ITU-D Regional Development Forum for the Asia Pacific Region
NGN and Broadband, Opportunities and Challenges

NGN Business Planning

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Agenda

- Business Planning issues
- Business Planning in NGN

Issues of NGN Business Planning

- What cost for network evolution?
- What profitability may be expected?
- What timing per network segment migration?
- How to reduce CAPEX and OPEX?
- What impact of infrastructure sharing on business?
- What new services to introduce and in what sequence ?
- Others .....

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

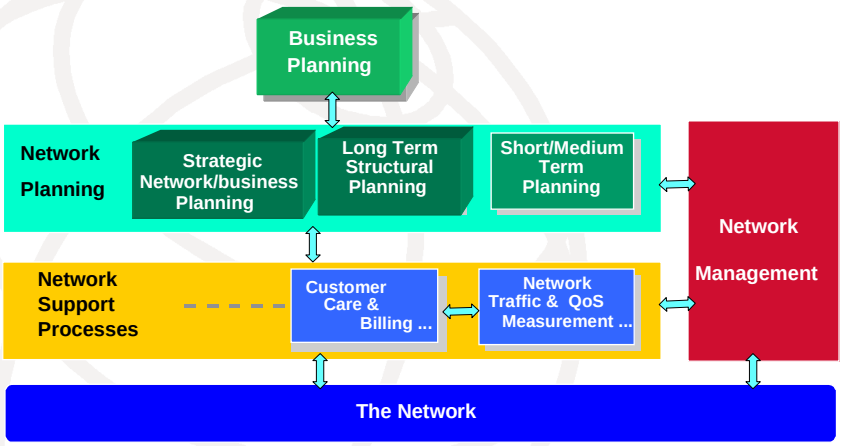
Definition of business plan

A Business Plan presents the calculation of the financial indicators that enable the managers to evaluate the financial performances of an enterprise in order to take decisions.

A Business Plan summarizes the results of the planning process:

- the **objectives to reach** (subscribers demand, sales)
- the description of all **activities requested** by the project;
- the **future revenues** expected from the project;
- the **planned expenses** (investment and operations);
- the accounting statements and the **financial indicators** characterizing the profitability of the project.

Overall Planning: Related Processes and interrelation



Types of business plans

Strategic Business Plan for evaluating a strategy:

- aid for making internal decisions for the whole company (strategic guidelines at the national level, all markets)

Tactical Business Plans for specific projects :

- aid for making internal decisions for a particular area, or a market segment: mobiles, IP, applications

Short term Business Plans for management control :

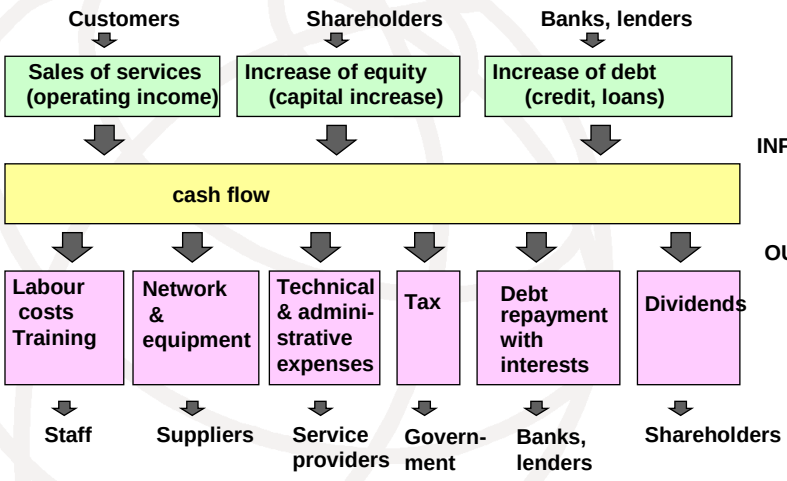
- aid for monitoring the implementation of projects
- preparation and follow-up of budgets,

Main financial indicators

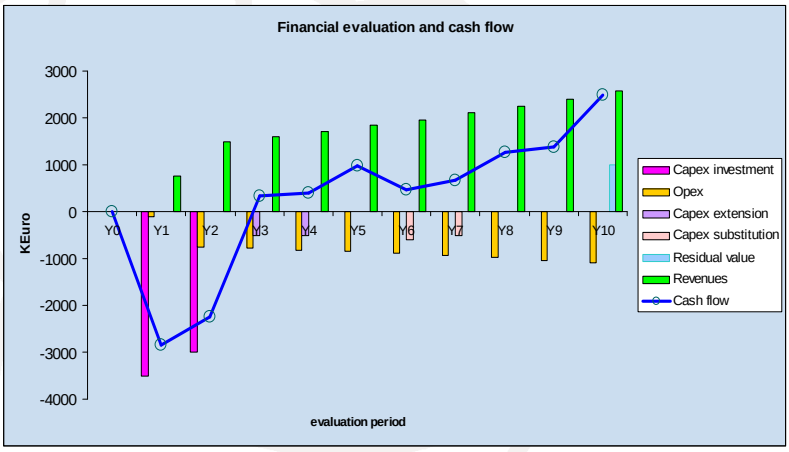
The most useful economical indicators are :

- Net present value (NPV)
- Internal rate of return (IRR)
- Discounted Payback period (DPP)
- Net cash flow (NCF)
- Discounted cash flow (DCF)
- Operating income
- Revenue per service/service class

INFLOWS and OUTFLOWS



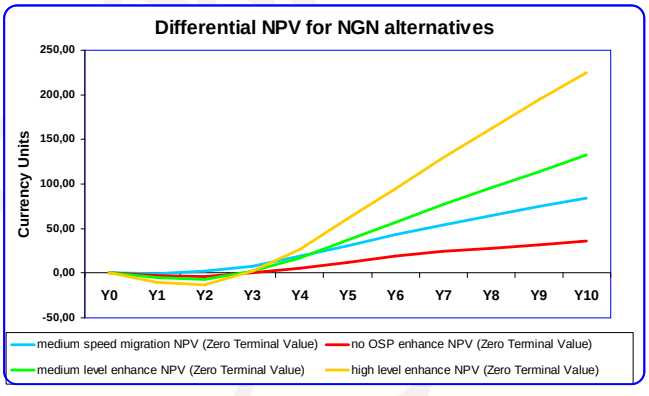
Cash-Flow and components over time



Net Present Value (NPV) as best decision making indicator

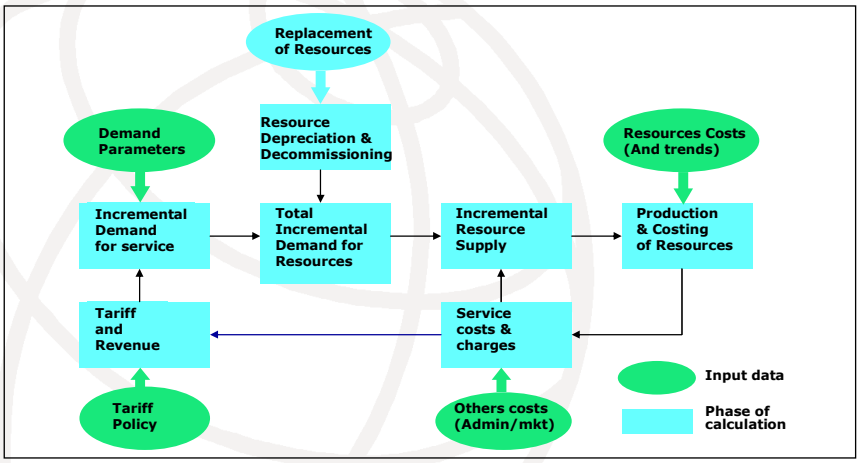
- **Net Present Value (NPV)**
- A global capital budgeting technique; found by subtracting a project's initial investment from the present value of its cash inflows discounted at a rate equal to the firm's cost of capital.
- NPV = present value of cash inflows - initial investment
- NPV = Σ [CF/(1 + k)t] – Initial Investment
- Two metrics:
  - NPV zero terminal value (when short term life cycles involved)
  - NPV at perpetuity rate (when long life cycles of equipment and projecting business at the end of evaluation period)

Net Present Value (NPV) as best decision making indicator



Example of differential NPV comparison at 4 deployment alternatives

Dynamic modelling of network activity flows for migration



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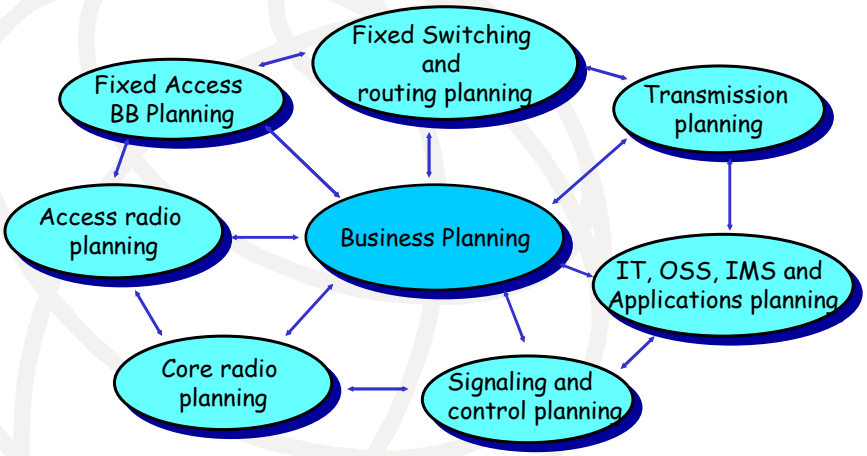
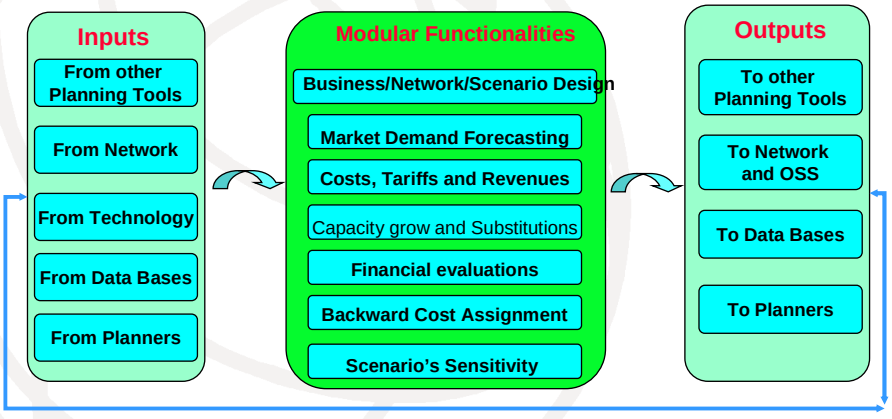
Network Planning domains

Planning domains to be addressed in NGN



Network Planning Tools Requirements:

Illustration of functional requirements for the business planning domain



Network Planning Tools Requirements:

- **Required functionality for Business tools in NGN**

  - 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 services and service bundles
  - 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.

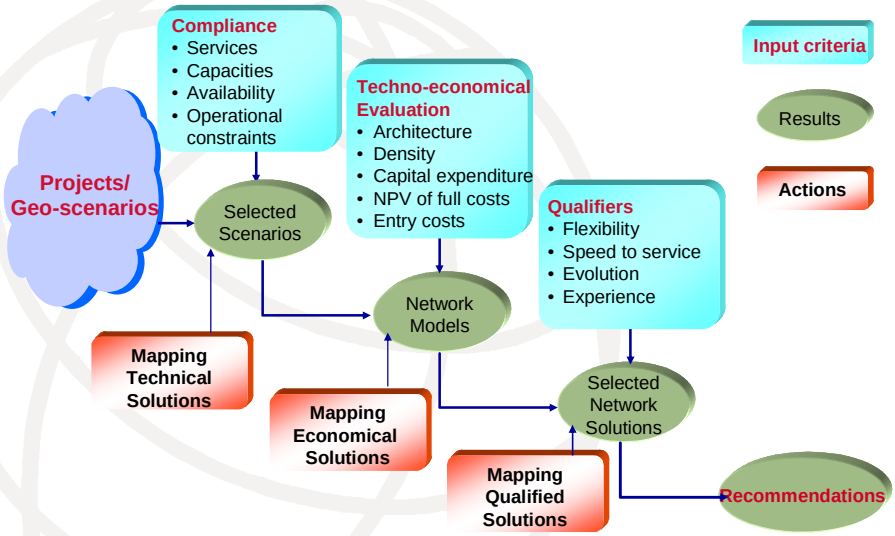
Business Planning Areas for NGN

- **Business evaluation for core migration rates to IP/MPLS mode**
- **Business evaluation for Local/Edge migration to IP/MPLS mode with new functionalities**
- **Business evaluation for Access migration at physical and functional levels**
- **Business evaluation for IP protocols migration: IPv4 to IPv6**
- **Business evaluation for Overall migration to full end to end NGN**

Business Planning Areas for NGN

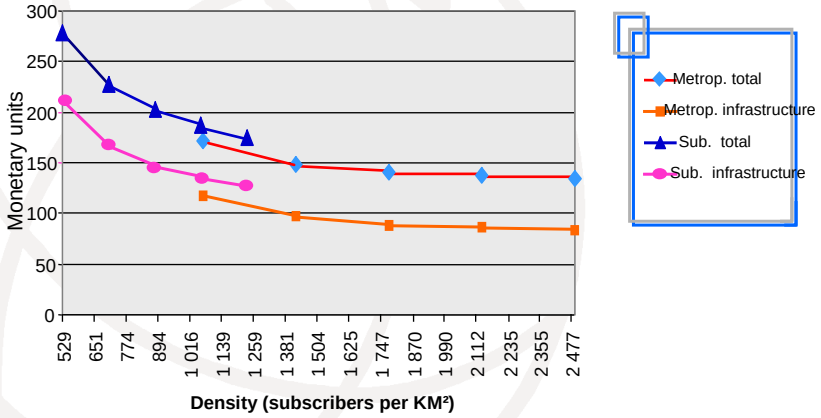
- Business impact of introducing new services and service bundles
- Wholesale versus retail business evaluations
- What technology to use per geo-scenario
- Infrastructure sharing business evaluation
- NM/ OSS/BSS migration from multiple platforms to integrated platform

Solution Mapping: Methodology

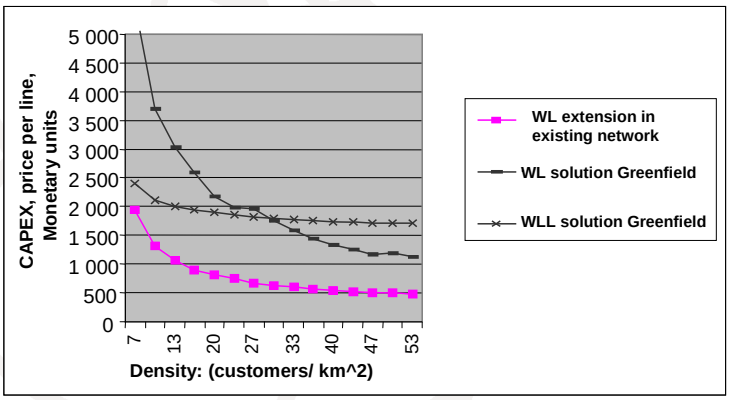


Solution Mapping: Investment sensitivity to density in WL Access

High density areas



Cost sensitivity to customer density per type of solution



- Clear cross-point between WL and WLL solutions as a density function
- Important impact of existing network reusability

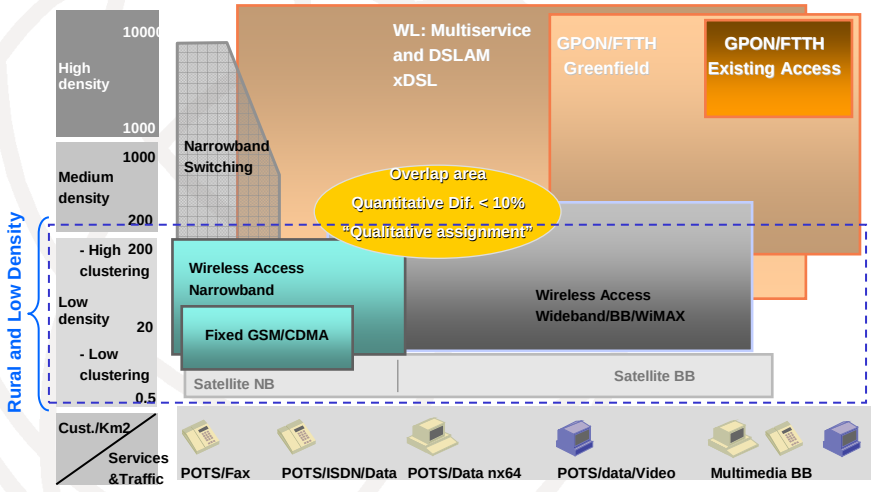
Frequent applicability mapping at access

Technology Solution	Scenario Type			
	LD Villages	LD resorts	Rural Clusters	Disperse settlements
WL-DLC/xDSL	✓✓	✓✓	✓ (if OSP available)	
WL-PLC			✓	✓
FTTx	✓ FTTC	✓✓ FTTP		
WiMax	✓✓	✓✓	✓	✓
IMT 2000-WLL			✓✓	✓
Satellite			✓	✓✓
Mobile	✓✓	✓✓	✓✓	✓

Most frequent applicability is illustrated per solution category

Solution mapping by NPV business evaluations

- Current positioning of access solutions as a function of service/density scenarios



Recommendations

- Identify key factors for business feasibility and strategy definition
- Develop team with capability to perform techno-economical evaluations to decide best alternative.
- Perform benchmarking and collaborate with external experts when needed
- Investment in techno-economic evaluations produce the highest returns on business