

# ITU-D Workshop on NGN and Regulation for India

## NGN Business Modeling and Planning

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# Agenda

- **Business Planning issues**
- **Business Planning in NGN**

# Issues of NGN Business Planning

- What cost for network evolution?
- What timing per network segment?
- How to reduce CAPEX and OPEX?
- Which technology per segment?
- What new services to introduce and in what sequence ?
- How to deal with high traffic growth by data applications ?
- 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

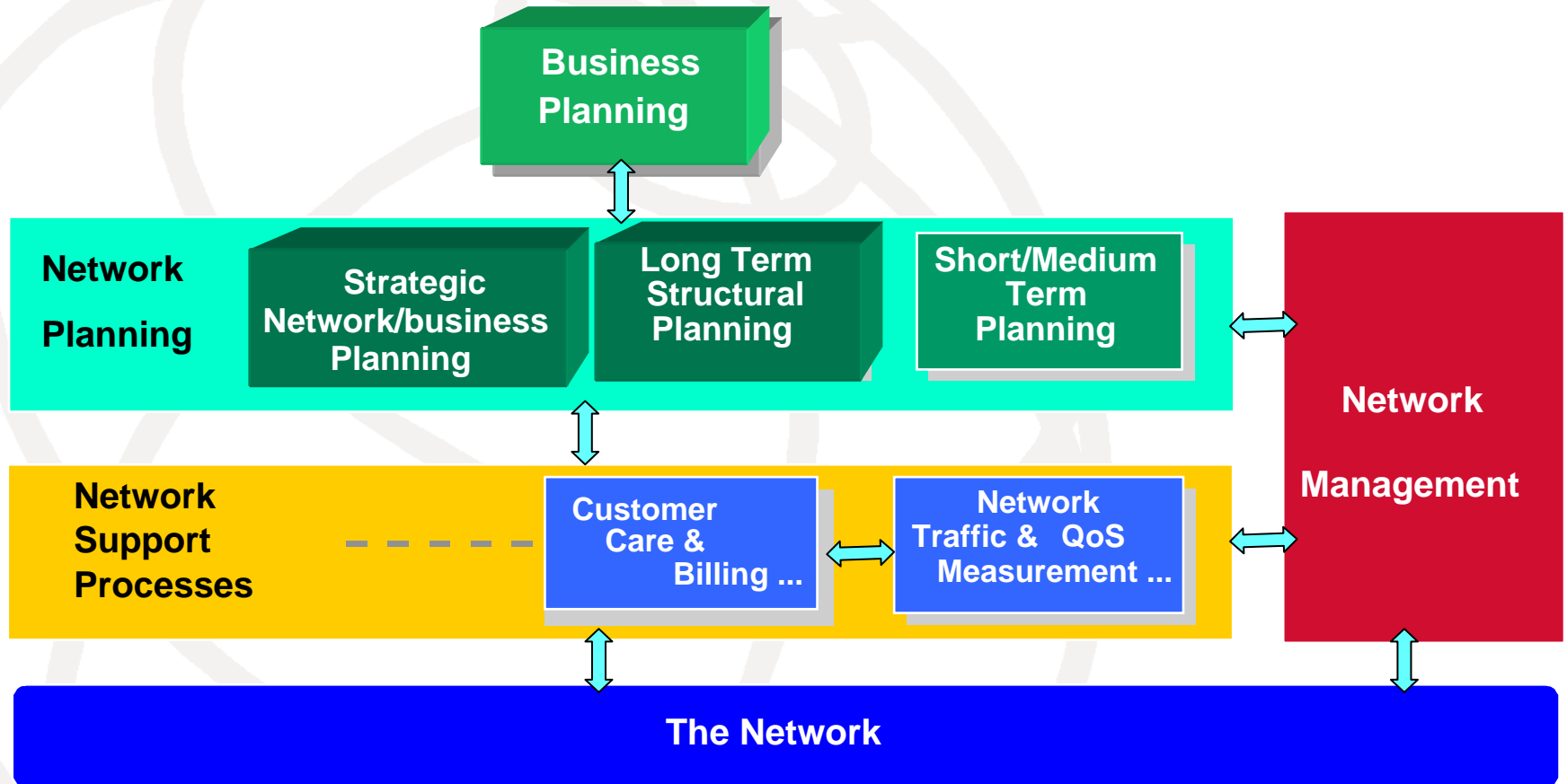
# Definition of business plan

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 :

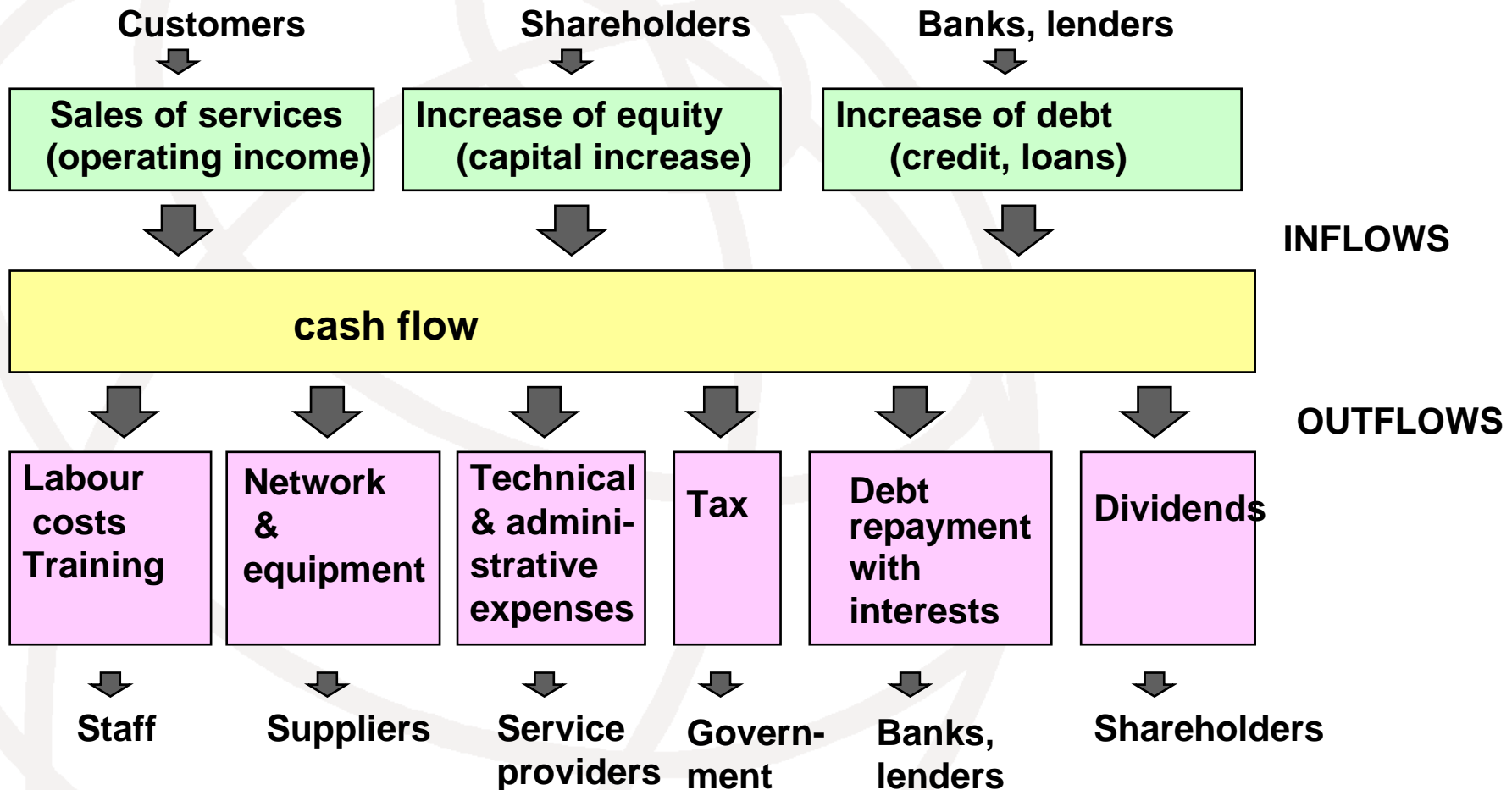
- aid for monitoring the implementation of projects
- preparation and follow-up of budgets,

# Main financial indicators

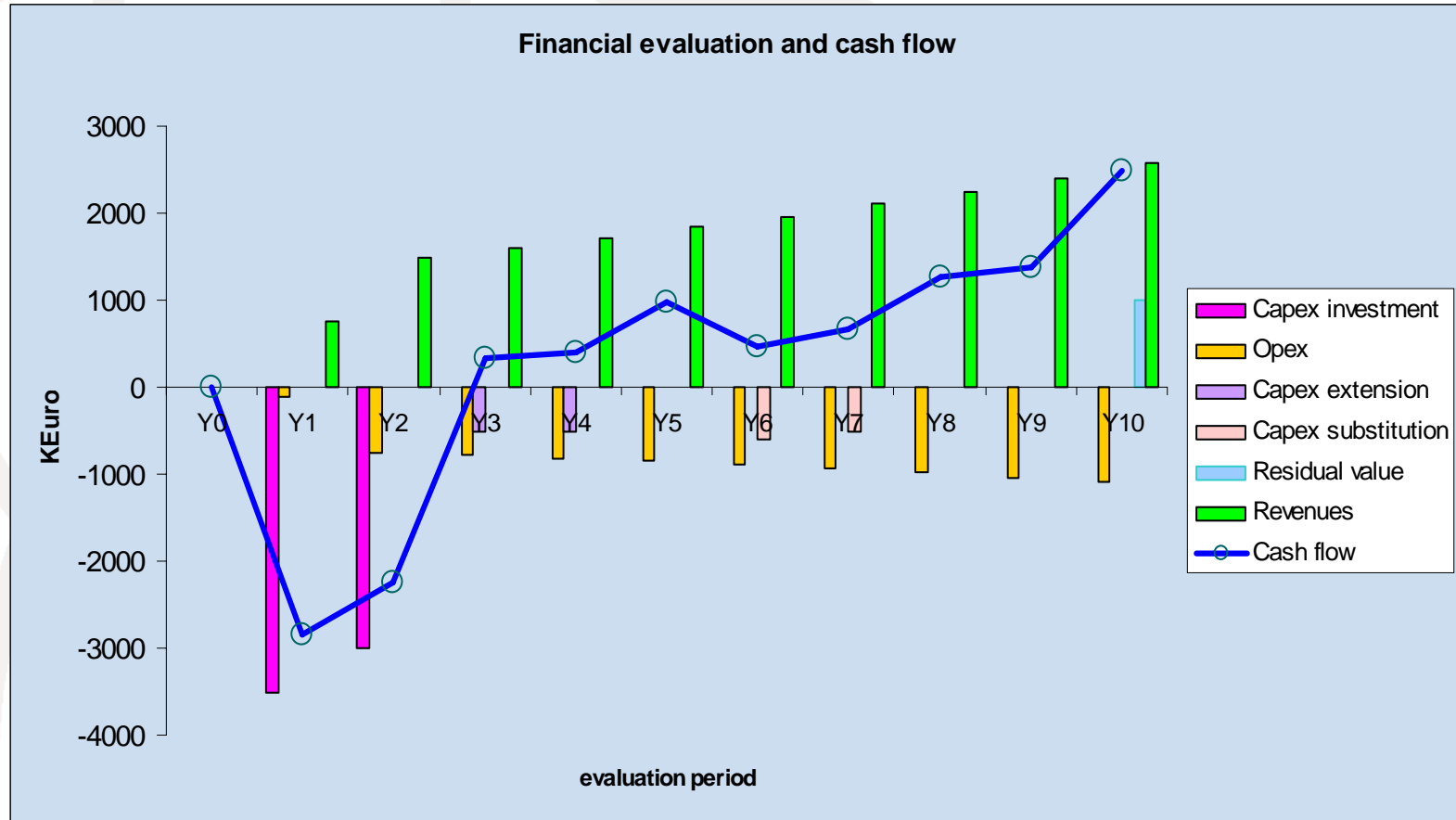
The most useful economical indicators are :

- 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



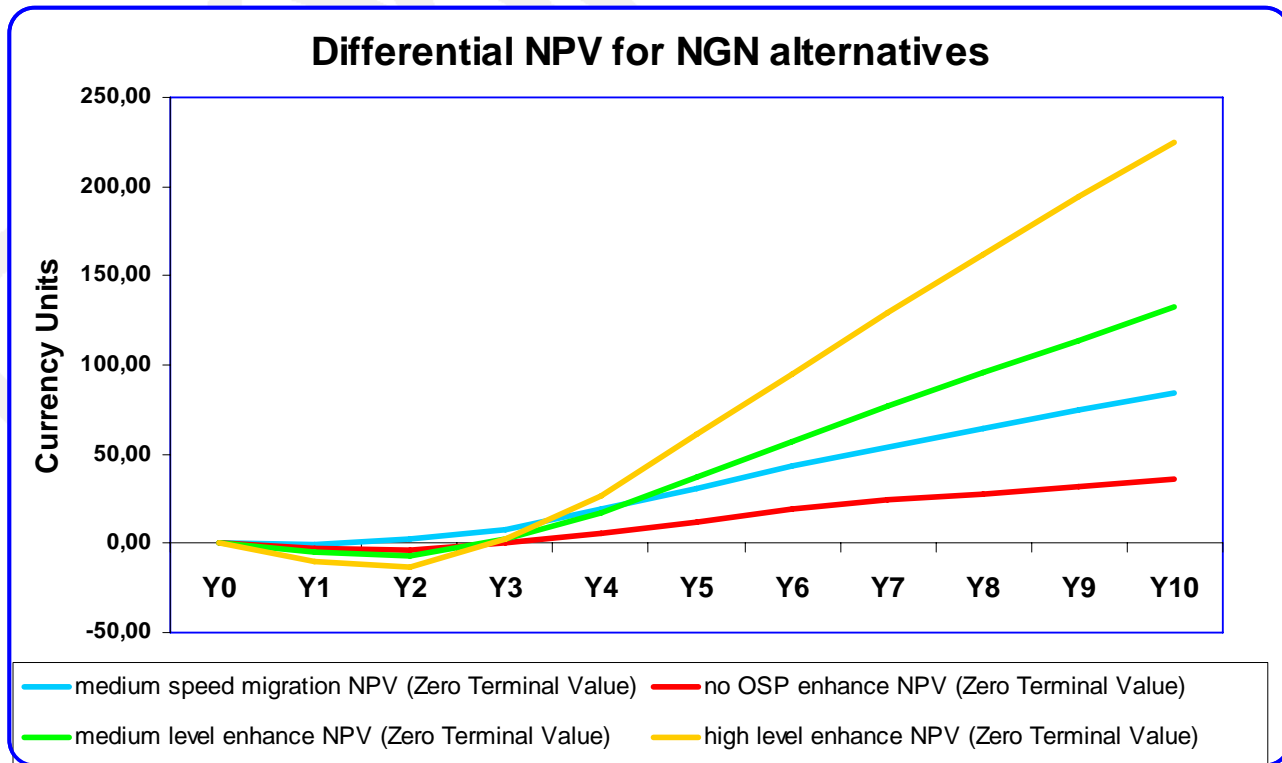
# Cash-Flow and components over time



# Net Present Value (NPV) as best decision making indicator

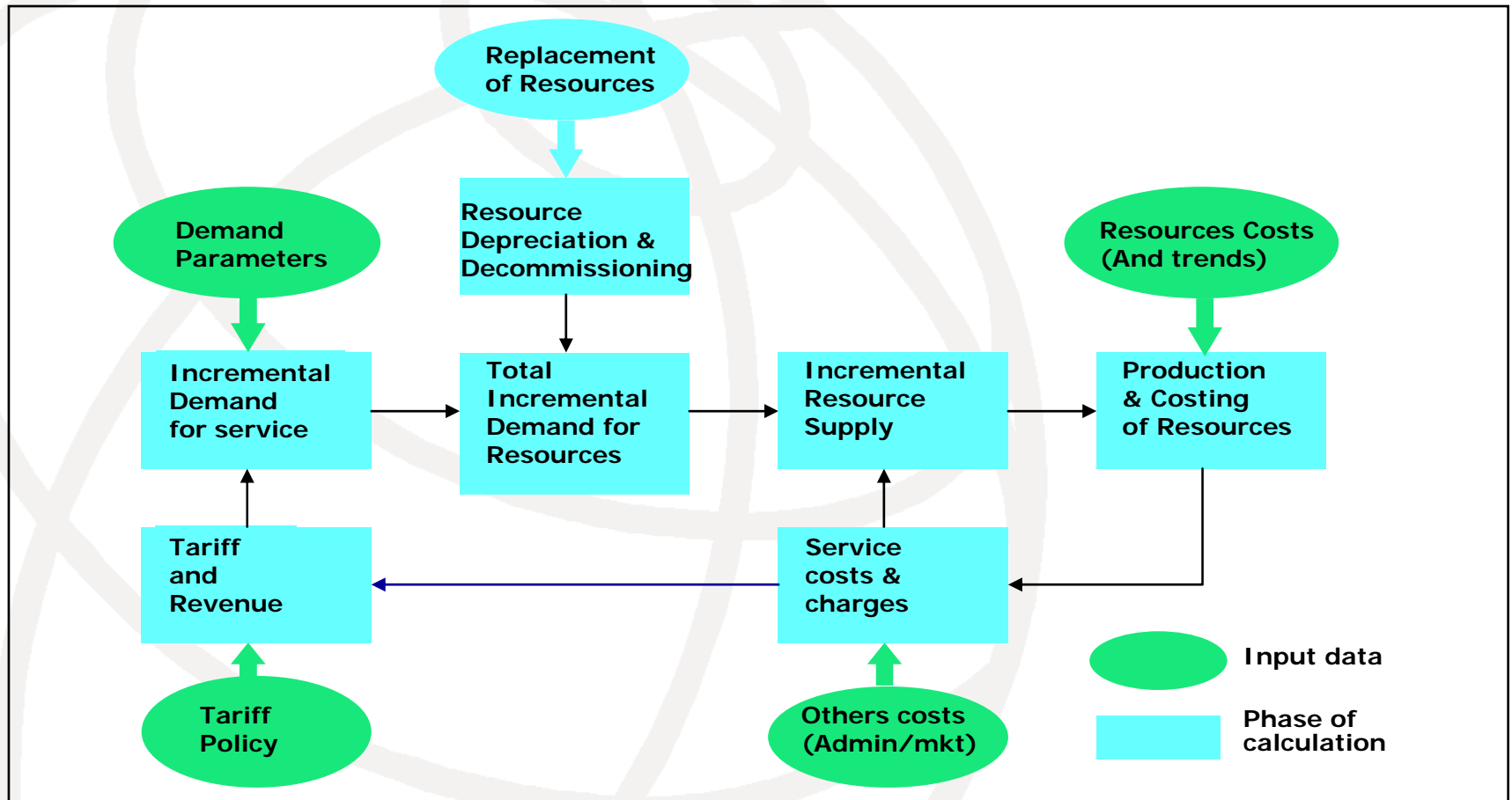
- **Net Present Value (NPV)**
- A global capital budgeting technique; found by subtracting a project's initial investment from the present value of its cash inflows discounted at a rate equal to the firm's cost of capital.
- $NPV = \text{present value of cash inflows} - \text{initial investment}$
- $NPV = \sum [CF/(1 + k)^t] - \text{Initial Investment}$
- 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

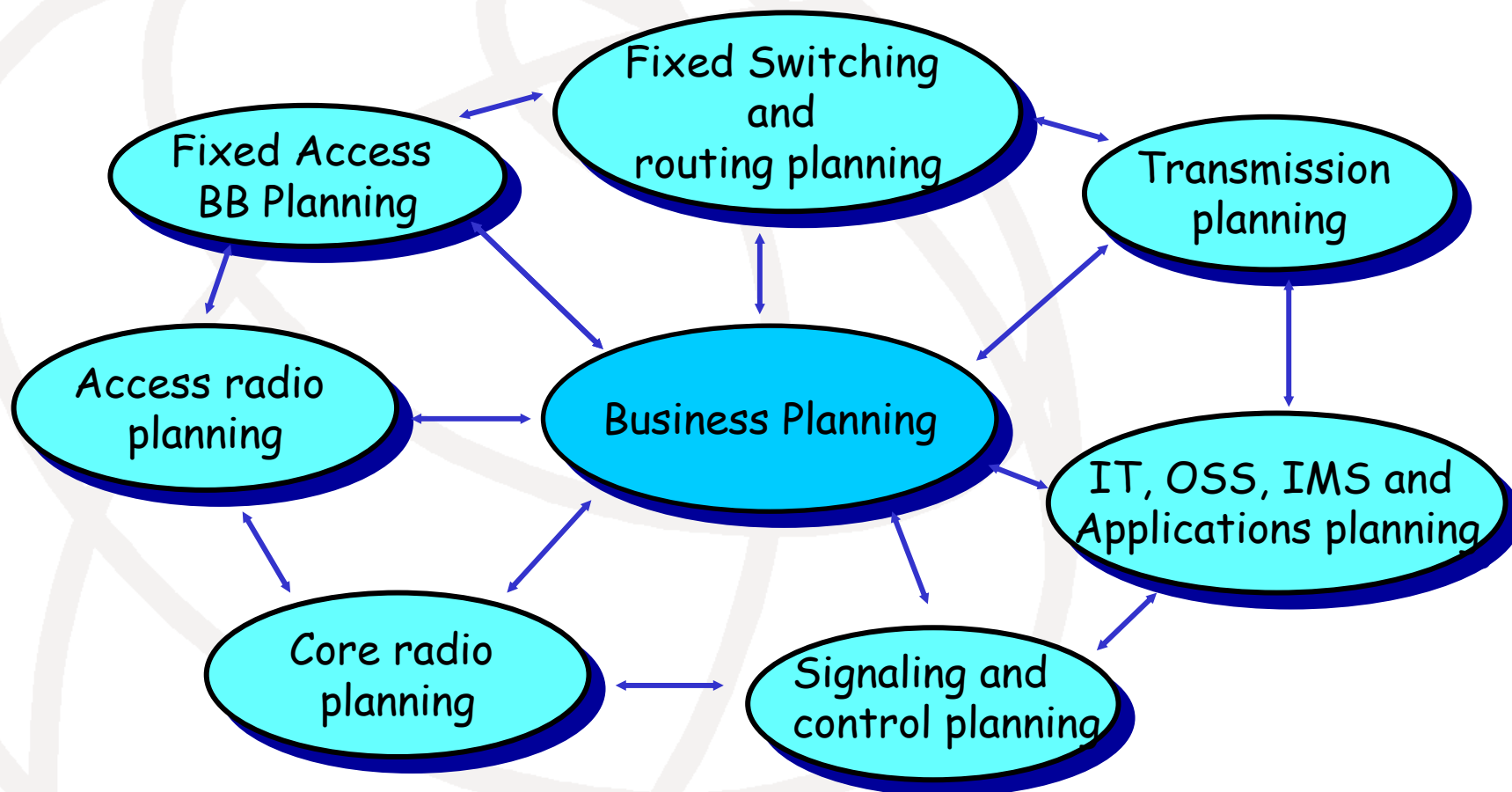


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# Network Planning domains

## Planning domains to be addressed in NGN



# Business Planning Areas for NGN

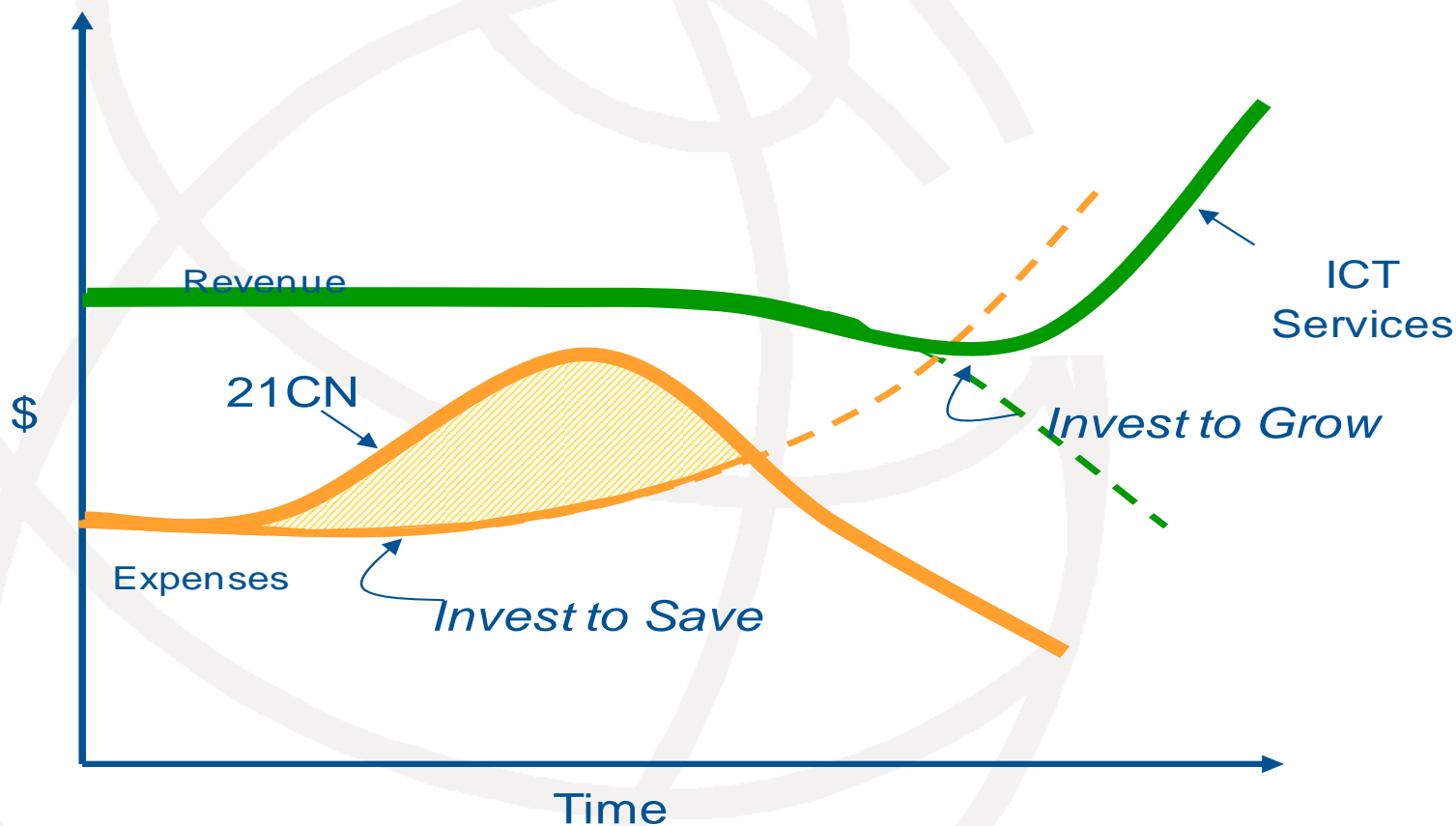
- Business evaluation for core migration rates to IP/MPLS mode
- Business evaluation for Local/Edge migration to IP/MPLS mode with new functionalities
- **Business evaluation for Access migration at physical and functional levels**
- Business evaluation for IP protocols migration: IPv4 to IPv6
- **Business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

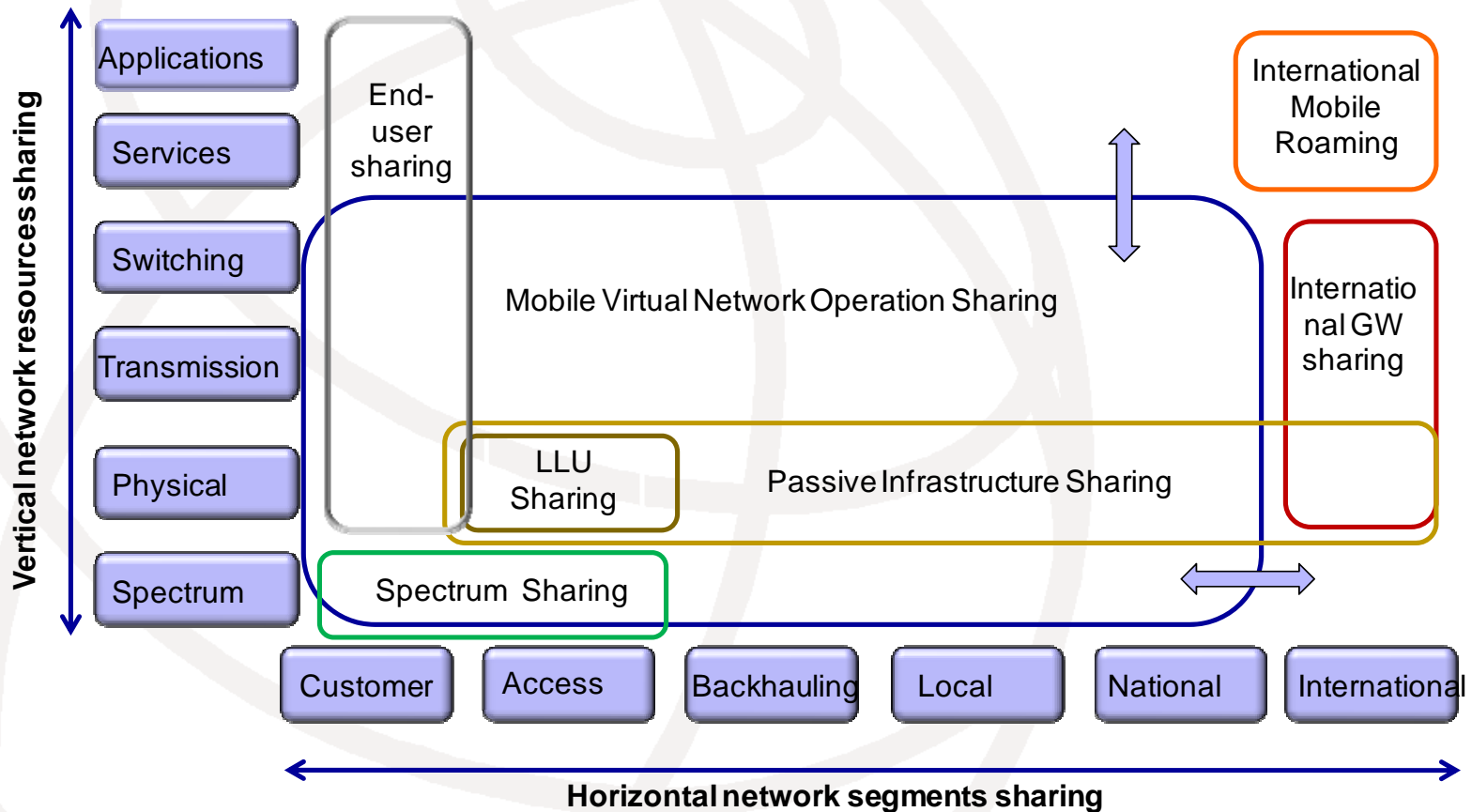
# Business Planning projections

Business plans by BT for overall investments and revenues with NGN 21 CN. This type of evaluation has to be performed by all service providers



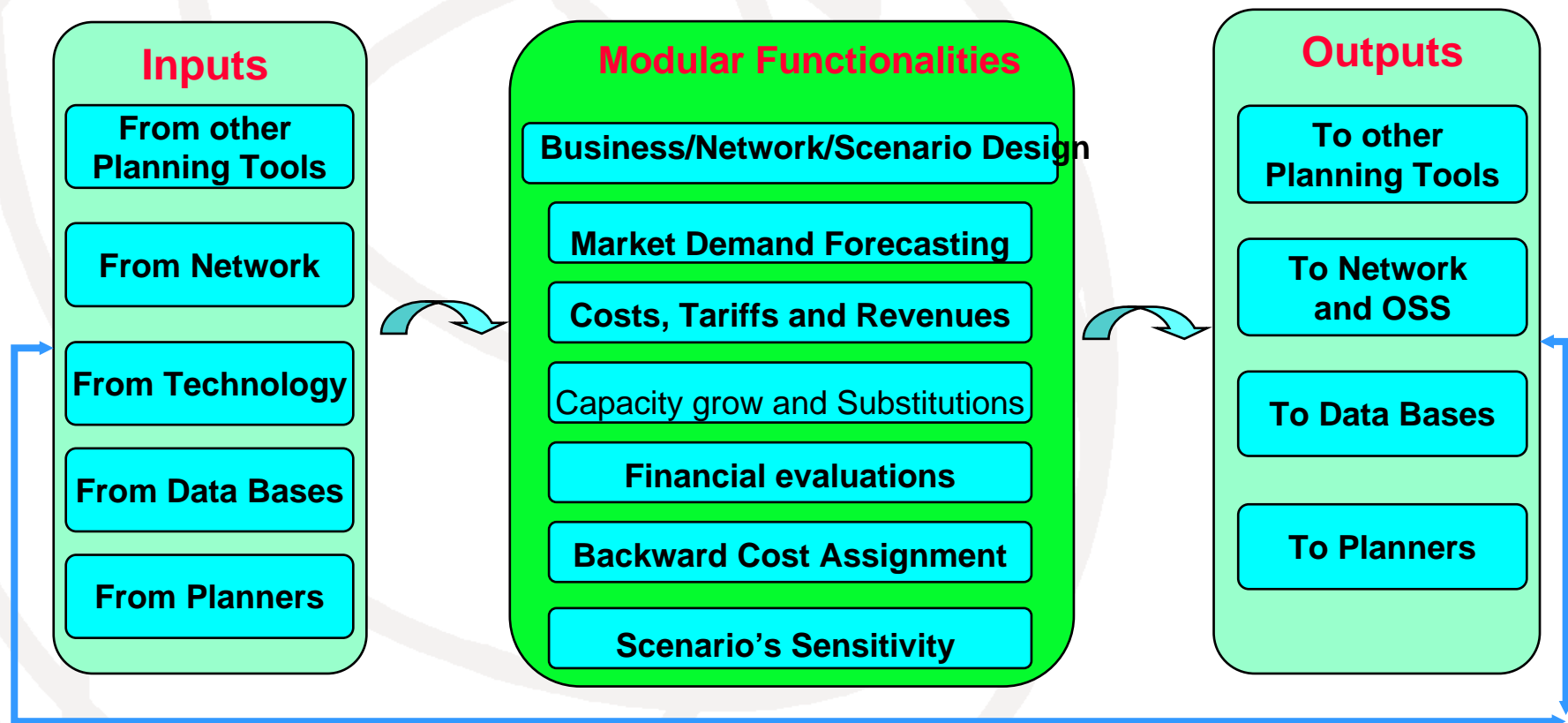
# Business Planning savings

## Infrastructure sharing dimensions in NGN that need business evaluations to reduce costs



# Network Planning Tools Requirements:

Illustration of functional requirements for the **business** planning domain

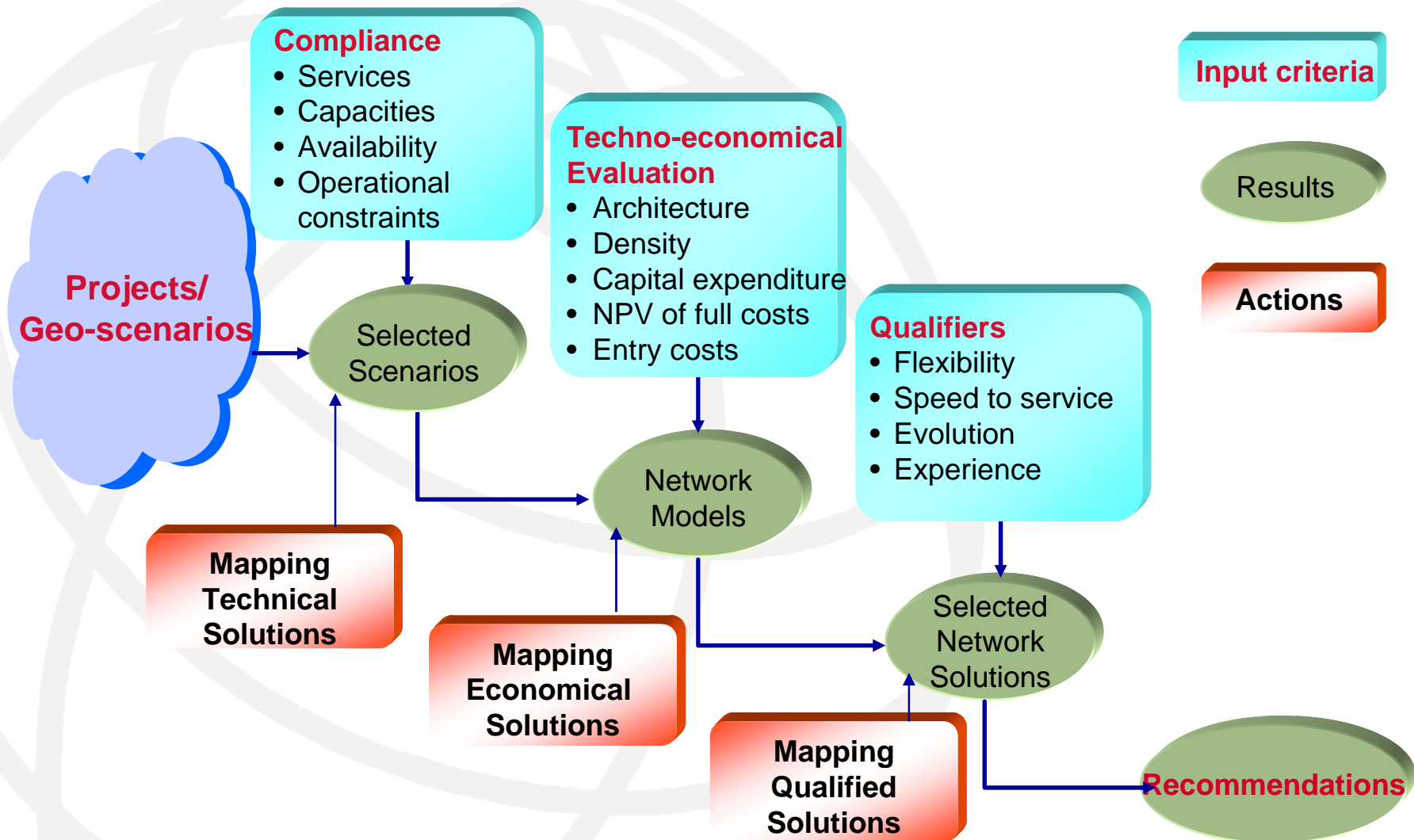


# Network Planning Tools Requirements:

## ■ Required functionality for Business tools in NGN

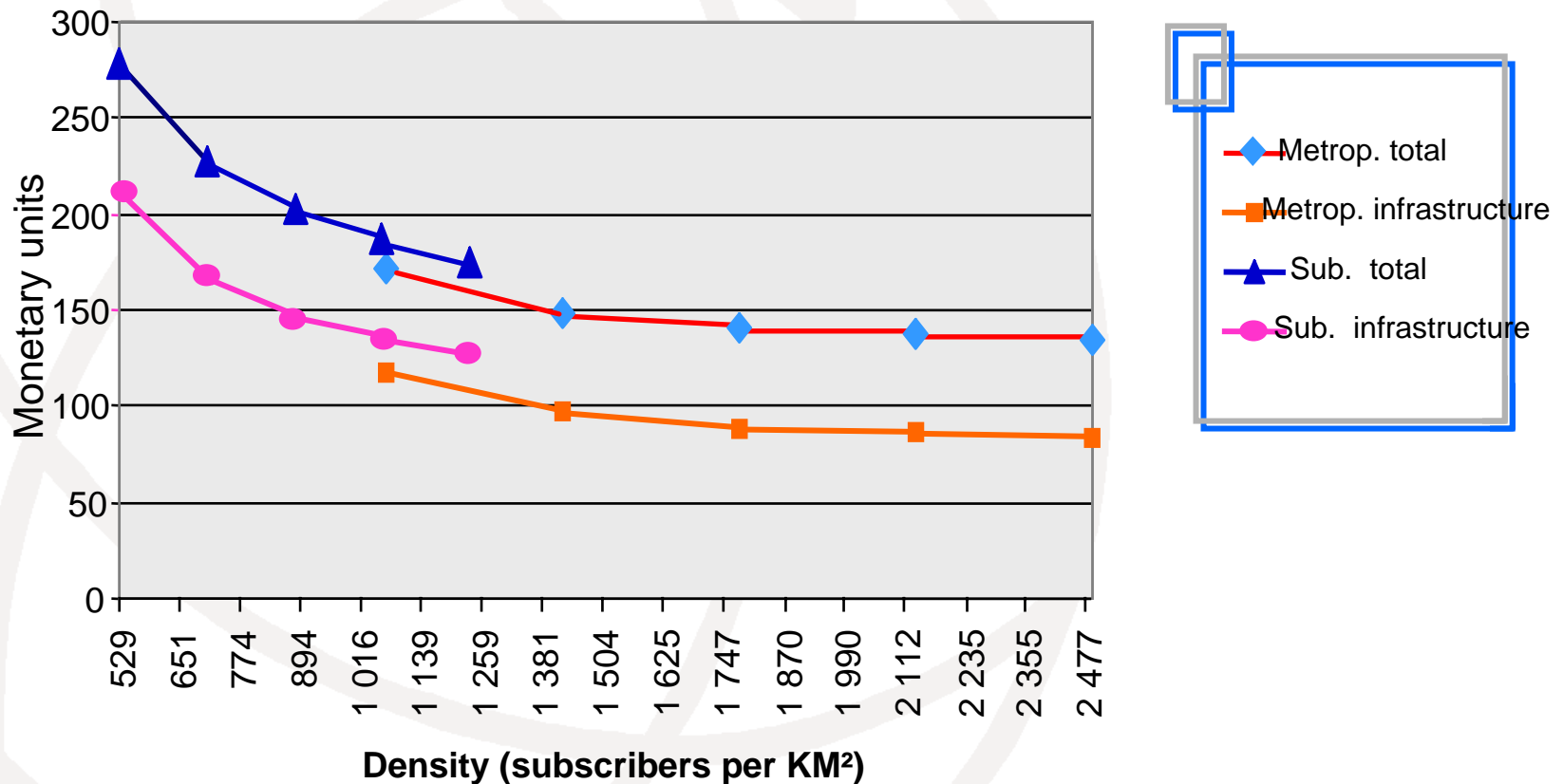
- Service Demand Projection
- Dynamic modeling for technology substitution and migration rates
- Dimensioning multiple flows (circuit and packet modes)
- Evaluation of network resources and associated investment (CAPEX)
- Evaluation of revenues for services and service bundles
- Modeling multiple resource 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.

# What technology to use per geo-scenario? : Best Solution Mapping

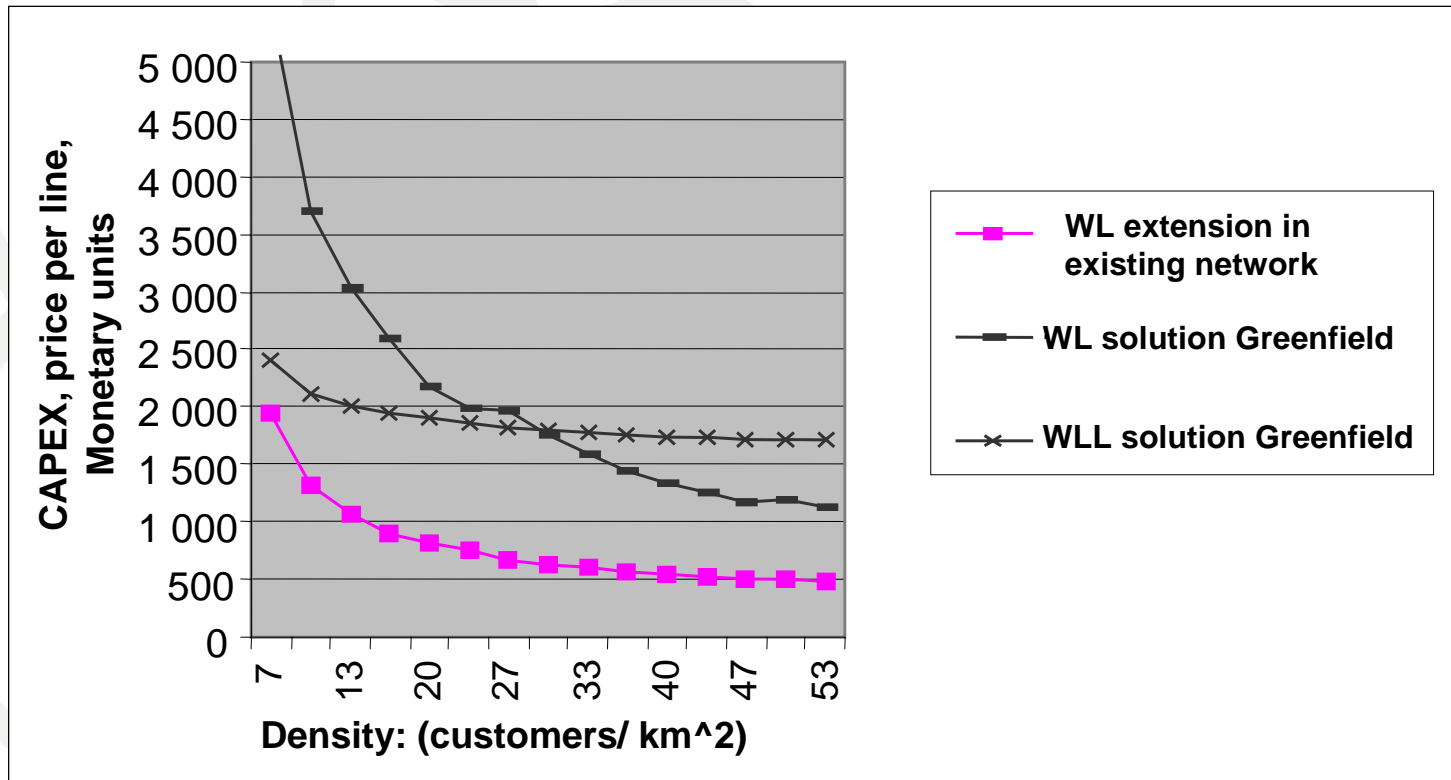


# Solution Mapping: Investment sensitivity to density in WL Access

## 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

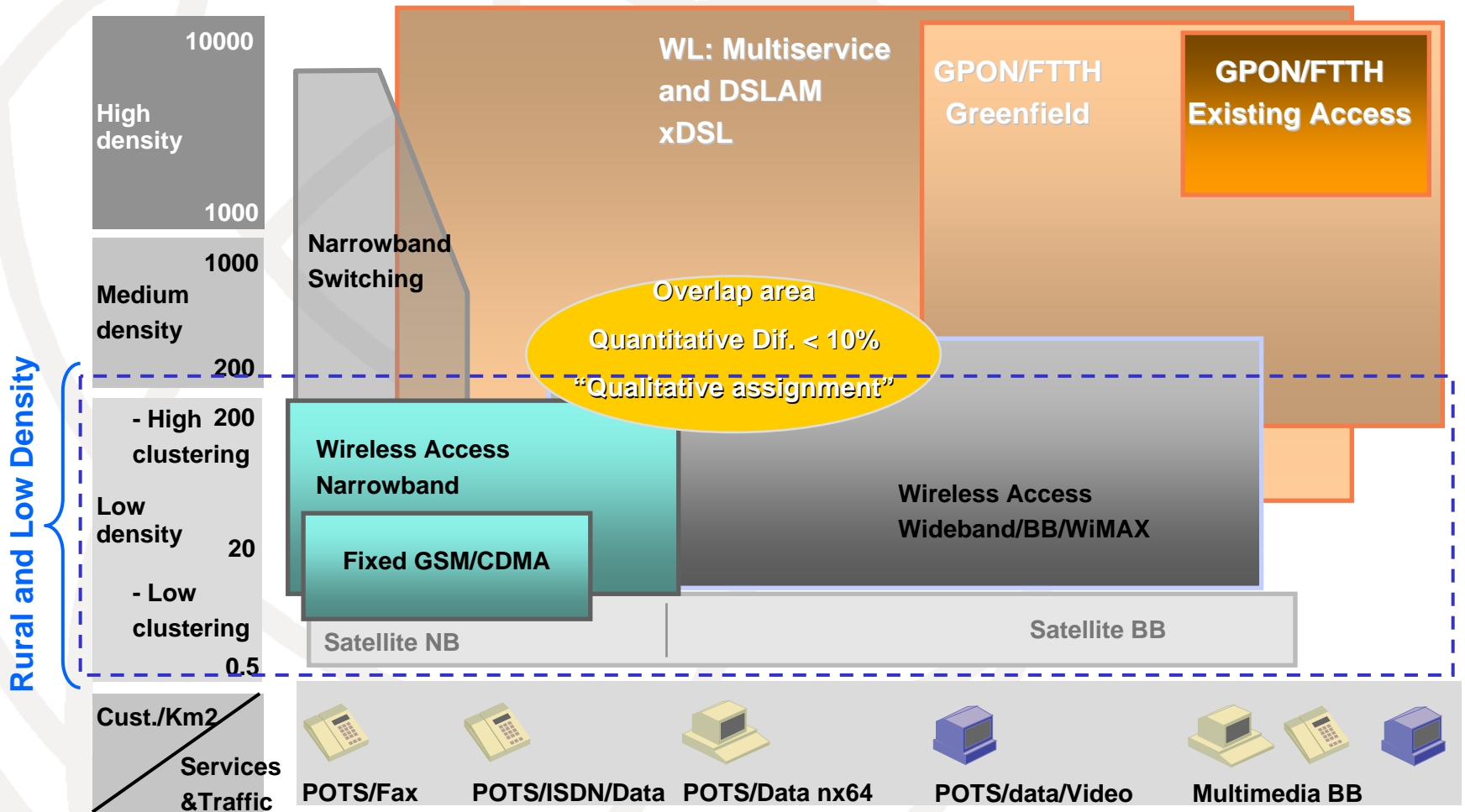
# Frequent applicability mapping at access

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

Most frequent applicability is illustrated per solution category

# Solution mapping by business evaluations

- Current positioning of access and FTTH solutions in 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. Collaborate with external experts when needed
- Investment in business evaluations **produce the higher returns** by a high multiplication factor