STEM tool results

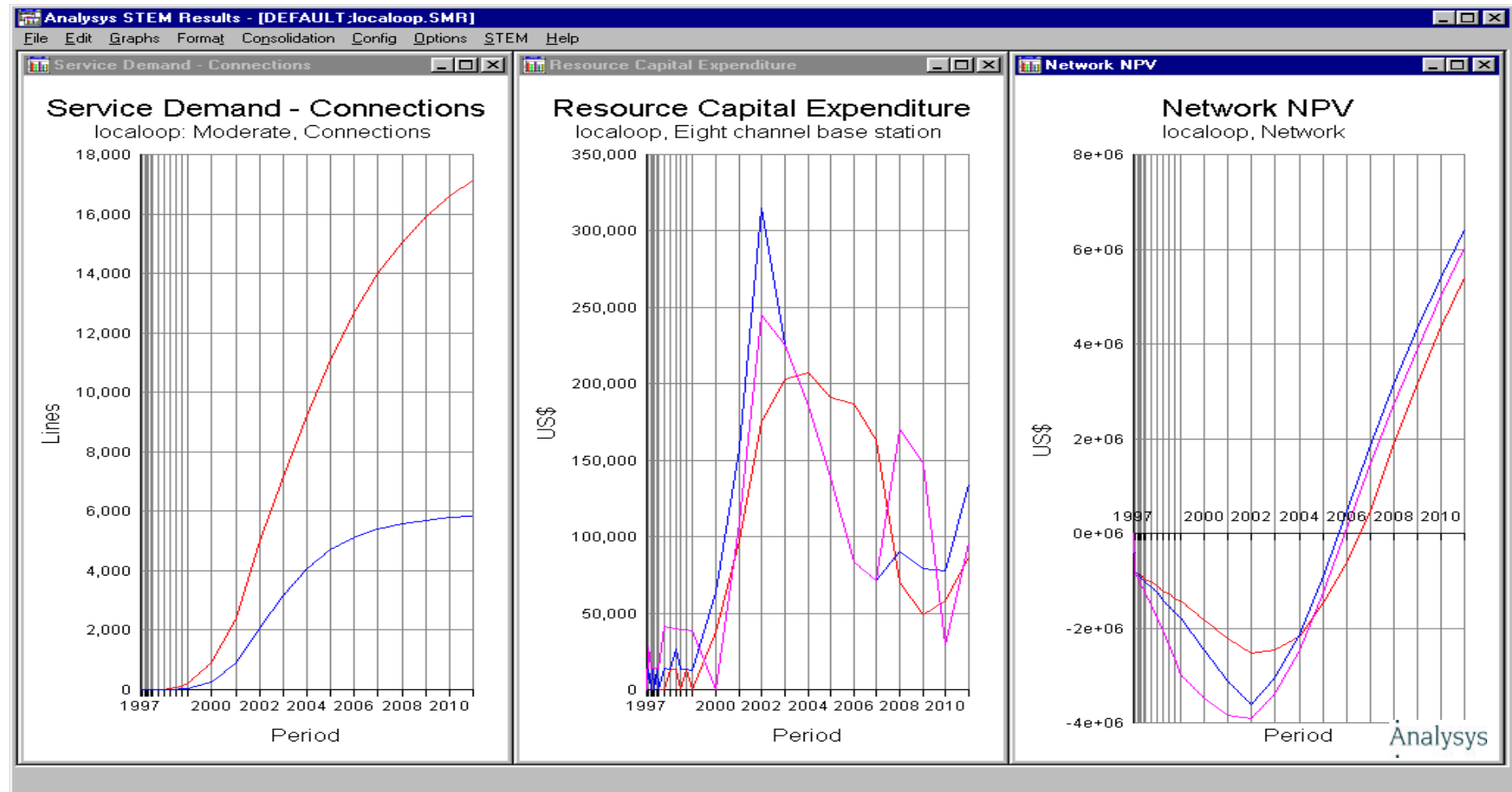




# NGN services and business planning

## Support tools: Business

### Type of STEM tool results



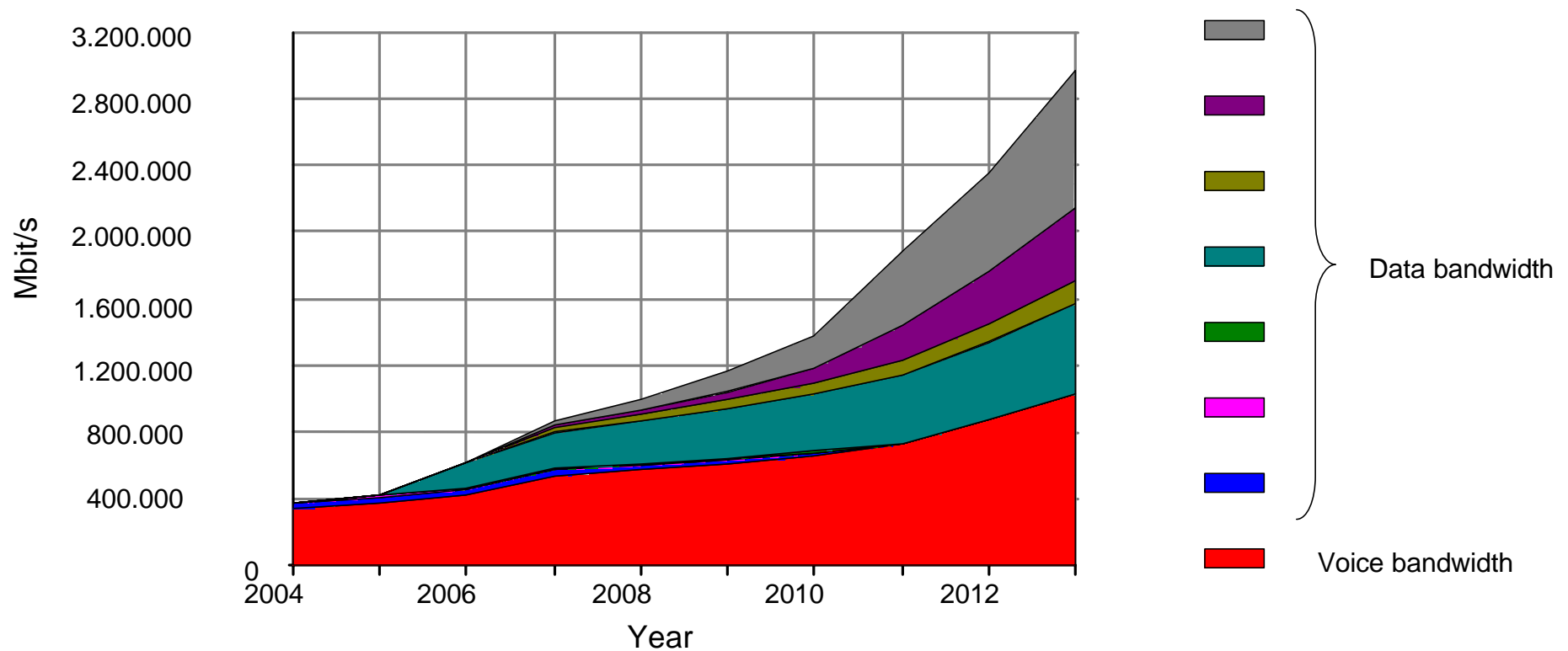


# NGN services and business planning

## Support tools: Business

Example of multi-service bandwidth evolution in 3G

Bandwidth per service class of business customers



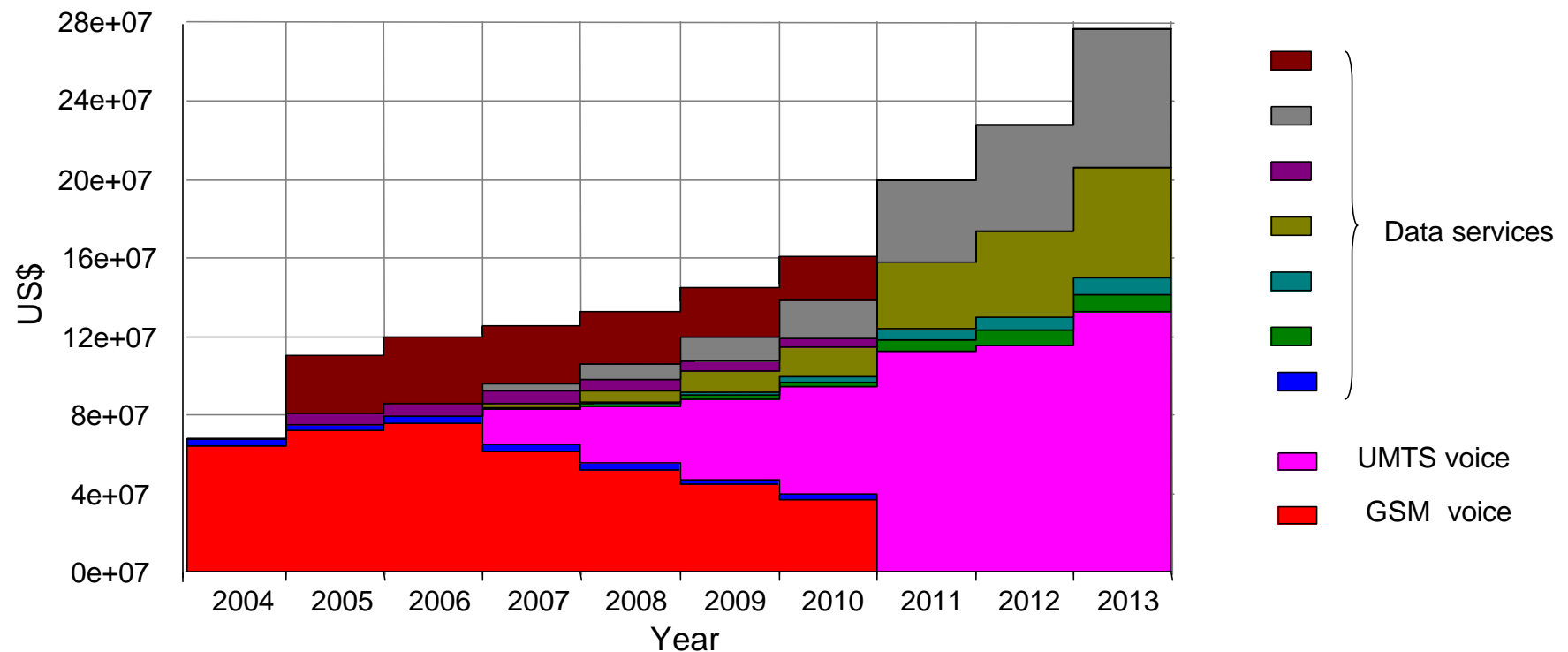


# NGN services and business planning

## Support tools: Business

### Example of multi-service revenue evolution in 3G

Revenue per service type for consumer customers





# NGN services and business planning

## Summary of Key Factors

- Plan **business and services first**, later the network with proven solutions.
- Analyze **new business chain** from content to delivery
  - Take advantage from all **economies of scale**
- Design financial performance with **best business practices**: compare and optimise NPV.