“Fixed mobile convergence for an integrated operator: a techno-economic study”

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The presentation is based on results from ECOSYS project
Special thanks to all contributors to ECOSYS Deliverable 22
Contributors
Partners in ECOSYS project
Objectives

- To study the fixed-mobile convergence (FMC) of services and networks
- To develop migration scenarios for different players in the FMC ecosystem.
- To support the regulatory decisions on fixed-mobile convergence
Approach

- Definition of the concept of FMC
- Identification of the key players in the FMC ecosystem
- Identification of the key drivers for FMC adoption by different players in the FMC ecosystem.
- Quantitative modelling of the FMC migration scenarios for two players:
  - Integrated operator in a large western European market.
  - Pure play mobile operator in an emerging market.
The motivation for technoeconomic evaluation

Market
- Demand
- Willingness to pay
- User behaviour

Technology
- Technology variety
- Open provisioning
- Service integration

Strategy
- Where?
- When?
- How?
ECOSYS/TONIC Tool - Methodology

Components Database
  - Cost Evolution
  - OA&M Class
  - Volume Class

Components
  - Operators
  - Suppliers
  - Standardization body
  - Other

User inputs
  - Services
  - Architectures
  - Geometrical Model

Operators
  - Surveys

Geometrical Model
  - Market Size
  - Tariffs
  - Policy

Decision Index calculation
( NPV, IRR, Payback period )

Financial Model
  - Year 1
    - Revenues
    - Investments
    - Cash Flows
    - Profits
  - Year 2
    - Revenues
    - Investments
    - Cash Flows
    - Profits
  - ...
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Market Size
- Tariffs
- Policy

Geometrical Model
- Competition Model

Operators
- Surveys

Real Options
Steps in Network Evaluation

- Definition of service basket
- Network scenarios
- First Simulations – Main Financial results
- Sensitivity and Risk Analysis
- Evaluation Recommendation and Guidelines
The Tool

- Based on Office 2003 platform
  - Excel & Access
- Automatic sensitivity analysis
- Compatibility with Risk Analysis Tool(s)
## The tool & its database

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**TONIC database 1.0**

- [Cost Components](#)
- [Services](#)
- [Classes](#)
- [Set Study Period](#)

**Other Database**

**Create Database**

**Exit TONIC**

**Data Source:**

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Main Financial Results

- Net Present Value, NPV
- Internal Rate of Return, IRR
- Payback Period
- Financial indicators
  - Investments
  - Running Costs
  - Revenues
  - Cash Flows
  - Depreciation
  - Profits
  - Taxes
  - Retained Cash Flows
  - Cash Balance
  - Rest Value
Integrated operator (scenario description)

- Operator owns already both 3G mobile and fixed networks
- Reasons for the FMC
  - Reduce the OPEX costs
  - Retain the existing customers
  - Keep the revenues at least the same levels
- Gradually convergence through IMS (beginning 2007) → finally an all IP network
- Only the differences (Delta) between the non-FMC and FMC case are considered
- Operator on a “Western” European country type (calculated average from France, Germany, Italy and UK)

<table>
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<th>Country Type</th>
<th>Large</th>
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<td>Total population in 2005</td>
<td>65 200 000</td>
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<td>Population growth</td>
<td>0.3% per year</td>
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<td>Area of the country (km²)</td>
<td>370 000</td>
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Integrated case (key assumptions)

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<th>Fixed Voice</th>
<th>Fixed BB Access</th>
<th>Voice</th>
<th>Mobile Data 1</th>
<th>Mobile Data 2</th>
<th>Mobile Data 3</th>
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<td>FMC Bronze</td>
<td>X</td>
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<td>FMC Silver</td>
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<td>FMC Gold</td>
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OPEX assumptions

- **Network related elements**: (network operation, OSS operation, maintenance and repair of the network elements, equipment and software licenses, rental of network resources, costs for site rental and electricity)
- **Marketing and sales related elements**: (sales and marketing, customer acquisition and subsidisation)
- **Customer service related elements**: (customer care, charging, billing, call center)
- **IT, support and service development related elements**: (service management, design and development of new services, Business IT, management support, costs regarding to purchasing licenses for content delivery)
- **Interconnection and roaming costs**: (termination fees for calling or completing a call or a session originated or terminated in another network)

<table>
<thead>
<tr>
<th>OPEX category</th>
<th>Mobile operator</th>
<th>Fixed Operator</th>
<th>FMC operator</th>
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<tbody>
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<td>Network</td>
<td>20%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Marketing and sales</td>
<td>26%</td>
<td>30%</td>
<td>35%</td>
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<tr>
<td>Customer care</td>
<td>8%</td>
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<td>7%</td>
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<tr>
<td>IT, support and service</td>
<td>11%</td>
<td>15%</td>
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<tr>
<td>Interconnection and roaming costs</td>
<td>35%</td>
<td>20%</td>
<td>18%</td>
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</table>
Almost 60% of the total amount is for the CSC and MGW elements of IMS, while the installation of IMS is 20%.

The major contributors are the Marketing and sales (33%) and Network (26%).
Integrated case (OPEX)

The operator will actually reduce its OPEX compared to the non-FMC situation (negative values).

Delta OPEX = New (FMC) OPEX - Old OPEX
Financial Results

- Figure shows the differences between FMC and not FMC cases (results are clearly positive in relative terms)

- Increased OPEX the first years but OPEX savings near 700 M€ in 2014 (almost 7% of the total yearly OPEX of the operator)

- Slight revenue degradation because of price reductions in the bundles provided

- If not FMC loss in his market share that will decrease revenues and cash balance

**Delta Revenues** = New Number of FMC subscribers * (New ARPU – Old ARPU)

**Delta OPEX** = New OPEX – Old OPEX

**Investments** = Investments IMS+ Investments Hotspots
Summary

- Each operator has to make decisions on this migration based on its existing characteristics. Therefore, there is no single convergence solution that fits all the players.
- An integrated operator will have stronger motivations for beginning the FMC than those operators only owning fixed or mobile networks.
- The new FMC services will be the mean to keep the current market shares and even increase them in order to maintain the revenues.
- In the FMC case the operator faces increased OPEX the first years but achieves significant savings in the last years of the study period.
- If the operator does not invest in FMC it will eventually start experiencing a loss in his market share that will decrease its revenues and cash balance.
- An Integrated FMC operator can keep the customer base, and almost keep the revenues, but save in the long run in OPEX, and thus make a reasonable business case.
Time for Questions & Answers

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