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Convergence Strategy and Trends

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Convergence Strategy and Trends
Content

• Convergence Dimensions
• Convergence drivers
  • Cost structure and savings
  • Economies of scale
  • Competition Level
• A stair case strategy and evolution trends
  • Business trends per category
  • Migration steps towards universal operation
Convergence Strategy and Trends

Convergence dimensions

Convergence is taking place at several levels

- **At Network level**
  - One network for all service types: NGN, IMS

- **At Service level**
  - Fixed, Nomadic, Mobile, Interactive and Broadcasting, etc.

- **At radio Access level**
  - DECT, WiMax, 3G, etc.

- **At Operational level**
  - OSS, Billing, etc, for all customer classes

- **At Terminal level**
  - 2G, 3G, PDA, etc.

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Convergence dimensions

Convergence steps at network level

- Starting with the 5 current separated networks based on TDM (PSTN, IN, SS7, Mobile, Data ATM/IP)
- Migrating to single IP based NGN at core segment
- Migrating at IP based NGN at Edge and Access Segments
- Incorporating partial pre-IMS open service architecture
- Incorporating full end-to-end IP mode with IPv6
- Implementing full IMS functionality
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Convergence profiles

<table>
<thead>
<tr>
<th>Convergence Domain</th>
<th>Separated Implementation</th>
<th>Low level convergence</th>
<th>Medium level convergence</th>
<th>Full convergence</th>
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<tr>
<td>Network</td>
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<td>Terminals</td>
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Migration profile driven by: Initial status, Market development, Economy of scale and Operator Strategy

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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%

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
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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”
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**Key Factors: Competition level**

Business feasibility space as a function of volume and ARPU

- **Revenues per customer/year (ARPU)**
- **Volume of Customers/type**

Business feasibility limited by positive NPV

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**Key Factors: Competition level**

Feasibility space highly dependent on country size and economic level

- **Revenues per customer/year (ARPU)**
- **Volume of Customers/type**

Business feasibility limited by positive NPV and payment willingness

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Business domains and trends

Illustration case for customer categories and revenues

"Customer stratification should be analyzed per country"

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**Business domains and trends**

Example of Value Added chain and operators movements to gain economy of scale and market

- **Applications and Services**
  - Agreements with content providers and e-commerce

- **Network nucleus**
  - New multi-service development
  - Agreements with content providers and application service providers

- **Edge**
  - Agreements with content providers

- **Metropolitan network**
  - Agreements with wholesale operators

- **Local Access**
  - Acquisition/merging of service providers
  - Development of new access loops and Unbundling

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**Migration steps**

“staircase” for leading growing alternatives

- **Classic Telcos**
  - Conventional voice and data services

- **Upgraded Telcos**
  - Services of IN, VPN and Mobile

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Migration steps

“staircase” for leading growing alternatives

- Conventional voice and data services
- Services of IN, VPN and Mobile
- Internet and video distribution (triple play)

- Classic Telcos
- Upgraded Telcos
- Extended Telcos

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Migration steps

“staircase” for New Universal Telcos

- Conventional voice and data services
- Services of IN, VPN and Mobile
- Internet and video distribution (triple play)
- e-applications and Hosting

- Classic Telcos
- Upgraded Telcos
- Extended Telcos
- New Universal Telcos
- ISPs
- ASPs

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

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Migration steps

Evolution of revenues with service domains

- Conventional voice and data services
- Services of IN, VPN and Mobile
- Internet and video distribution (triple play)
- e-applications and Hosting

Convergence strategy is fundamental to be competitive and to grow

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Role of Business Planning

- Forecast solutions, costs and revenues
- Evaluate future Cashflows, NPV, IRR, ROI, etc.
- Perform “What-if” analysis for optional alternatives on Volume of customers, customer mixes and services domains
- Perform benchmarking with “best in class” operators
- Decision making on strategy and actions in competition based on quantified evaluations
- Recommend alternatives and actions to ensure success
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Role of Business Planning

Evaluations to be based on robusts techno-economical tools due to high number of alternatives and complexity

Case study performed for medium size country with mixes of customer classes and services domains:

– Multiservice IP Network with integrated operation available
– Three service categories: Voice, Data/Internet, Video distribution
– Modeling demands, multiservice traffic flows, dimensioning, network resources, CAPEX, OPEX and financial results for different levels of competition
– Evaluate differential future Cash-flows, NPV, IRR, etc. for a 10 years period

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Role of Business Planning

Effects of the mix of customers on Reference Scenario: Low competition level
Network NPV

- SME and SOHO with quicker recovery but less NPV and company value at medium term
  - “All customer segments” case with much better behavior

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Role of Business Planning

Effects of the mix of services on Reference Scenario: Low competition level
Network NPV

- Major impact of service classes on NPV and company survivability
  - Single service classes without future
  - High benefit of “all services” case

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Role of Business Planning

Effects of the mix of services on typical scenario: Medium competition level
Network NPV

- Increase of competition level amplifies the previous effects on feasibility: big differences between service mixes
- Data only or single service classes without feasibility at medium term
  - Very robust behavior for the “all services” case
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Recommendations

- Perform proper modeling of key techno-economical factors for business evaluation of convergence alternatives
- Focus on extended services for multiple customer types, multiple services domains
  - Take benefit of all economies of scale

!! Which convergence will happen?
Combination Driven by Market, Economy of scale and Competition!!