InterConnect Communications
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Cost Modeling

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Agenda

- Benchmarking
- Allocating switching and transmission costs between calls, leased lines and other services
- Identification of manpower activity costs
- Finding the appropriate input data

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EU Benchmark Interconnect Tariffs

Level of interconnection	1999 best current practice call termination charges (€ -cent per min)	**2000 best current practice call termination charges (€ -cent per min)**
Local interconnection	0.5 – 1.0	**0.5 – 0.9**
Single transit interconnection	0.8 – 1.6	**0.8 – 1.5**
Double transit interconnection	1.5 – 2.3	**1.5 – 1.8**

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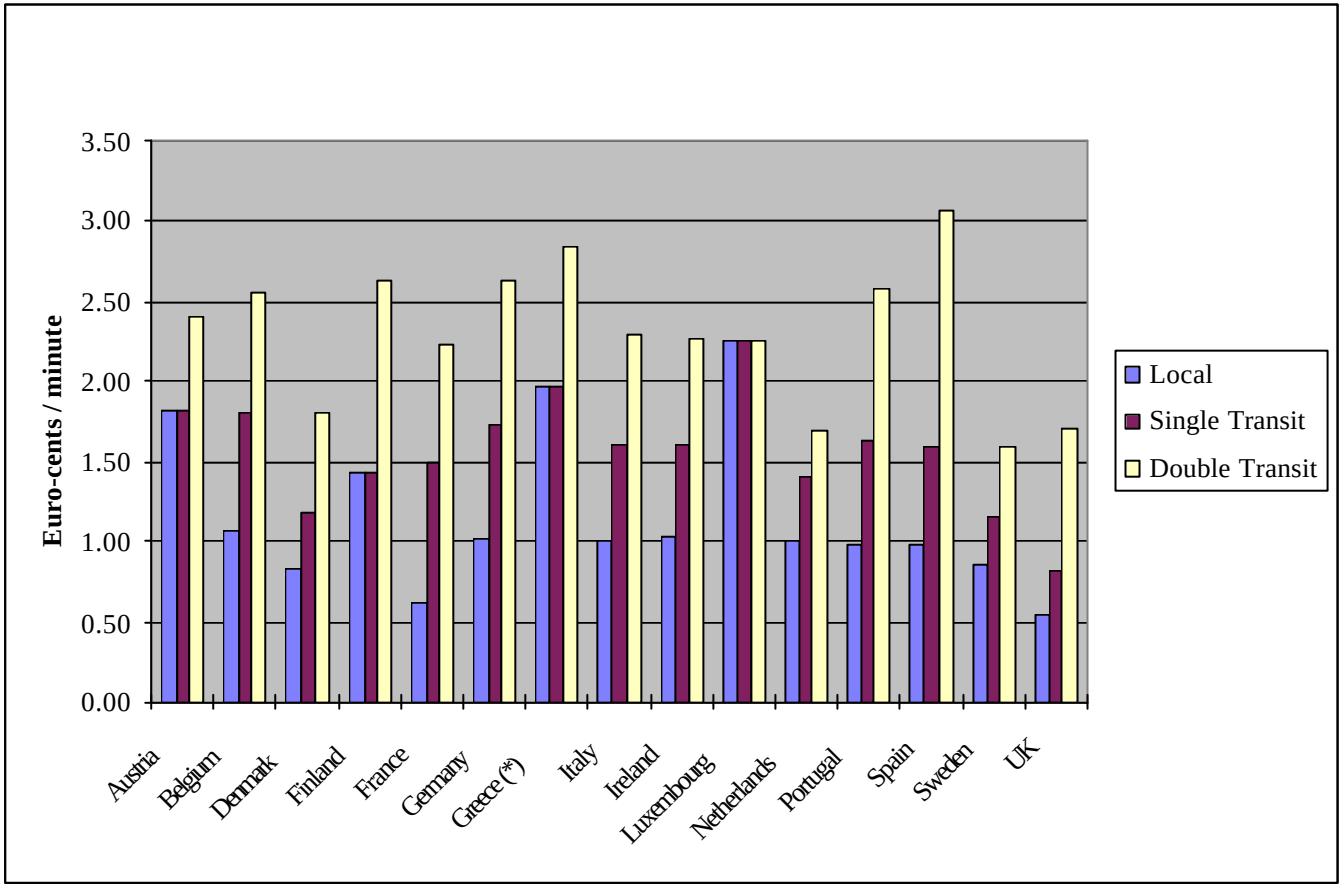
EU Benchmark Interconnect Tariffs



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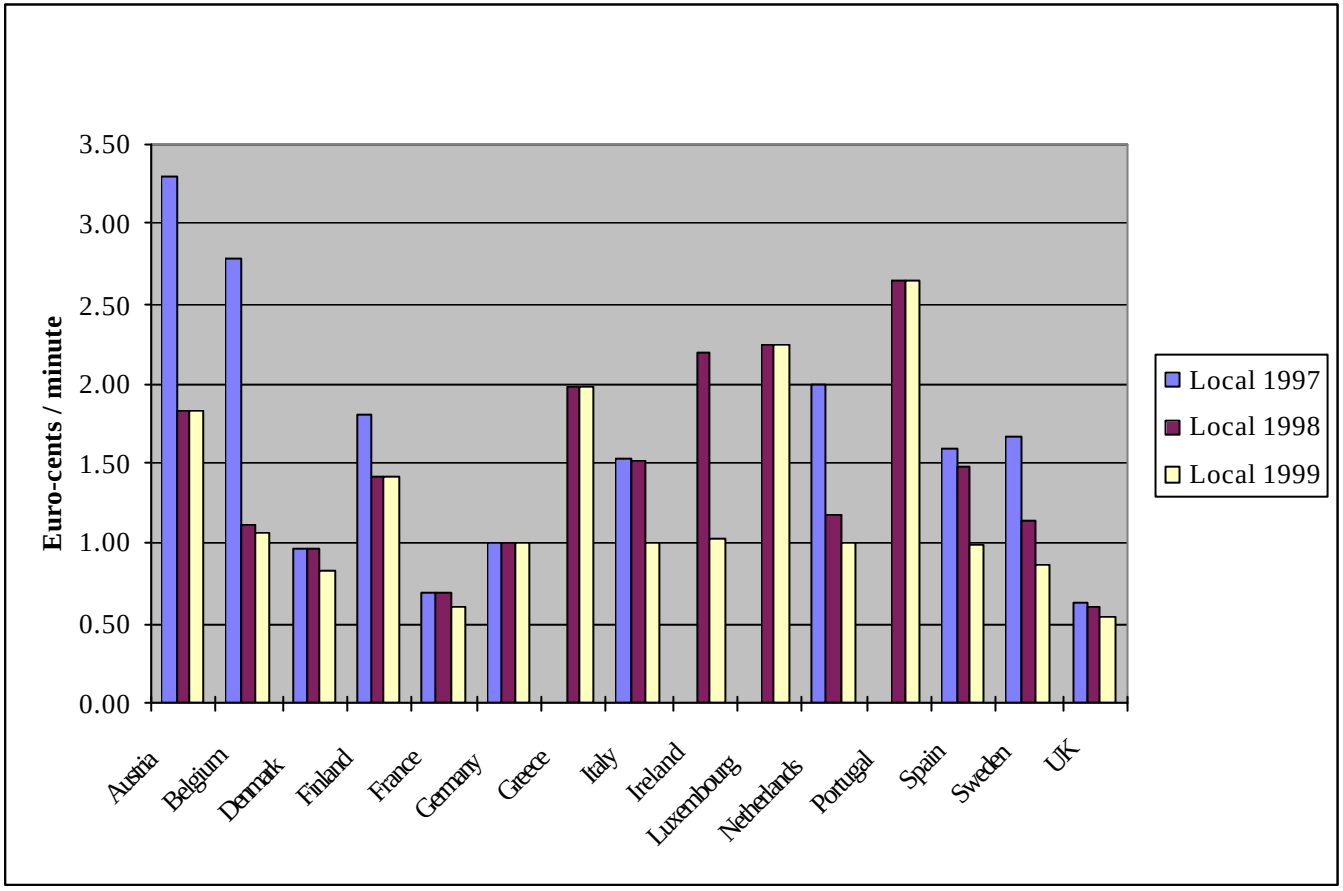
Local interconnect tariffs



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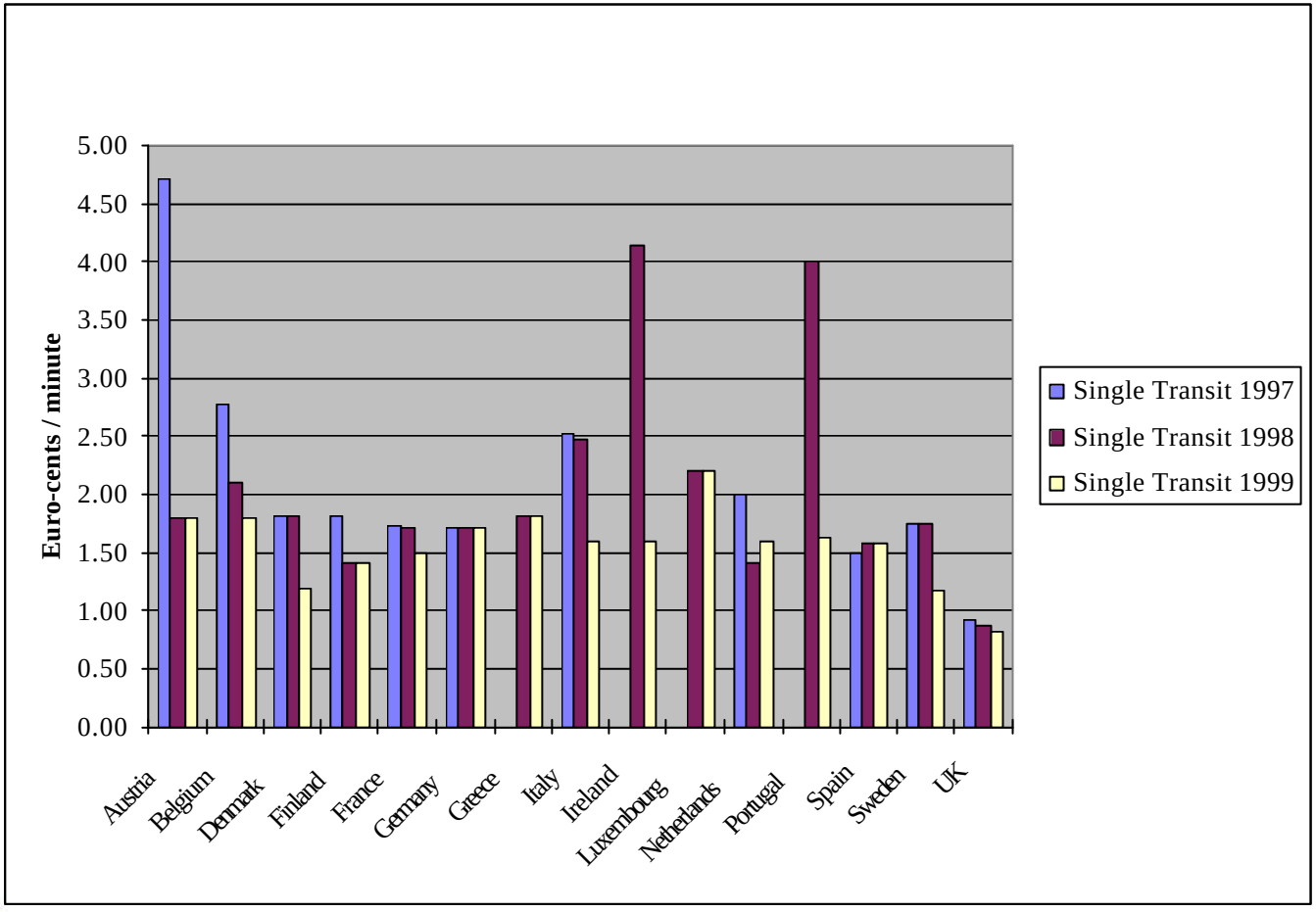
Single Transit Interconnect tariffs



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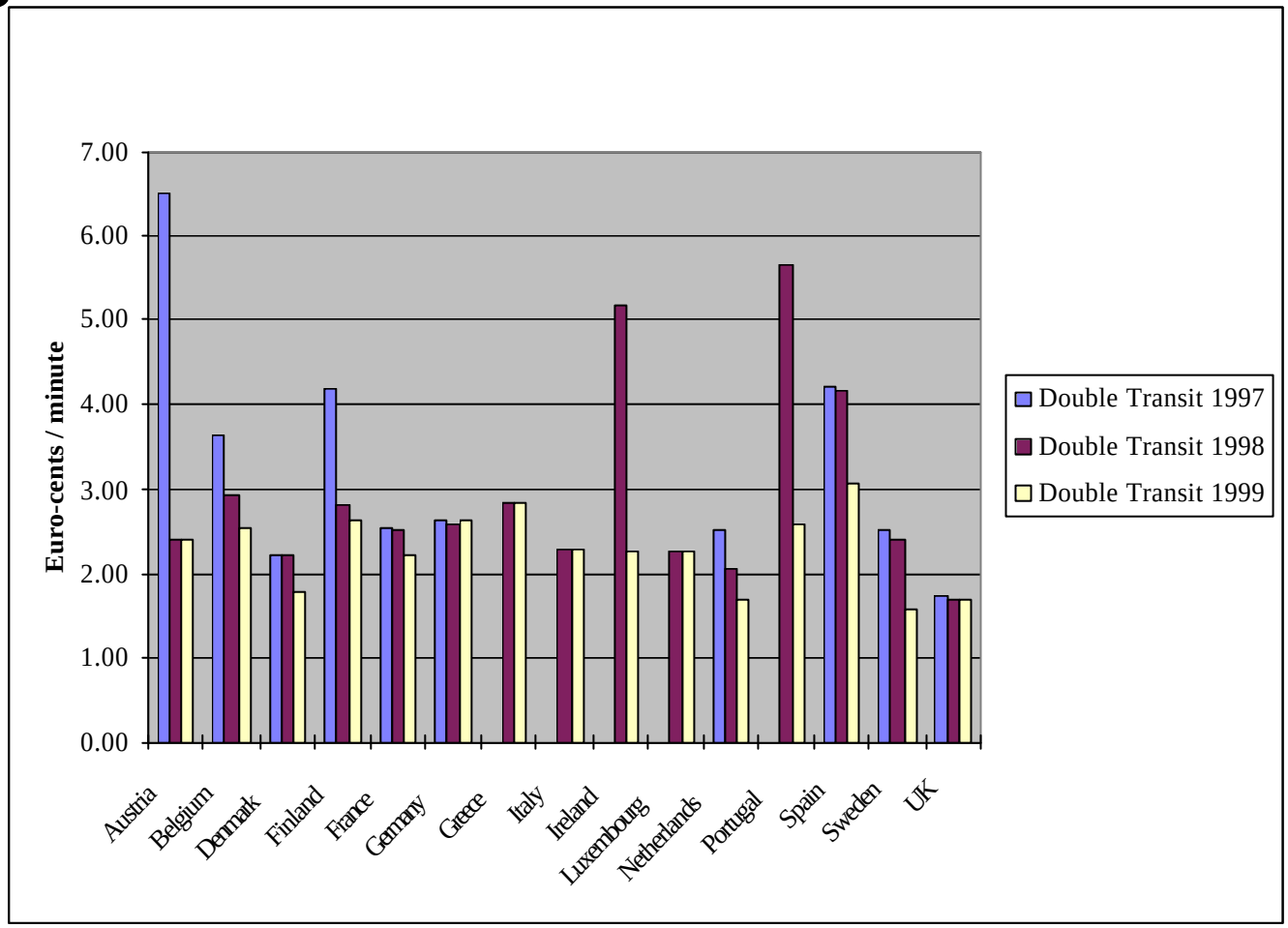
Double Transit interconnect tariffs



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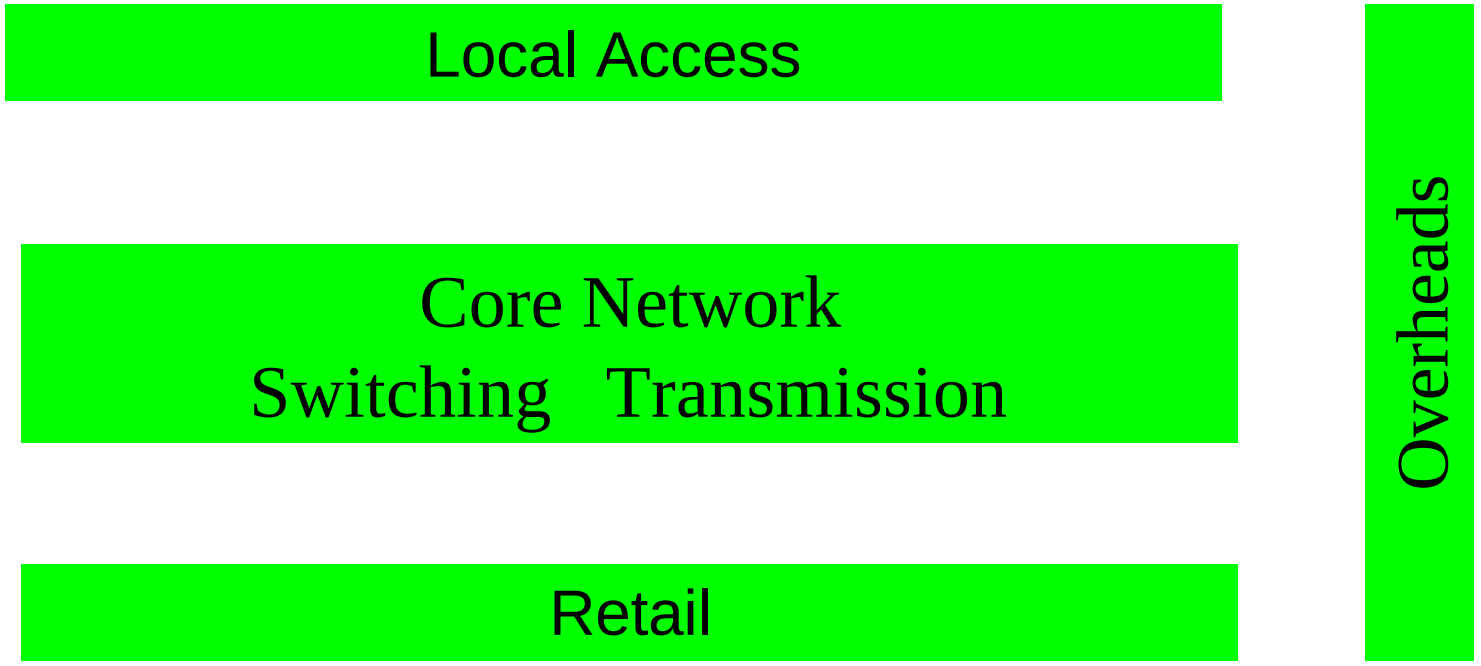
Elements of Cost



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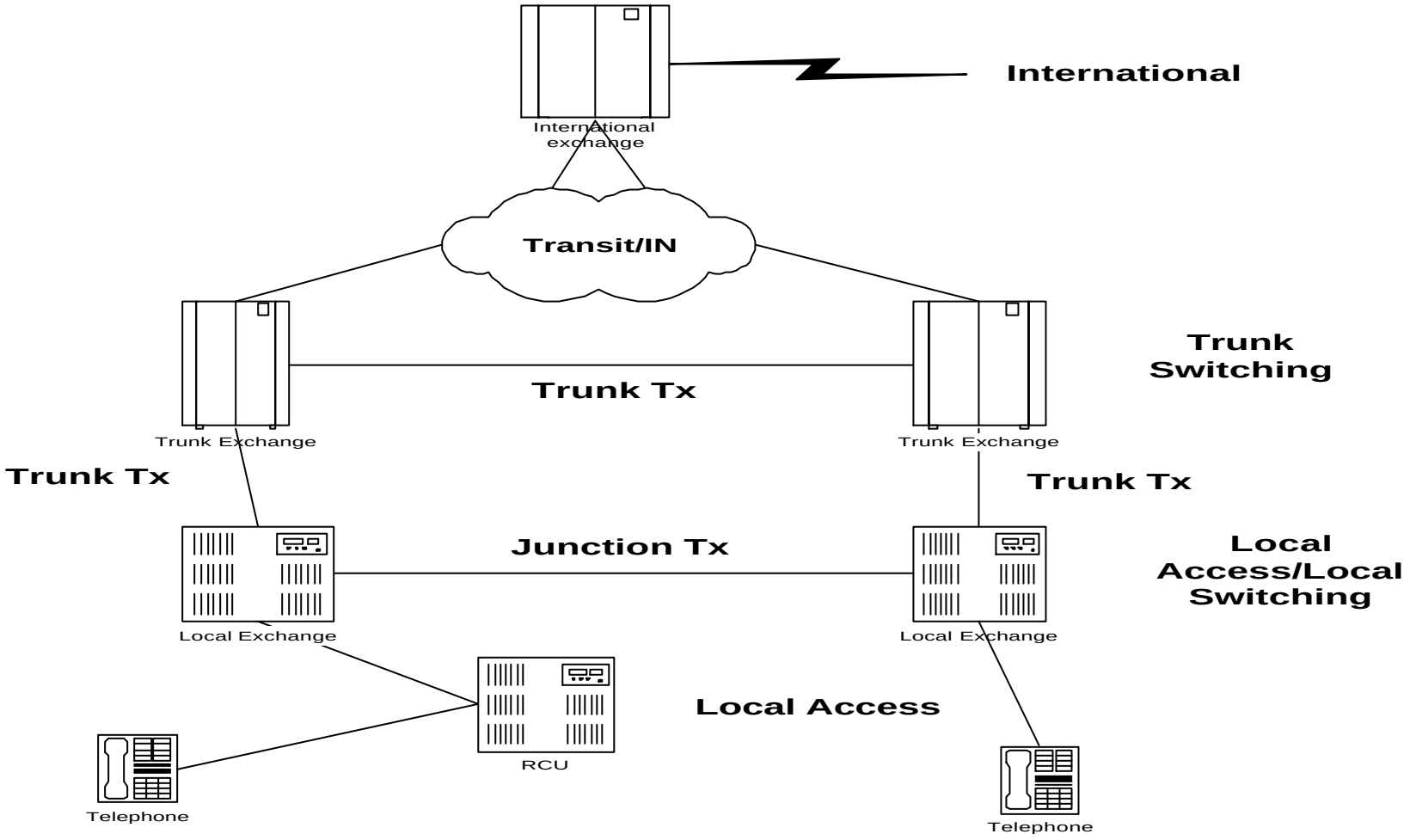

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Local Access

- Drop wire, Cables, DPs
- Ducts
- Radio Local Loop
- Remote Concentrator Unit (RCU)
- RCU to host exchange transmission
- Local exchange elements

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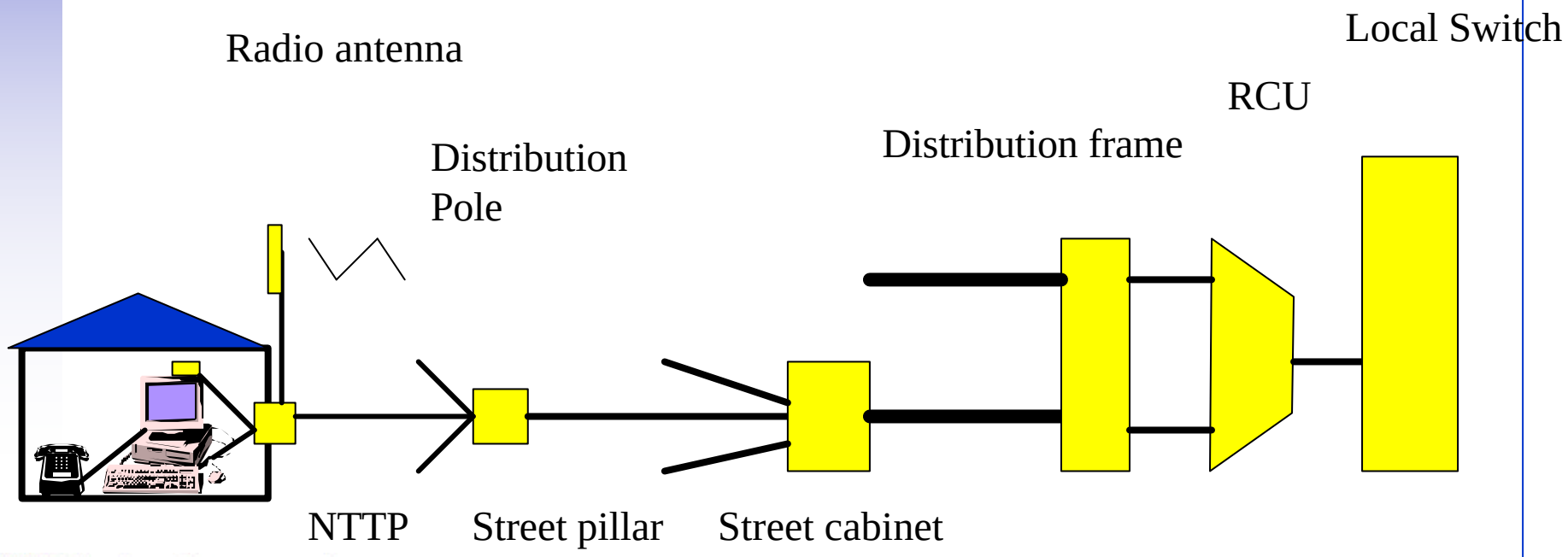
Local Loop Elements



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Local Access Costing Issues

- FAC v LRIC
  - Current cost accounting
  - RCU policy
- Connection v Traffic dependent
- Sharing of network components
  - leased lines
  - core network

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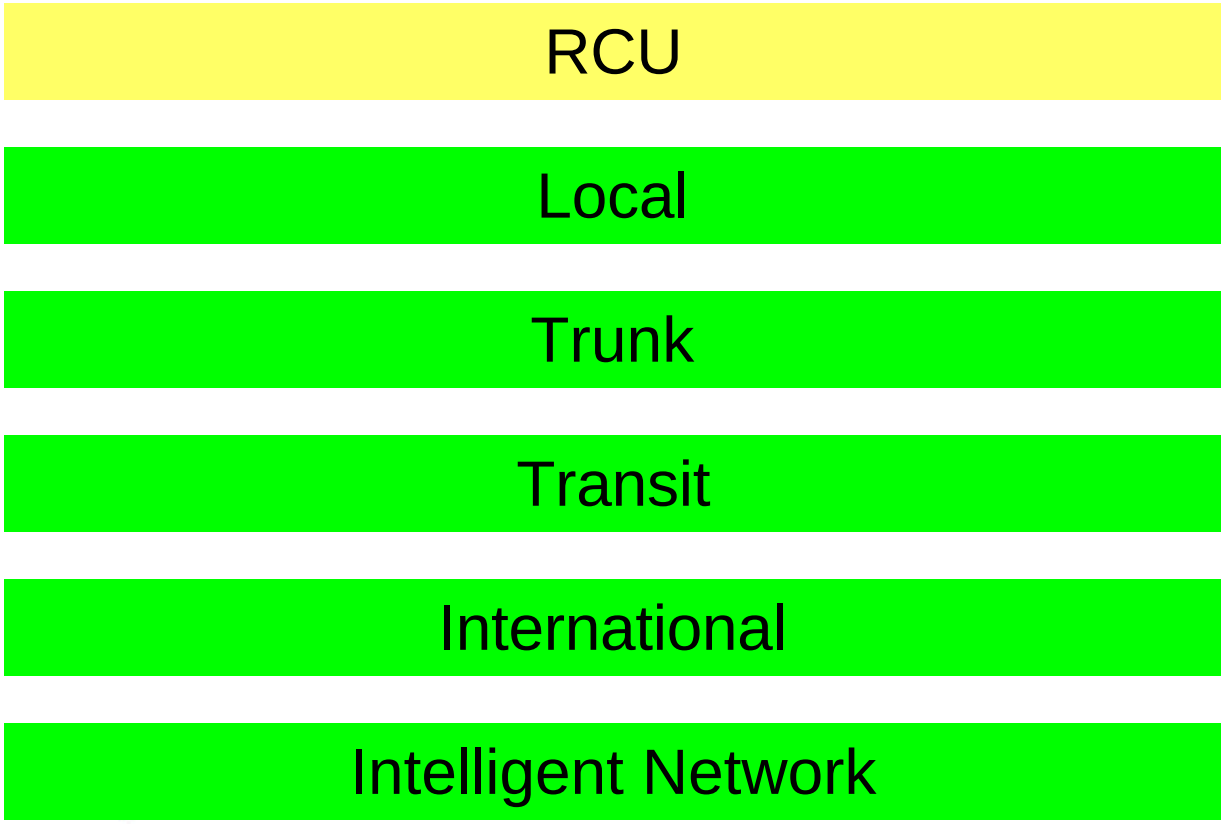
Switching



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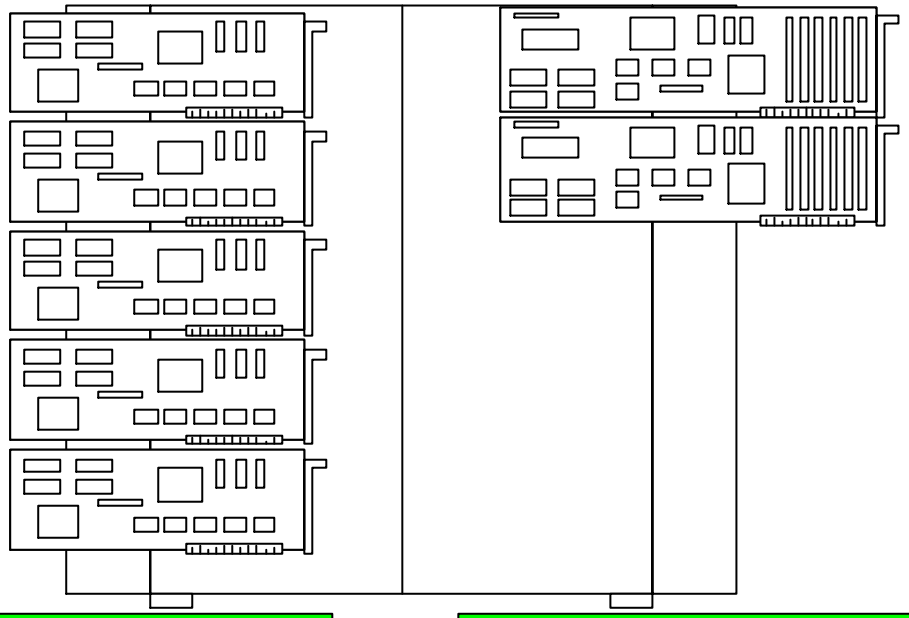
Local Switch



Line Cards

Trunks

Signalling

Common Control

Switching Matrix

Connection Dependent

Traffic Dependent

Power and Air Conditioning

Accommodation

Software

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Switching Cost Issues (1)

- Traffic dependent elements
- Connection dependent elements
- Call set up cost (all call attempts)
  - Signalling
  - Element of common control
  - Element of switching matrix
  - Power and air conditioning

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Switching Cost Issues (2)

- Traffic cost (successful calls)
  - Switching matrix
  - Common control
  - Billing
  - Power and air conditioning
- Transit/Trunk switching network

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Traffic Routing - Switching

Call Types	Local	Trunk	International	Total number of Minutes	% split of traffic types	Minutes of calls of each type	Use of switching	Local minutes	Trunk minutes
Local				2000000					
Own Exchange/RCU	2	0	0		0.55	1100000	=2L	2200000	0
RCU/Local-Local/RCU	2	0	0		0.4	800000	=2L	1600000	0
1 transit	2	1	0		0.05	100000	=2L+T	200000	100000
2 transits	2	2	0			0	=2L+2T	0	0
							Total	4000000	100000
Regional				500000					
Local-local	2	0	0		0.2	100000	=2L	200000	0
1 transit	2	1	0		0.75	375000	=2L+T	750000	375000
2 transits	2	2	0		0.05	25000	=2L+2T	50000	50000
							Total	1000000	425000
National				1500000					
1 transit	2	1	0		0.4	600000	=2L+T	1200000	600000
2 transits	2	2	0		0.5	750000	=2L+2T	1500000	1500000
3 transits	2	3	0		0.1	150000	=2L+3T	300000	450000
							Total	3000000	2550000
International o/g				250000					
1 transit	1	1	1		0.25	62500	=L+T+I	62500	62500
2 transits	1	2	1		0.75	187500	=L+2T+I	187500	375000
3 transits	1	3	1			0	=L+3T+I	0	0
							Total	250000	437500

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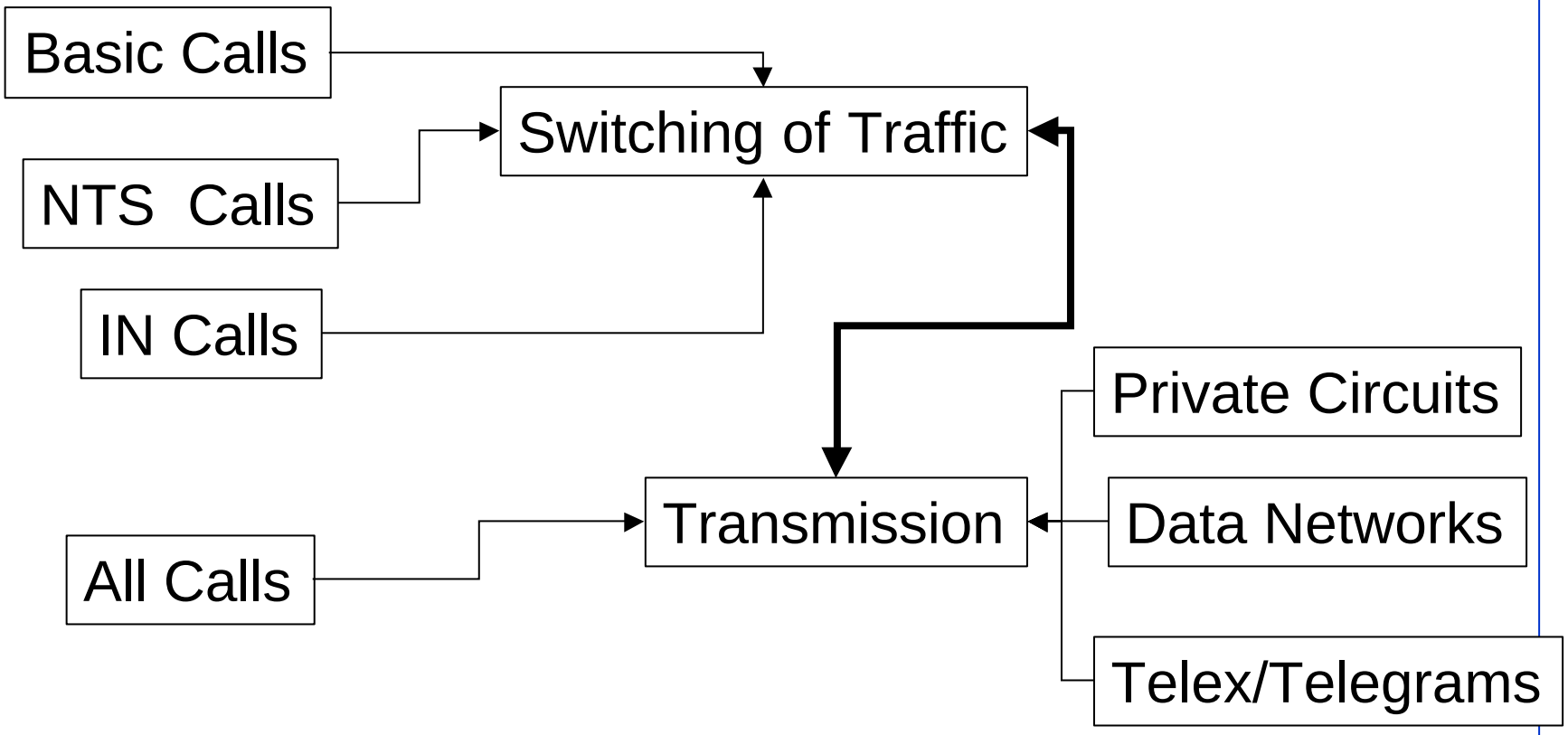
Transmission Networks



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Transmission

Inter-Local exchange (Junction)

Trunk

Transit

International

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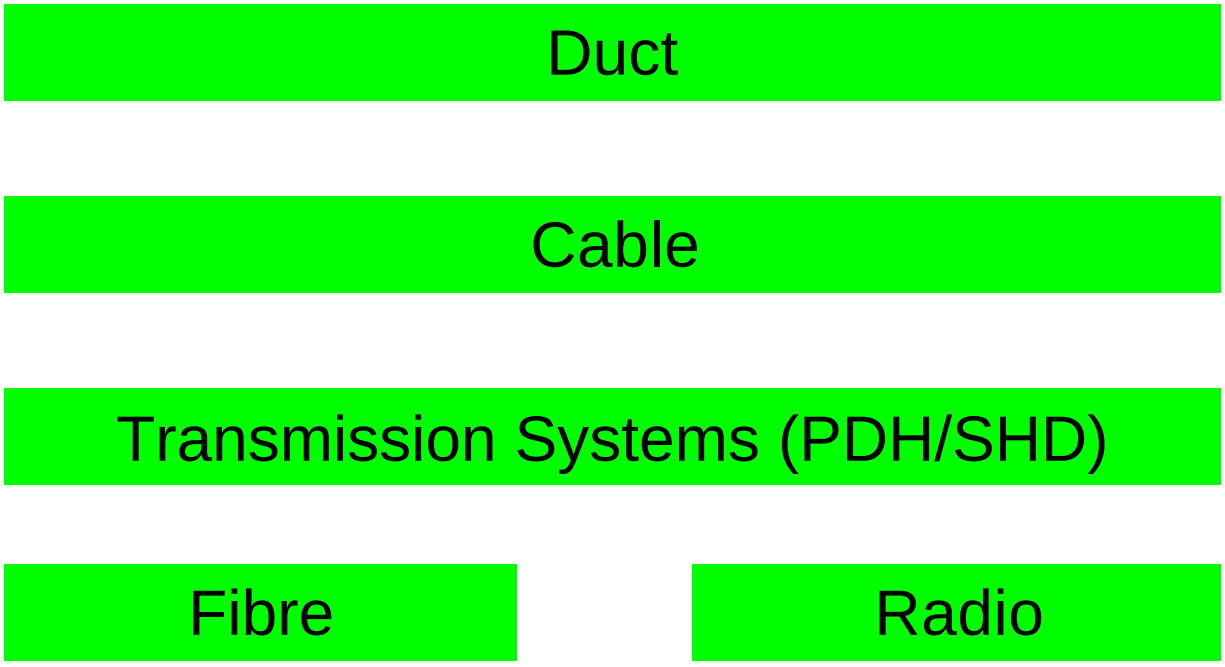
Transmission Technologies



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Transmission Costing Issues (1)

- Service dependent
  - Leased lines
  - Data services
  - Telex/Telegraph
- Local access/Trunk network sharing

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Transmission Costing Issues (2)

- Fixed and distance related elements
- PDH and SDH technology
- Spare capacity
- Wayleaves
- Value of assets (CCA v LRIC)

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Traffic Routing - Transmission

Call Types	Junction	Trunk	International	Total number of Minutes	% split of traffic types	Minutes of calls of each type	Use of transmission	Junction minutes	Trunk minutes	International minutes	
Local				2000000							
Own Exchange/RCU	0	0	0		0.55	1100000		0	0	0	
RCU/Local-Local/RCU	1	0	0		0.4	800000	=J	800000	0	0	
1 transit	0	2	0		0.05	100000	=2T	0	200000	0	
2 transits	0	3	0			0	=3T	0	0	0	
							Total	800000	200000	0	
Regional				500000							
Local-local	1	0	0		0.2	100000	=J	100000	0	0	
1 transit	0	2	0		0.75	375000	=2T	0	750000	0	
2 transits	0	3	0		0.05	25000	=3T	0	75000	0	
							Total	100000	825000	0	
National				1500000							
1 transit	0	2	0		0.4	600000	=2T	0	1200000	0	
2 transits	0	3	0		0.5	750000	=3T	0	2250000	0	
3 transits	0	4	0		0.1	150000	=4T	0	600000	0	
							Total	0	4050000	0	
International o/g				250000							
1 transit	0	2	1		0.25	62500	=2T+I	0	125000	62500	
2 transits	0	3	1		0.75	187500	=3T+I	0	562500	187500	
3 transits	0	4	1			0	=4T+I	0	0	0	
							Total	0	687500	250000	
International i/c				400000							
1 transit	0	2	1		0.3	120000	=2T+I	0	240000	120000	
2 transits	0	3	1		0.7	280000	=3T+I	0	840000	280000	
3 transits	0	4	1			0	=4T+I	0	0	0	
							Total	0	1080000	400000	

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Manpower Activity Model

- Manpower is a very significant cost within any operator
- Manpower costs drive many other costs
- The Manpower Activity Model assists the collection and allocation of costs to specific activities down to an individual employee for input into CAM

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Where is the input data?

- All over the company!
  - General ledger
  - Fixed assets register
  - Manpower activity recording system
  - Customer billing system
  - Interconnect billing system
  - Network monitoring and recording systems
  - Building management dept
  - R&D department

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Conclusions

- Cost allocation is a complex, time consuming activity
- Cost allocation is now essential but undertaken for different reasons
  - regulatory
  - service pricing
  - P & L
- Detailed input data is essential for cost allocation

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