# ECONOMICS OF TRANSITION TO IMT-2000

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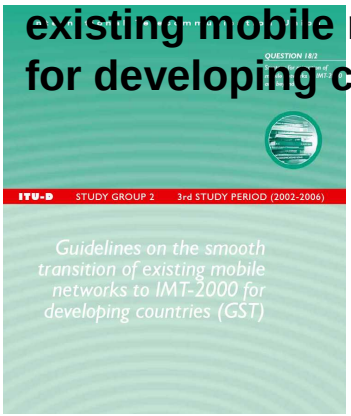
## Economics of the transition

- **Guidelines on smooth transition of the existing mobile networks to IMT 2000 for developing countries -GST**




www.itu.int/imt2000

# KEY STEPS

- A key step in the process of planning a transition path toward IMT-2000 network deployment is the **economic evaluation of the revenues** expected from the investments over the economic life of the system, including the spectrum license acquisition costs – where appropriate.
- This evaluation is based on the **cost of the possible options** and also on the **assumptions about the evolution of demand and service** penetration as well as **tariff trends and policies**.

- A key metric in the evaluation is the **NPV (Net Present Value)** understood as the net present value of the network, i.e. cumulative discounted cash flow generated to date.
- On a less formal level, this metric is **indication of the profitability of a business**, as appreciated at Year 0, over a span of N years – N ranging from 1 to the economic life of the system.



# PARAMETARS

- Various parameters characterizing the IMT-2000 network deployment enable economic evaluation, which includes:

  – **Business plan and analysis**
  – **Market analysis and trends**
  – **Costs of Transition**

# ECONOMIC EVALUATION

- Business plan is a key step and operators should consider it **choosing the transition path** that yields the most economic value, including revenues, spectrum license acquisition costs, where appropriate, capital expenditures (CAPEX), and operating expenditures (OPEX) over the economic life of the system.
- Economic evaluation may have to be based on assumptions about the **evolution of demand and service penetration as well as tariff trends and policies.**
- The implementation of a **financial model** is normally conceived so that further information on specific aspects may be obtained by increasing the level of detail in the description of the network infrastructure and/or network components.



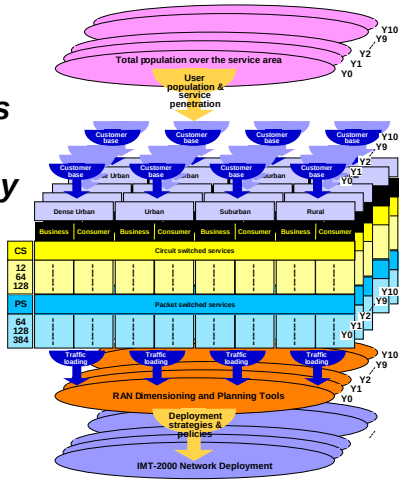
# Economics of Mobile Network Deployment

- ***The "business plan" methodology***
  - ***Estimation of the year traffic demand***
    - ***Estimation of potential user population***
    - ***Estimation of service penetration***
    - ***Estimation of activity factor (per service type and class)***
    - ***Estimation of OPEX***
  - ***RAN planning***
  - ***Core Network planning***
  - ***Assumption on revenue structure for offered services***
  - ***Computation of NPV***
  - ***The role of the proper tool***

***Net Present Value (NPV):*** ***Cumulative discounted cash-flow generated to date, or less formally: The profitability of a business, as appreciated a Year 0, over a span of N years - N ranging from 1 to the economic life of the system***

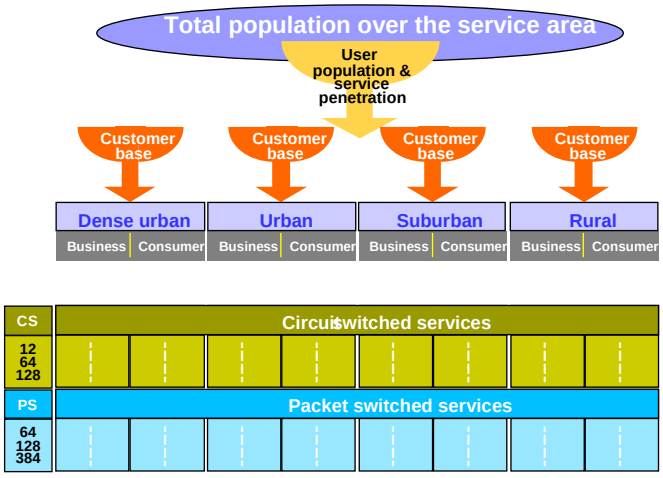
# Economics of IMT-2000 Deployment

***The "business plan" methodology***

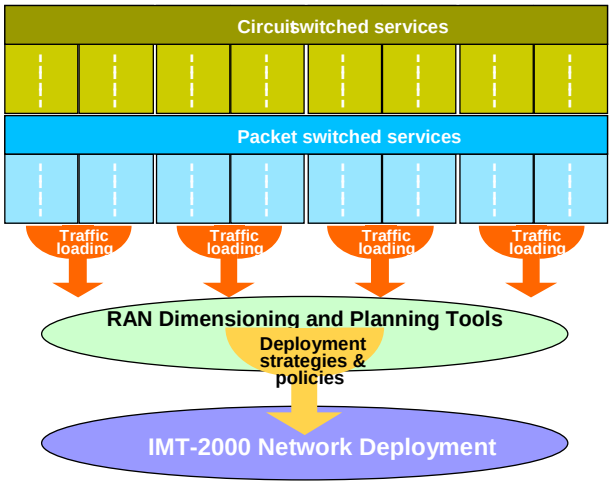





# Economics of Mobile Network Deployment



# Economics of Mobile Network Deployment



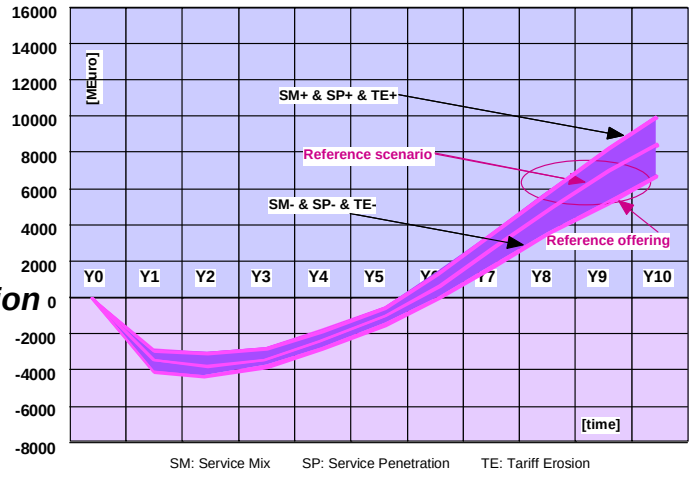



# Economics of IMT-2000 Deployment –Share of Investments

| | Year 0 | Year 3 | Year 4 to Year 10 |
|---|---|---|---|
| | Rel-99 | from Rel-99 to Rel-5 | Capacity increases |
| ***RAN*** | | | |
| - Node Bs | 55% | 55% | 60% |
| - RNCs | 30% | 35% | 30% |
| - UTRAN transport infrastructure | 15% | 10% | 10% |
| ***Core Network*** | | | |
| - MSCs & MSC servers | 50% | 0% | 0% |
| - SGSNs & GGSNs | 35% | 60% | 65% |
| - MGWs | 0% | 10% | 10% |
| - CSCFs, MGCFs, T-SGWs, MRFs | 0% | 20% | 15% |
| - Core network transport infrastructure | 15% | 10% | 10% |
| ***Service Market Segment*** | **Year 0** | **Year 3** | **Year 4 to Year 10** |
| - Business | 65% | 60% | 50% |
| - Consumer | 35% | 40% | 50% |
| ***Tariffs*** | 3% yearly reduction in over the whole economic life cycle | | |

# Economics of Mobile Network Deployment

- **NPV analysis**
  - Traffic demand
  - Service penetration
  - Tariff erosion
  - Service offering




SM: Service Mix SP: Service Penetration TE: Tariff Erosion



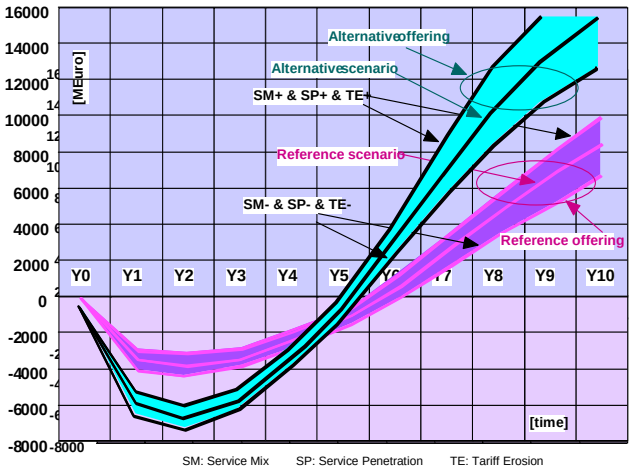
## *Economics of Mobile Network Deployment* – *Sensitivity Analysis* – Alternative scenario

| | | | |
|---|---|---|---|
| **Deviation from assumed service mix** | SM+ ⇒ Y3: +10%, Y10: +25%<br>SM- ⇒ Y3: -10%, Y10: -25% | | |
| **Deviation from assumed service penetration** | SP+ ⇒ Y3: +10%, Y10: +25%<br>SM- ⇒ Y3: -10%, Y10: -25% | | |
| **Yearly deviation from tariff erosion** | TE+ ⇒ +10%<br>TE- ⇒ -10% | | |
| | **Year 0** | **Year 3** | **Year 4 to Year 10** |
| ***Service Market Segment***<br>- Business<br>- Consumer | <br>65%<br>35% | <br>60%<br>40% | <br>50%<br>50% |

SM: Service Mix SP: Service Penetration TE: Tariff Erosion

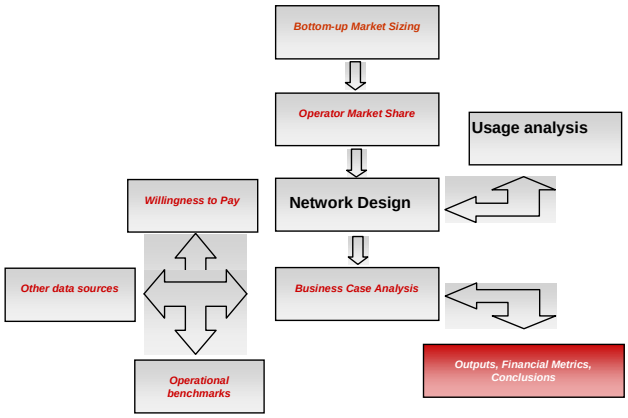
# *Economics of Mobile Network Deployment*

- ***Sensitivity analysis***
  - ***Traffic demand***
  - ***Service penetration***
  - ***Tariff erosion***
  - ***Service offering***






# Structure of the Business Plan Model (more details in MTG)



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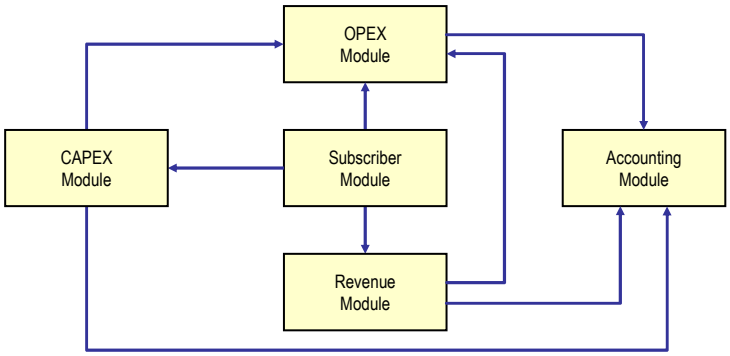




# СПАСИБО!!!