Costing Methodology and Costing the Access Network In Cyprus

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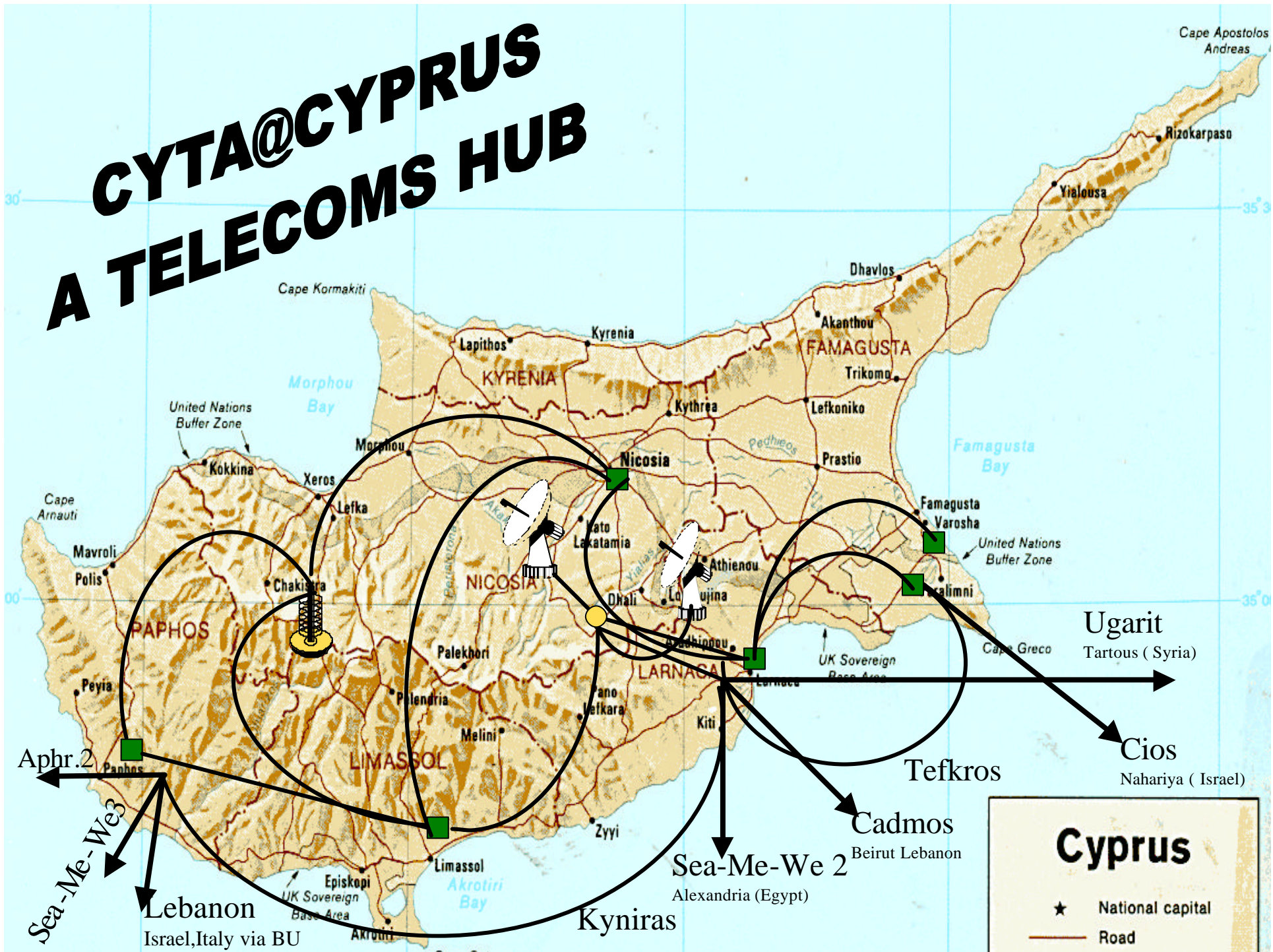
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CYTA@CYPRUS
A TELECOMS HUB

Cyprus

★ National capital
— Road

CYTA @ CYPRUS :
A Telecoms Hub

- ➢ Complete Portfolio of Market Driven Services
  - ➢ ISDN (N&B), ATM F.R., GSM, INTERNET, LEASED L.

- ➢ Penetration
  - ➢ Fixed Telephony   63%
  - ➢ Mobile Telephony 45%

- ➢ State of the Art Technology

  - ➢ Digitalization
    - ➢ Transmission Network 100%
    - ➢ Switching Network   100%
  - ➢ Exchanges supporting all user parts of the ITU T No 7 Signaling.
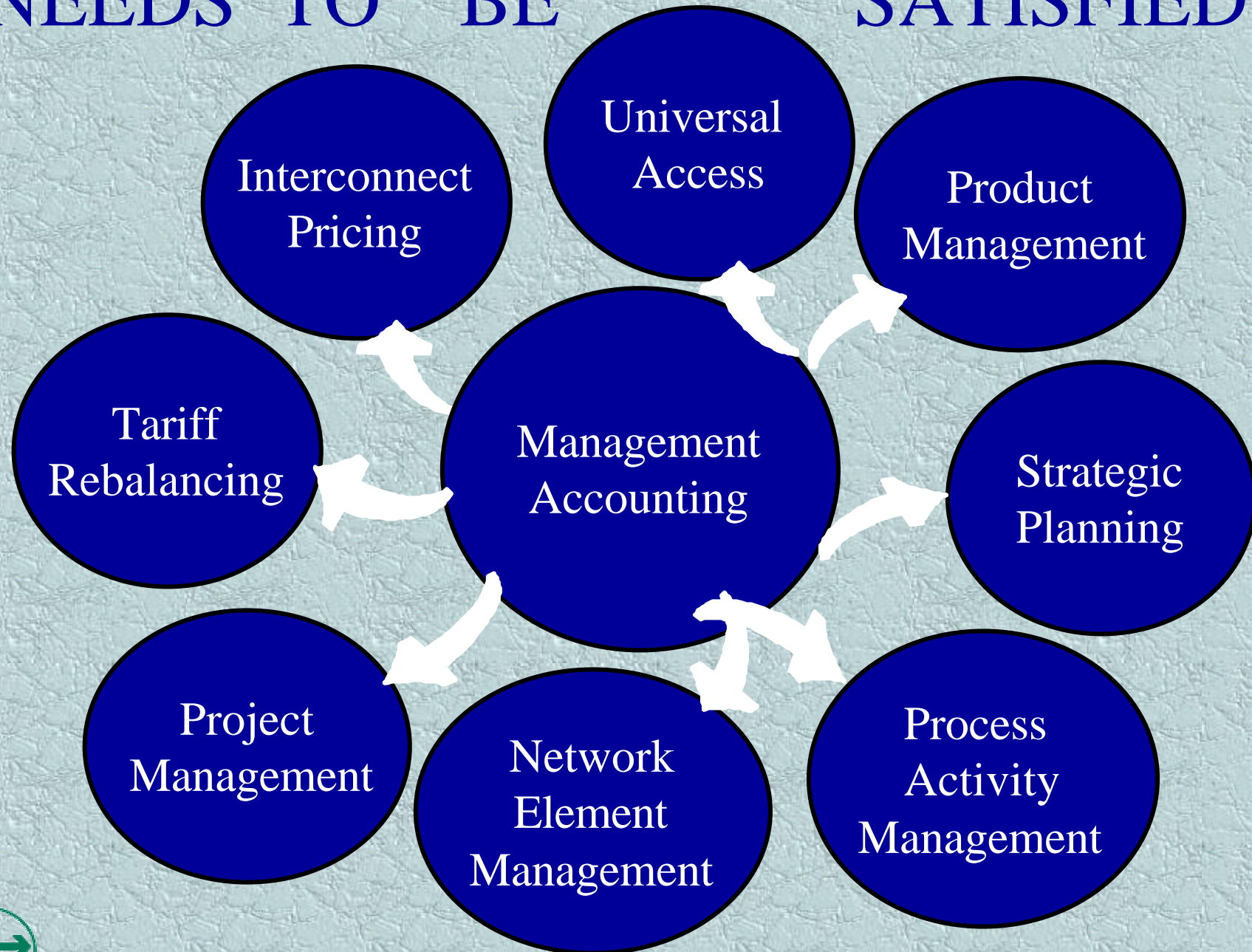 - ➢ SDH, ADSL

Talking about...

- ➢ Why bother with costing systems
- ➢ What is interesting about the CYTA costing system
- ➢ The CYTA costing methodology
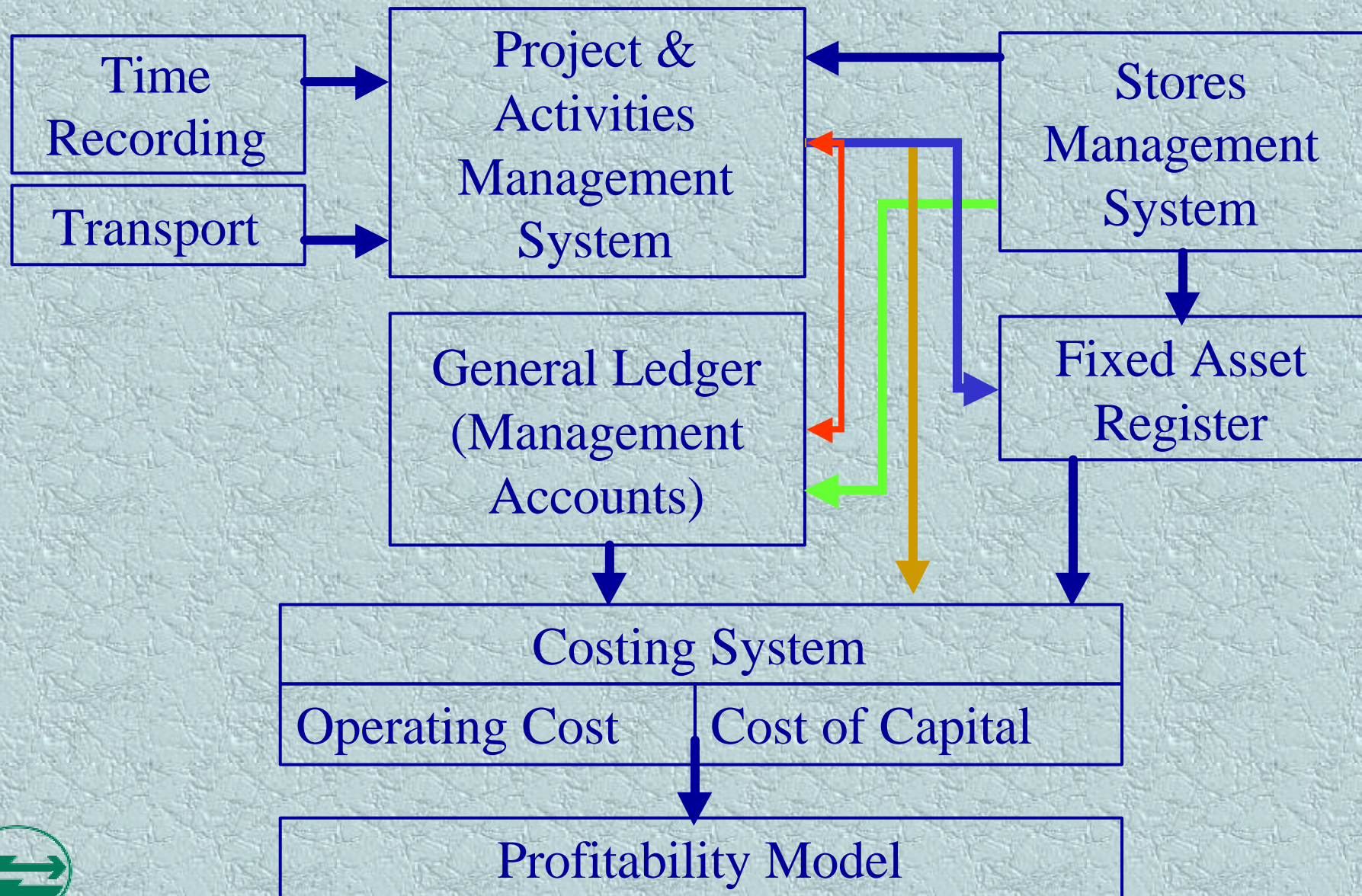- ➢ Access costs
- ➢ What next?

NEEDS TO BE SATISFIED

- Interconnect Pricing
- Universal Access
- Product Management
- Tariff Rebalancing
- Management Accounting
- Strategic Planning
- Project Management
- Network Element Management
- Process Activity Management

MANAGEMENT ACCOUNTING SYSTEMS

```
Time Recording  →  Project & Activities Management System  ←  Stores Management System

Transport  →

General Ledger (Management Accounts)        Fixed Asset Register

Costing System
Operating Cost | Cost of Capital

Profitability Model
```

What do people like
about the CYTA Costing System?

➢ It is a true Activity Based Costing system

➢ Allocations based on measurements

➢ Reconciling with the General Ledger   at any stage

➢ Full audit trail   ✓

➢ In-built internal controls

➢ Extremely flexible in what-if analysis   ☺

➢ User definable   👍

QUALITY OF RESULTS

♦ **GRANULARITY OF INFORMATION** FOR EACH PRODUCT

(INCLUDING INTERCONNECT PRODUCTS)

  ♦ MATERIAL, LABOUR, TRANSPORT, BOUGHT IN SERVICES, DEPRECIATION etc,

        BY

  ♦ TYPE OF COST POOL / ACTIVITY e.g. NETWORK ELEMENT, RELATED ACTIVITES, CUSTOMER FACING ACTIVITIES

♦ **AUDITABILITY AND AUDIT TRAIL**

  ♦ CAN TRACE EACH PRODUCT COST ELEMENT UPWARDS TO THE SOURCE e.g. PERSON'S TIME LOG

  ♦ CAN TRACE EACH COST ELEMENT DOWNWARDS TO THE PRODUCT

Account Balance Details

Change

Account

Code: MNMGSMB248

Name: Mobile Sys Tx GSM Latsia   Lookup Code:

Balances

Material	Labour	Transport	Excavations
1224.36	67.65	2.11	0.00

Reinstatement	Other	Depreciation	User Defined Value
0.00	0.00	0.00	0.00

Balance Type: |

Ok   Cancel

Costing System Flexibility

It can handle any combination of

- Actual Costs

- Budgeted Costs

- Simulated Costs

Along with any one of the following

- Actual allocation bases

- Budgeted allocation bases

- Simulated allocation bases

SYSTEM FUNCTIONALITY

→ USER-DEFINED

    → COST POOL TYPES

    → COST POOL HIERARCHY (groupings)

→ OUTPUTS

    → REPORTS

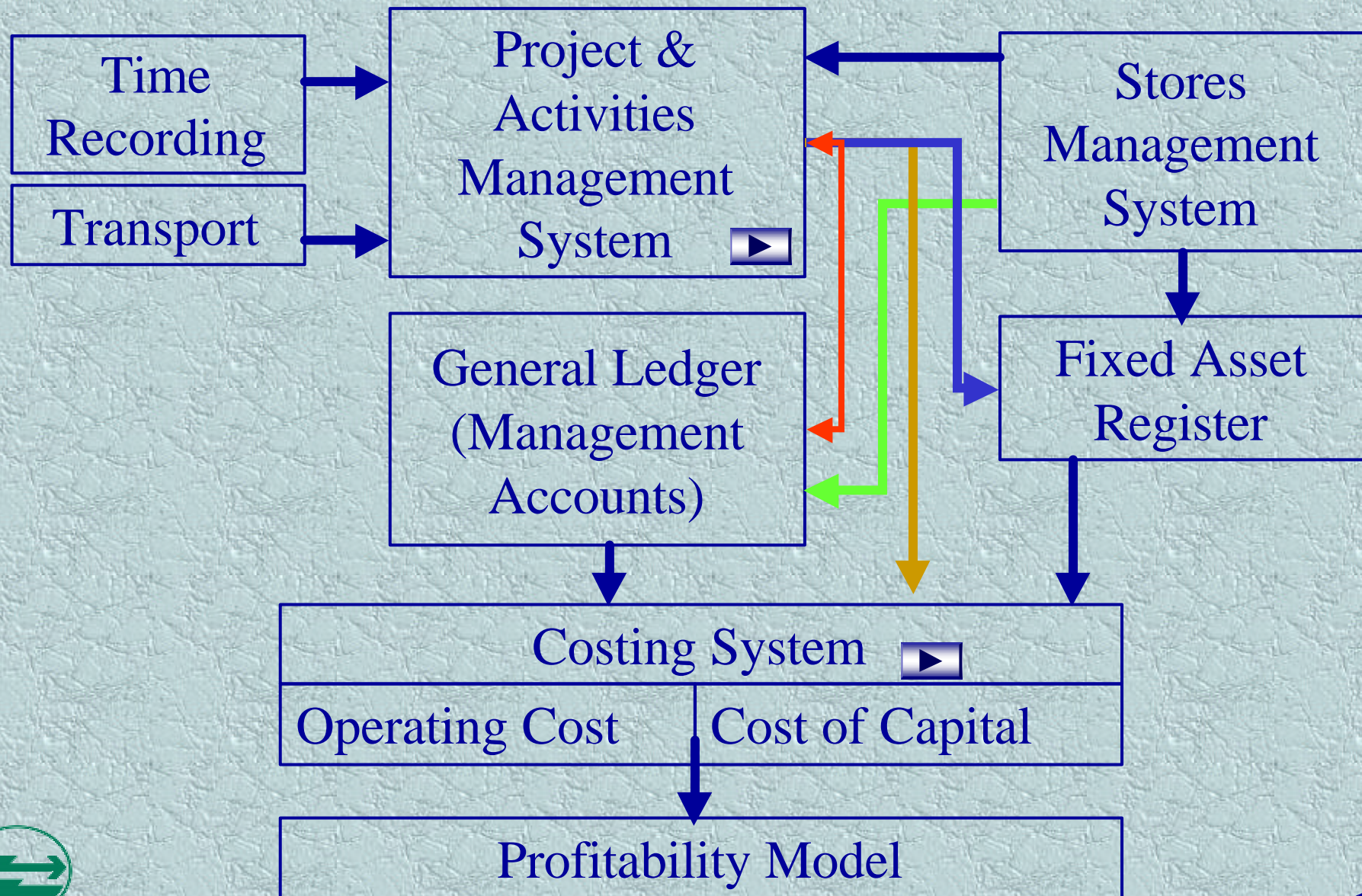   → QUERIES

    → EXPORTS

    → CHARTS

CURRENT OPERATION

Costing System / Profitability system

➢ Years 1996-2001: actual figures

➢ Years 2002 : budgeted figures

➢ **Simulated runs** for expected changes in market conditions (eg volumes of interconnection products, market shares, tariff rebalancing)

➢ **Simulated runs** for new products

MANAGEMENT ACCOUNTING SYSTEMS

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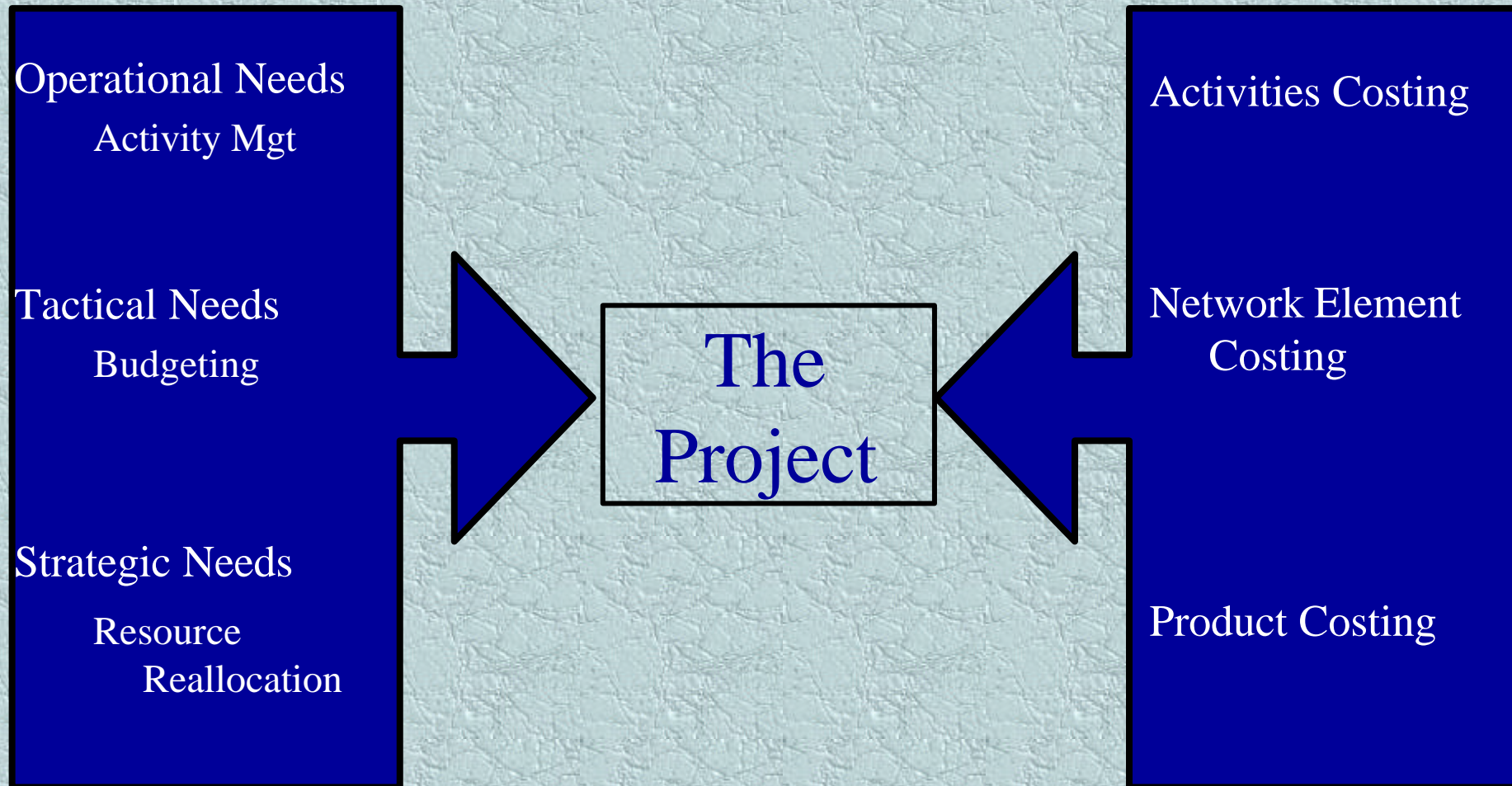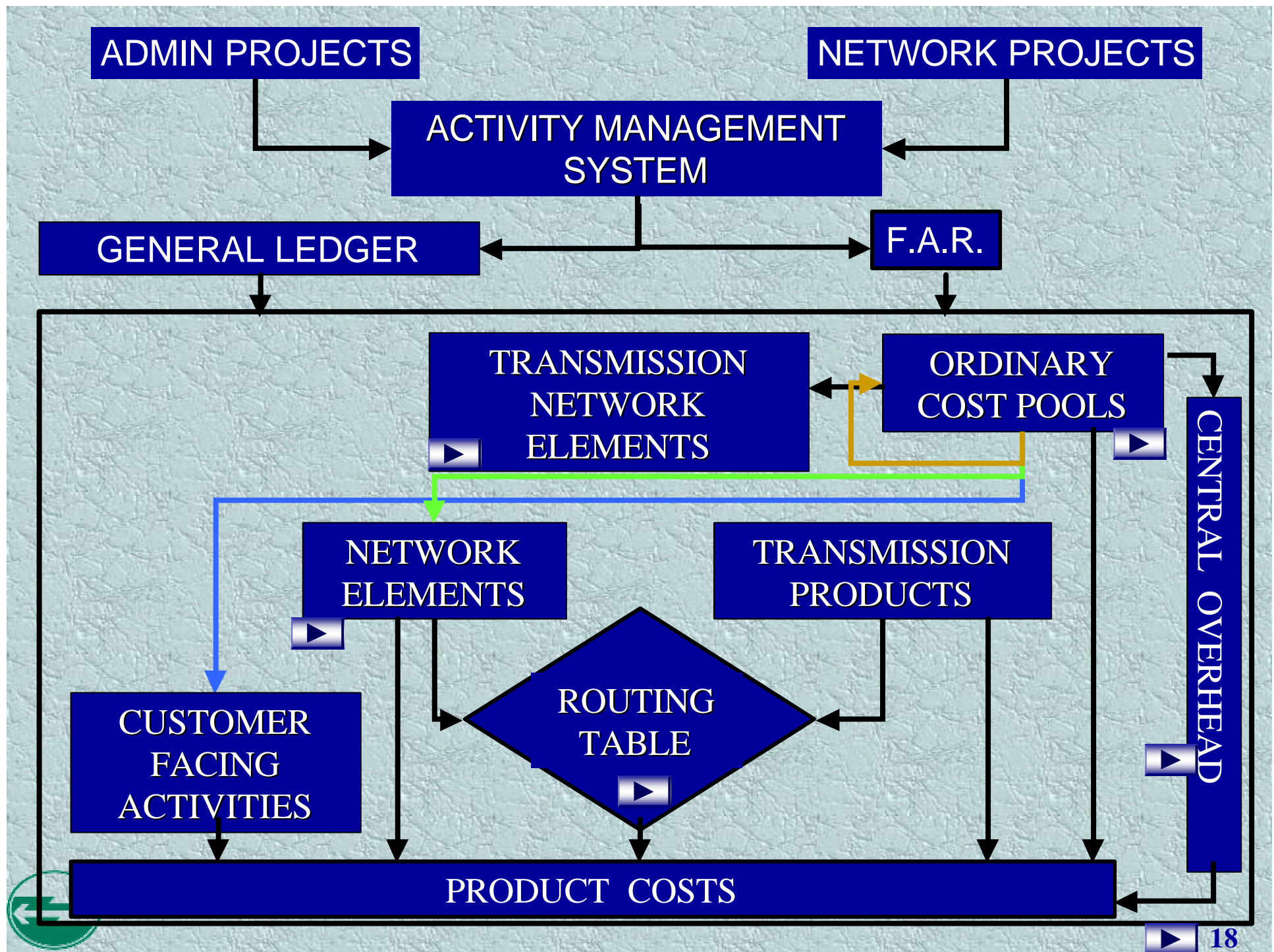
Activity Based Costing

PROVIDES :

➤ More Realistic Cost Allocation Bases (Traditional assumes products consume all resources in proportion to production volumes)

➤ Wider Mechanism for Managing Cost (Produces costs by other cost objects additional to products e.g processes, activities, customers)

➤ Reliable Indication of long run cost

➤ Sound methodology for the identification of cost behavior

➤ Basis for costing work which can be understood throughout the organization
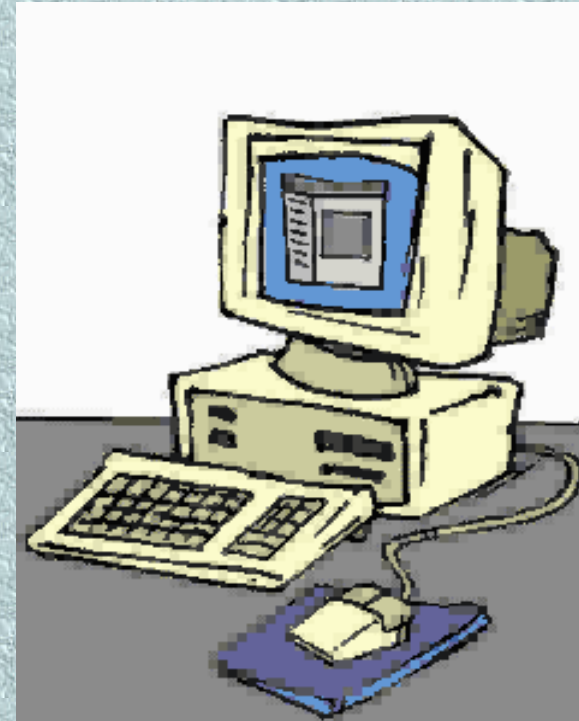
Activity Based Management

Operational Needs

  Activity Mgt

Tactical Needs

  Budgeting

Strategic Needs

  Resource
      Reallocation

The Project

Activities Costing

Network Element Costing

Product Costing

Consumption of Resources

↓ ↓ ↓ ↓ ↓ ↓

Activity Management System

Customer Facing Activities
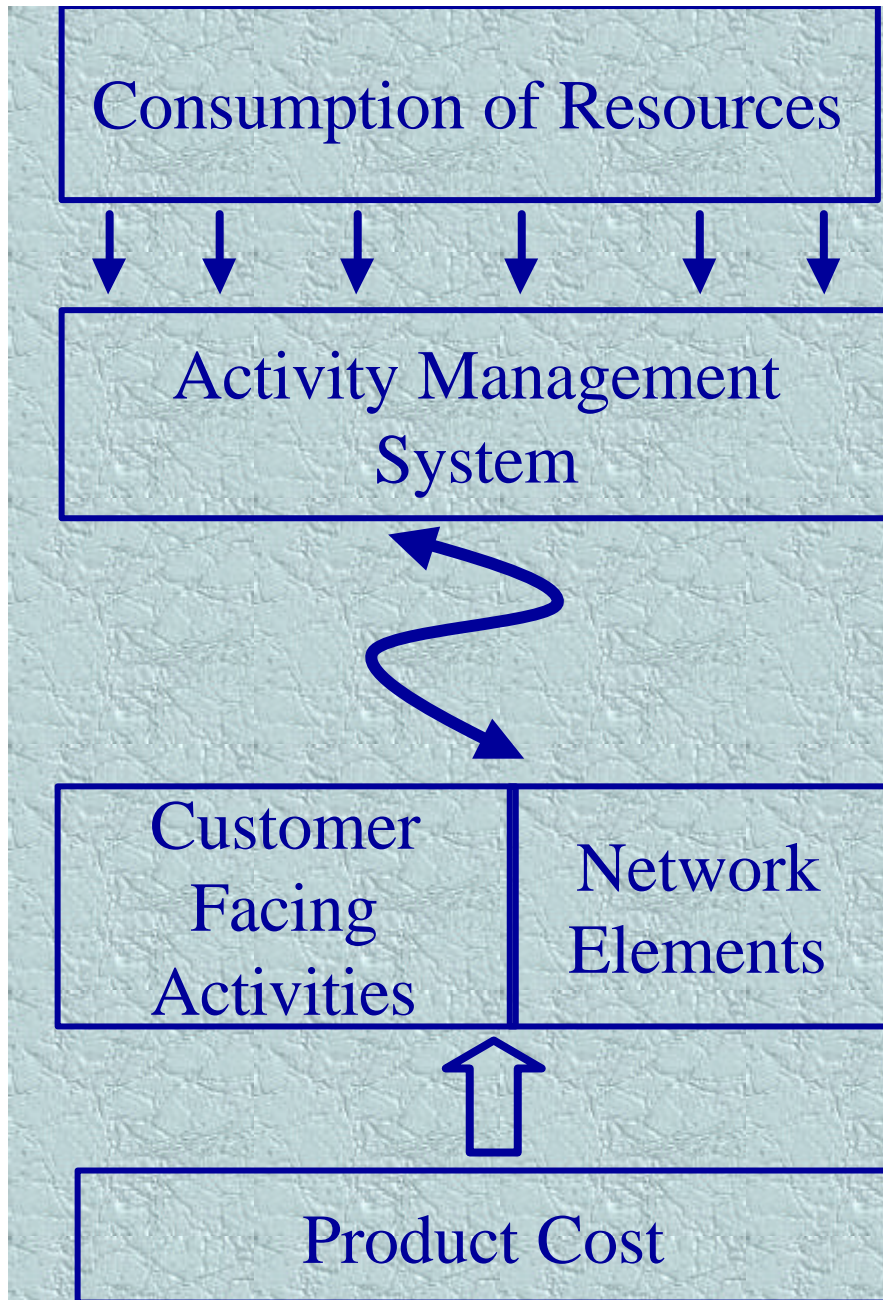
Network Elements

Product Cost
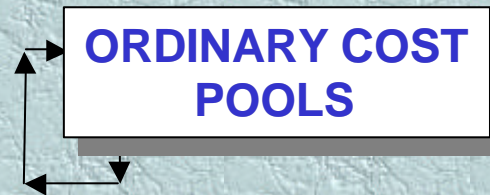
Avoid the pitfalls

of analysis-paralysis

➤ Product Costing Needs
➤ Cost Management Needs

Vs Materiality

RECIPROCAL ALLOCATION OF SERVICE & "HEADQUARTERS" COSTS

ACTIVITY BASED ALLOCATIONS TO COST POOLS

ORDINARY COST POOLS

COST POOLS INTERALLOCATIONS METHODS

➢ REPEATED DISTRIBUTION (even by EXCEL)

➢ SPECIFIED ORDER OF CLOSING METHOD

➢ **MATRIX METHOD**

Sample screen from the CYTA costing SYS

Allocate Cost Pool Rates

From Cost Pool

☑ Enable Cost Pool

CFA 01	Consulting
CFA 01.1	Advertising
CFA 02	Complaint Handling
CFA 03	Application Handling
CFA 04	Billing Subscribers Data

To Cost Pool

PR 01	Telephony Connection
PR 02	Telephony Subscription
PR 03	Telephony Local Calls
PR 04	Telephony Trunk Calls
PR 04,1	Fixed to NMT

Cost Pool Allocation

PR 01

[Include]

Pool Code	Rate
PR 03	27.3431
PR 04	6.0136
PR 04,1	0.1563
PR 04,2	2.8199
PR 05	2.2559
PR 14	1.2042
PR 15	2.4085
PR 16	0.6021
PR 19	8.9358
PR 20	17.6596
PR 21	1.7660
PR 22	0.1000
PR 22.1	0.0068

Total Rate:	100.0000

[Edit] [Remove] [Remove All]

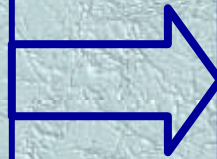[Add] [Delete] [Close]

The Transmission Network Elements

➢Different methodologies discussed

➢Underlying principles: Cost causality

➢Distance Vs non distance sensitive

➢ Transmission network elements to transmission product

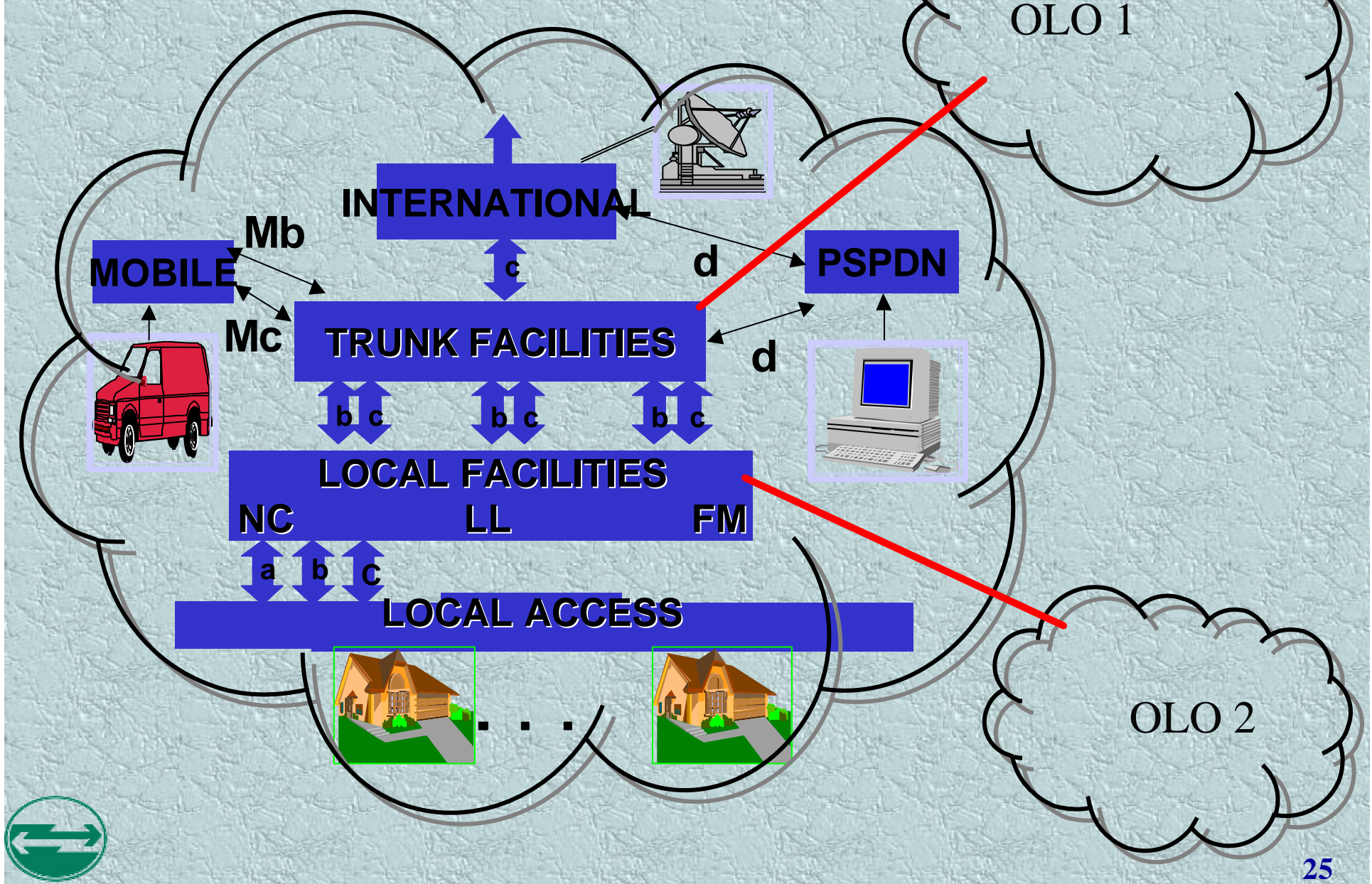| Transmission Network elements e.g.	Transmission Products e.g
➢ Optical cables	➢ Local-Local Link
➢ Copper cables	➢ Local – National
➢ Muldex	➢ Link P.O.I to O.L.O
➢ Radio	➢ PSTN to GSM
➢ LTE	➢ GSM BSC to GSM BS

Coping with Transmission

Arrive at

a percentage of transmission network element

utilisation (for each element)

per transmission product

based on

the weighted average number of network element

utilisation observed/measured

per unit equivalent circuit

NETWORK ELEMENTS COSTS

OLO 1

INTERNATIONAL

Mb

MOBILE

Mc

c

d

PSPDN

TRUNK FACILITIES

d

b c   **b c**   **b c**

LOCAL FACILITIES

NC   LL   FM

a   b   c
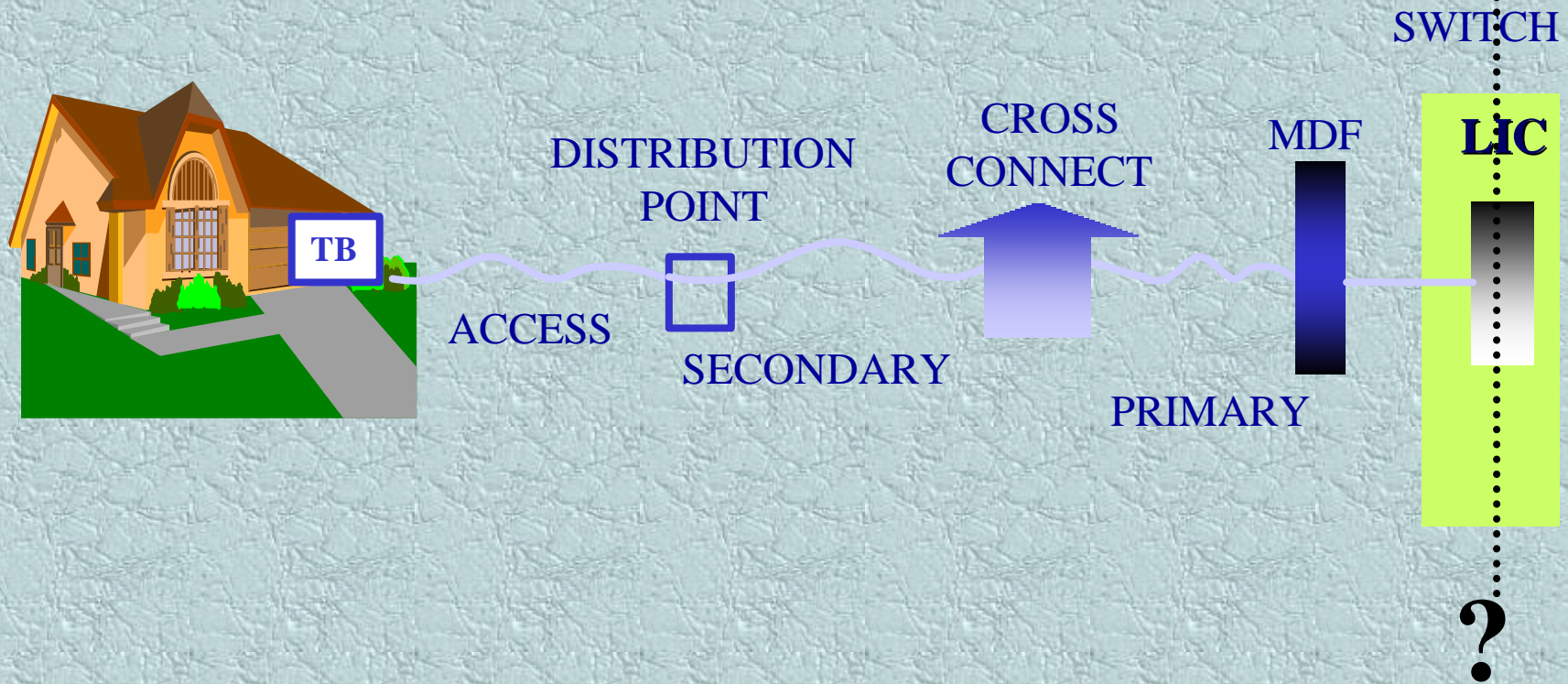
LOCAL ACCESS

. . . .

OLO 2

25

Network Element Costing

- Principle : Cost Causality   Cost → Drivers
- Quality requirements
  - Trace-ability
  - Audit-ability
  - transparency
- Methodology
  - Network elements hierarchy
  - Network design parameters
  - Network element utilization
  - Actual measurements

LIC FUNCTIONALITY

TRAFFIC RELATED FUNCTIONS

e.g.

- CONNECTING THE SUBSCRIBER CIRCUIT TO AN OUTPUT CHANNEL (INCLUDING SIGNALLING)

- TRANSMISSION OF METERING PULSES

- RECOGNITION OF CALL SEQUENCES (off/on hook)

- DIGIT RECEPTION (B number)

- ANALOGUE TO DIGITAL CONVERSION

- SENDING RINGING SIGNALS

LIC FUNCTIONALITY

NON-TRAFFIC RELATED FUNCTIONS

e.g.

- INITIALISING SUBSCRIBER CIRCUITS

- CONTROLLING SUBSCRIBER CIRCUITS

- LINE TESTING

- OVERVOLTAGE PROTECTION

THE ROUTING TABLE

NETWORK ELEMENT		%	RSU	RSU-LOC	LOC	LOC-REG	REG	REG-REG
LOCAL CALL	1	15	2	2	1			
SCENARIOS	2	80		2	2	1		
	3	5	1	1	2	2	1	
TOTAL		100						
FIXED TO P.O.I	1	8	2	2	1			
SCENARIOS	2	2	1	1	1	1	2	1
	3	80	1	1	1			
	4	10	1	1	1	1	1	
TOTAL		100						

TRAFFIC DISTRIBUTION

%PR1   %PR2

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Scenarios of Routing per Product

Product: Fixed LOC (Example)

SCENARIO:1   RSU ⇄ LOC   15%

SCENARIO:2   RSU → LOC → REG → LOC   5%

SCENARIO:3   LOC → REG → LOC   80%

Network Design   Actual Measurements
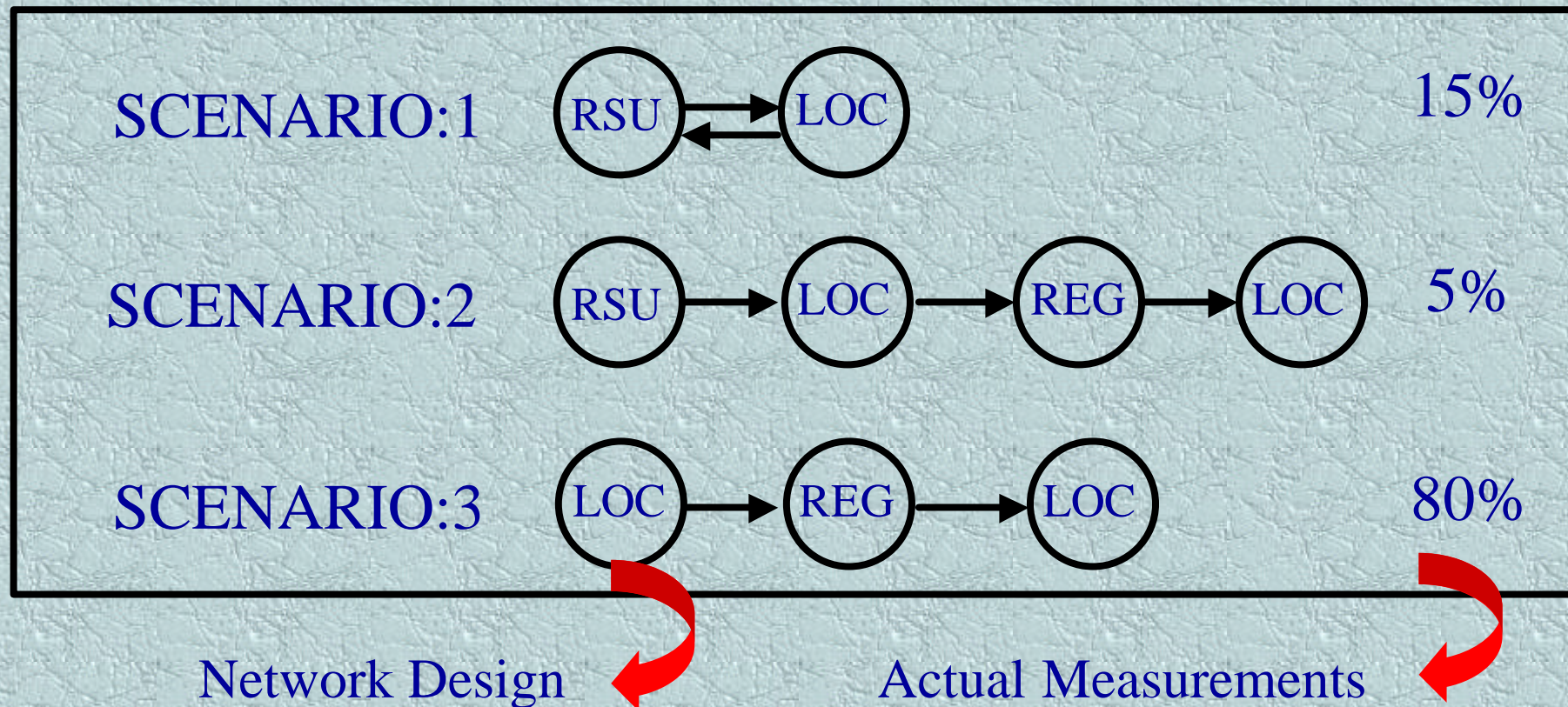
ALLOCATING NETWORK ELEMENT COSTS
TO INTERCONNECTION

PRINCIPLE : COST CAUSALITY

METHODOLOGY :
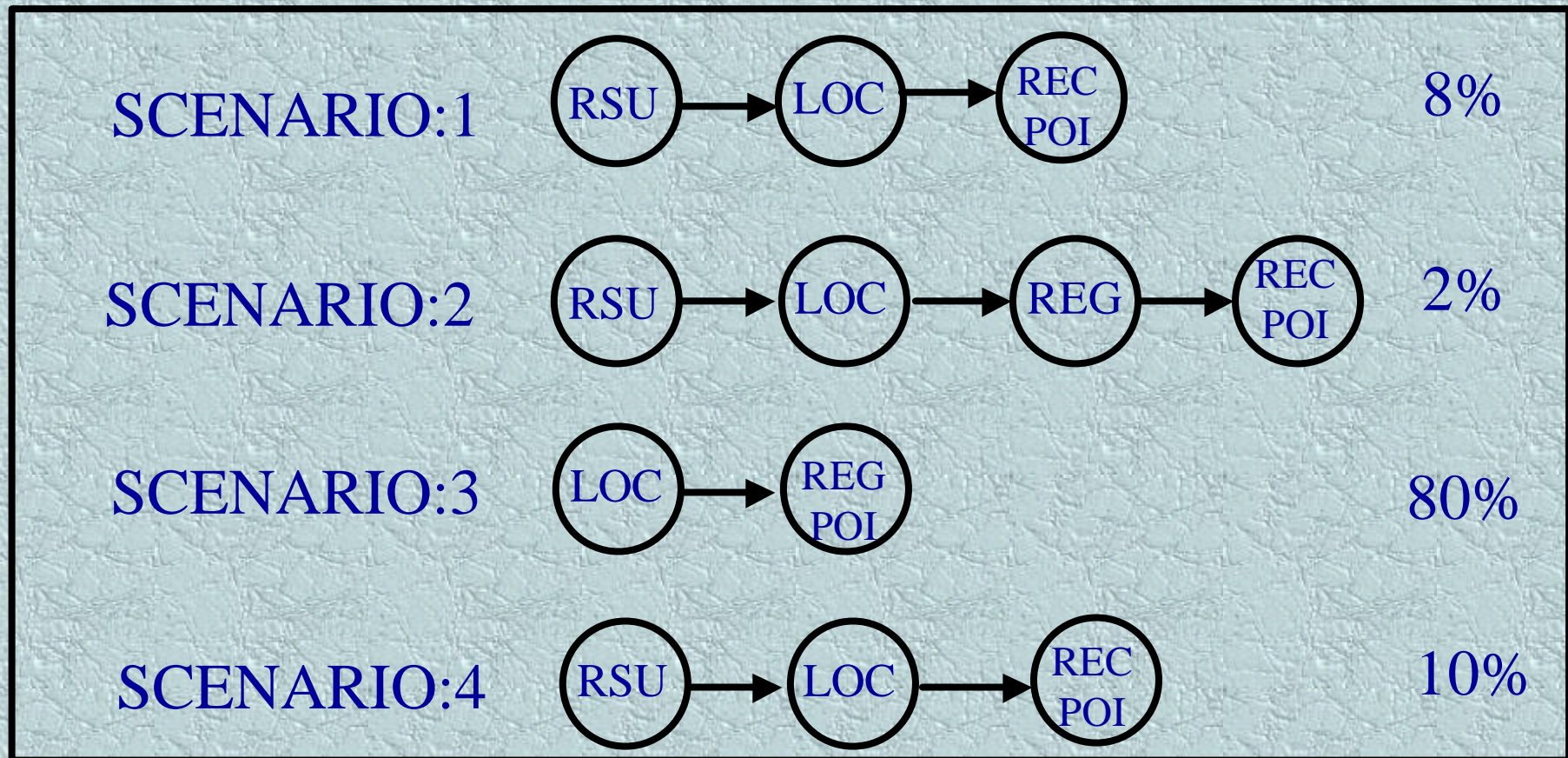
NETWORK ELEMENT OCCURRENCE

NETWORK DESIGN PARAMETERS

NETWORK ELEMENT UTILISATION

ACTUAL MEASUREMENTS

Scenarios of Routing per Product

<u>Product</u>: Fixed P.O.I (Example)

SCENARIO:1 RSU → LOC → REC POI   8%

SCENARIO:2 RSU → LOC → REG → REC POI   2%

SCENARIO:3 LOC → REG POI   80%

SCENARIO:4 RSU → LOC → REC POI   10%

Sample Screen from the CYTA costing system

ABC RESULT

- Increased considerably direct costs identified per

  activity/network element :

  all network costs and considerable proportion of

  "administrative" costs (even the G.M. books time to

  activities)

  as many costs as possible are allocated directly to relevant

  products

- **Minimisation of Indirect Overhead (8%)**

INDIRECT (COMMON) OVERHEAD COSTS

BASED ON GROSS OR NET SERVICE REVENUES ? ("ability to bear" rationale)

OR

ALLOCATION BASED ON COSTS ABSORBED BY PRODUCT ("equity" or "fairness" rationale)

OR

VARIABLE MARK-UPS   - Low on price elastic services
                              (e.g call charges)
                           - High on price inelastic services

WHAT IS THE DOMINANT PURPOSE OF THE COST ALLOCATION ?

SYSTEM DEVELOPMENT : BY CYTA

→ COOL: Gen INDUSTRY LEADING APPLICATION

ENVIRONMENT (CASE TOOL) ENABLES

ACCESS FROM APPLICATIONS SUCH AS

VISUAL BASIC, EXCEL AND

POWERBUILDER

→ USER FRIENDLY STANDARD AND AD HOC REPORTS

→ GRAPHICAL USER INERFACE (GUI)

→ CLIENT / SERVER ARCHITECTURE

→ SUPPORTS MANY HARDWARE AND SOFTWARE

PLATFORMS INCLUDING MAINFRAME, UNIX, NT,

OS/2

MOBILE NETWORK COSTS

THE TRAFFIC Vs NON-TRAFFIC SENSITIVE SPLIT STILL AN ISSUE

DETAILED ANALYSIS OF EACH NETWORK SUB-
   ELEMENT

- DISTINGUISH COSTS TO
   TRAFFIC, SUBSCRIBER AND COVERAGE
   SENSITIVE
   USING ENGINEERING ESTIMATES ?

AND/OR

- APPLY THE "ONE ROAMER" METHOD ?

OR

- APPLY THE "BASIC NETWORK" METHOD ?

MOBILE NETWORK COSTS :

THE "BASIC NETWORK" PRINCIPLE

THE "ONE ROAMER" METHOD COULD BE CONSIDERED THE "MARGINAL" WAY OF APPROACHING THE ISSUE

WHEREAS

THE "BASIC NETWORK" METHOD COULD BE CONSIDERED THE "INCREMENTAL" WAY

MOBILE NETWORK COSTS:

THE "BASIC NETWORK" METHOD

MAIN STEPS
- **DEFINE "BASIC NETWORK": ACCEPTABLE COVERAGE, QUALITY, AND CAPACITY**

- **RECOGNISE ANY COVERAGE IMPROVEMENT (Delta non-traffic sensitive) IN INCREMENTAL INVESTMENTS**

- **IDENTIFY PROPORTION OF TRAFFIC SENSITIVE COSTS IN THE INCREMENT (Beware of Software Upgrades)**