



# Operators

S-38.041 Networking Business



# Operator's operational objective

- Keep existing
- Acquire new

- Increase usage (more and better services)
- Increase prices (segmentation, branding)

$$\text{Profit} = \text{Subscribers} * \text{ARPU} - \text{OPEX} - \text{CAPEX}$$

- Optimize service quality
- Make vs. buy

- Optimize coverage and capacity
- Press equipment suppliers

ARPU = average revenue per user


OPEX = operational expenditure (personnel, marketing, etc)

CAPEX = capital expenditure (equipment, licences, etc)



# Operator business changing (1/2)


Driven by government intentions

PAST		FUTURE
Government ownership		Private ownership
Monopolies		Competing oligopolies
Local operators		Global operators
Real operators		Virtual operators
Value chains		Value nets
Long-term focus		Quarterly focus
Static budgets		Rolling budgets



# Operator business changing (2/2)

Driven by technology evolution

PAST		FUTURE
Dedicated networks		All IP
Dedicated operators		Full-service operators
High margins		Low margins
Wireline		Wireless
Incremental investments		Large investments
Subscriptions		Subscribers
Interconnect agreements		+ Roaming agreements

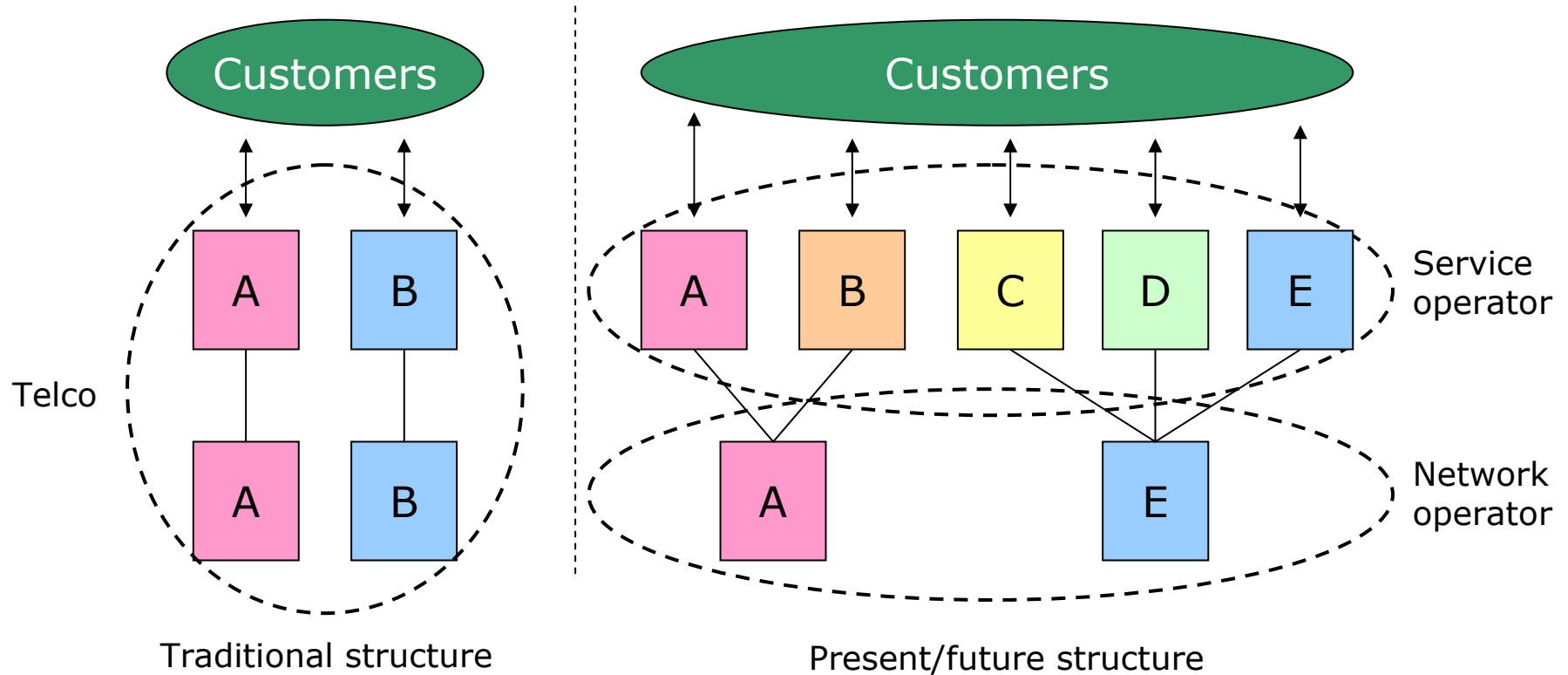


# Market consolidation

- Number of network operators reducing globally from thousands to hundreds. Oligopoly likely within each segment: global, regional, national
- Number of telecom system vendors likely to reduce globally from 40 to 10 creating another oligopoly
- Number of consumer terminal vendors, desktop and mobile, reducing from tens to less than ten



# Market restructuring





# Market value per service

Case: US service providers' annual revenues, 2003

Total telecom	\$300B
Cellular	80
Internet	35
dedicated access	15
residential dial	10
residential broadband	10

**Value is still in voice!**



# Service value per sub & megabyte

Case: US

Service	Typical monthly bill	Revenue per MB
Cable	\$40	\$0.00012
Broadband Internet	50	0.025
Phone	70	0.08
Dial Internet	20	0.33
Cell phone	50	3.50
SMS		3000.00

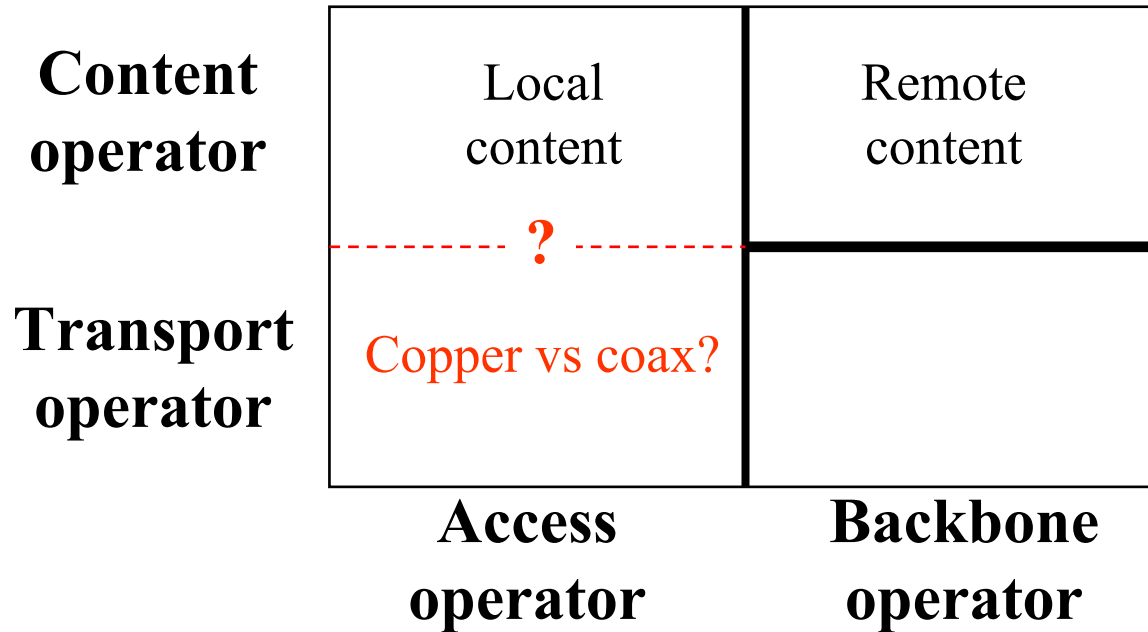
Volume and value only weakly related !

There are still unexploited opportunities in voice, especially in 3G (with differentiated voice quality levels, etc.). The success of Nextel's push-to-talk should not have been a surprise (nor SMS).





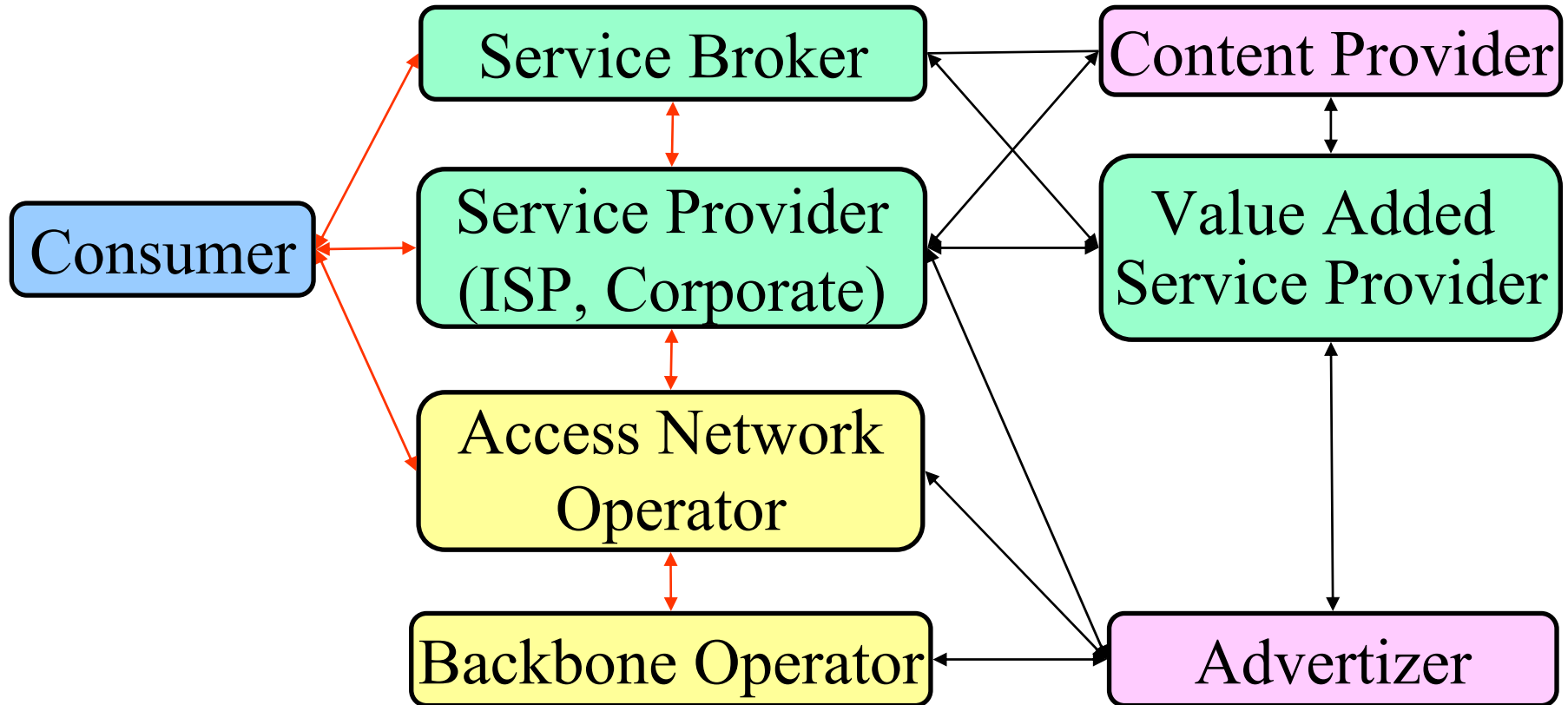
# Basic market segments



- Access (=retail) and backbone (=wholesale) operators keep separating
- All access operators keep converging, but regulator fights against monopolies
- Remote content is a separate market, but needs charging mechanisms
- Local content may be bundled with access operators?



# Reference business model

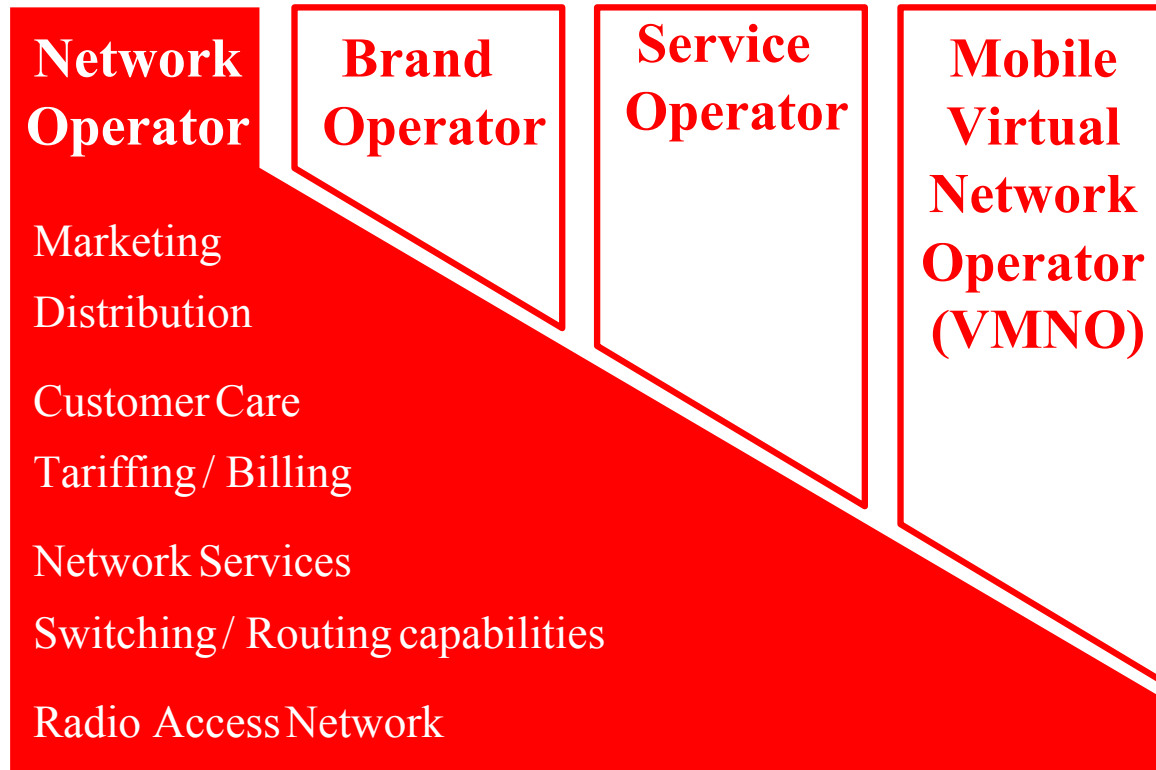


The linear value chain becomes a value network. The assumption of a value chain is that there is a hierarchy; there is none in the value network. Indeed, the smallest company may be the most important to the network, since it is they who are producing the value proposition.

Source: 3GPP



# Types of mobile operators



- Regulation and competition generate derivatives in the mobile markets
- Virtual market is likely to exceed the fundamentals/MNO market !



# Mobile operator space

Case: Finland

Network Operator	MVNO	Service Operator	Brand Operator
TeliaSonera <sup>(1)</sup>		Sonera, Saunalahti, Globetel, Terraflex, ACN	Hesburger Passeli
Radiolinja Origo <sup>(1)</sup>	Tele2 <sup>(2)</sup>	Radiolinja, Cubio, MTV 3 Oy	Choice Markantalo
Finnet Verkot <sup>(1)</sup>		Dna Finland, Fujitsu Invia, Finnet Com, PGFree	

(1) Operators with GSM and WCDMA licence

(2) Operator with WCDMA licence only

In Finland, the derivative market is still less than 20% of MNO market



# Analysis of mobile value chain

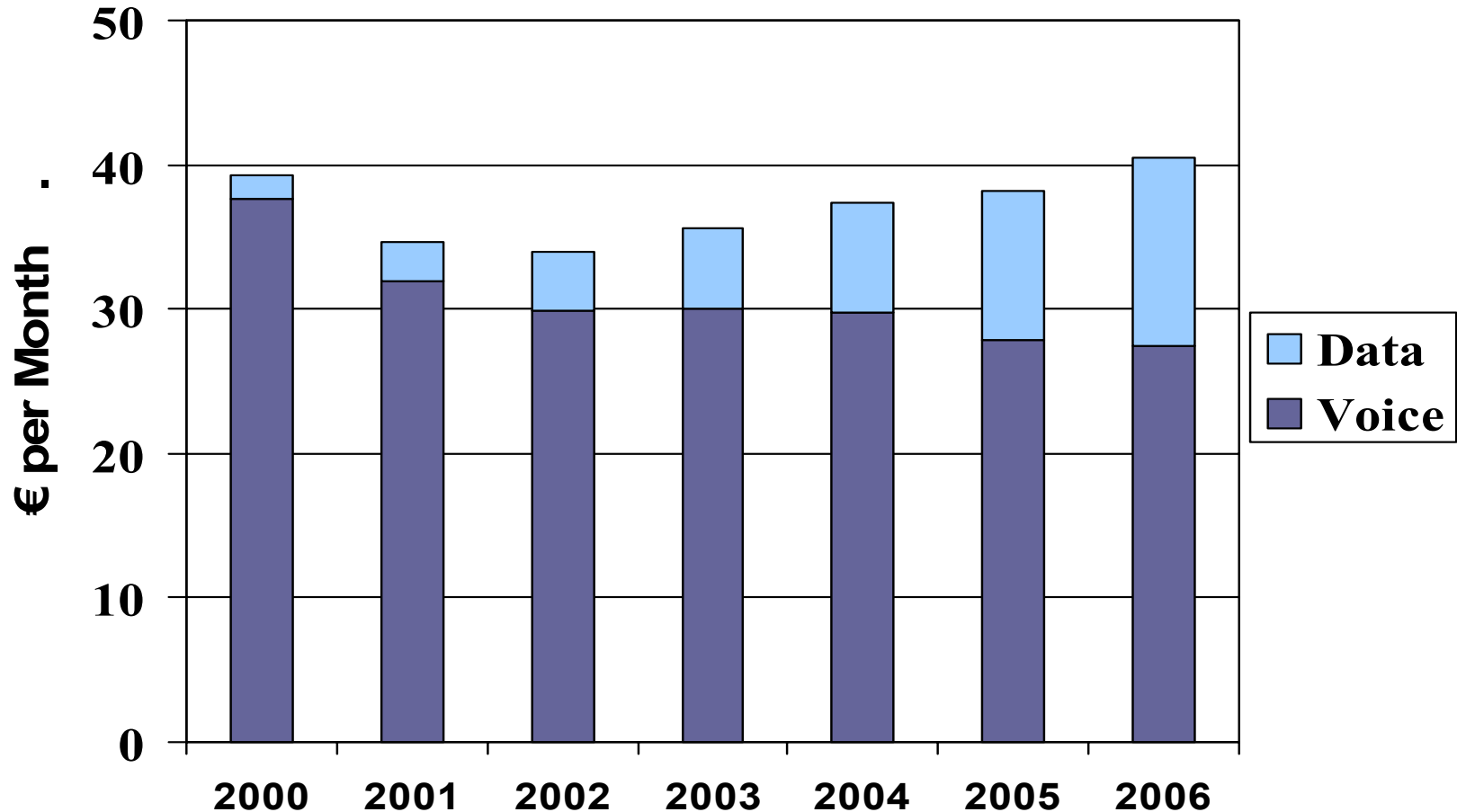
Case: 3G operator types

	Bit-pipe operator	Platform operator	Incumbent operator
CAPEX			
OPEX			
Optimization of network performance	simple?		
Creation of new services			
Offering services to other operators		openness?	
Controlling ARPU			
CAPEX payback time			risk?

The best business model is still a question mark!



# Mobile Services ARPU forecast

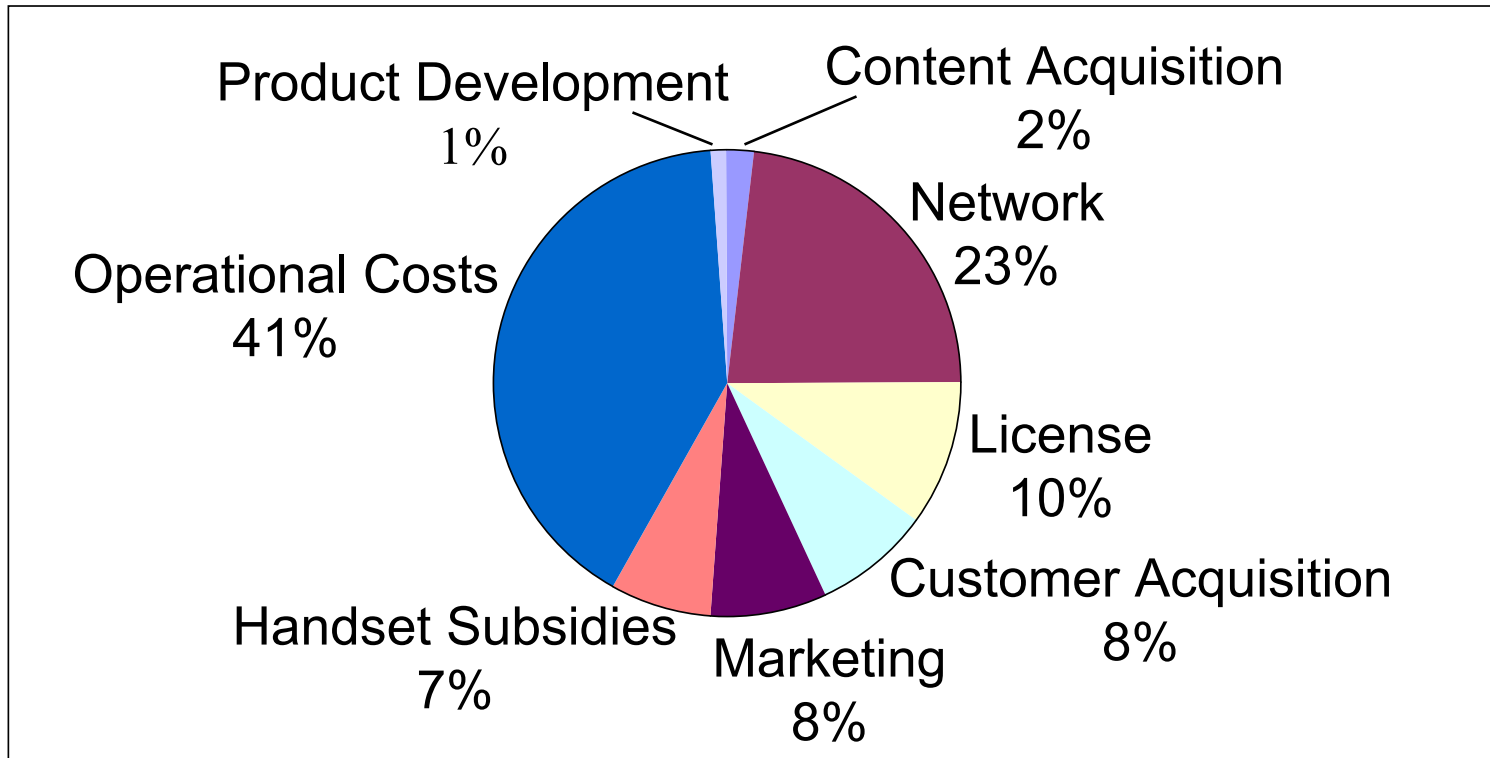


Source: Nokia, June 2002



# Operator cost breakdown

Case: 3G in Holland



In Finland, licence and handset subsidies are not relevant

Source: Delft University of Technology, 2001



# Financial figures

## Case: Elisa Mobile

### Elisa Mobile's Key Figures

Elisa Mobile's key figures, EURm	Q3/03	Q3/02	%	2002
Revenue	195	188	3 %	739
Clean EBITDA	58	50	-17 %	194
Clean EBITDA-%	30 %	27 %		26 %
Leasing adj. EBITDA	64	57	12 %	229
Leasing adj. EBITDA-%	33 %	31 %		31 %
CAPEX	22	16	42 %	145
CAPEX excl. network buy-backs	19	10	87 %	96
Oper CAPEX / sales	10 %	6 %		13 %
No. of Subscriptions in Finland *	1 374 847	1 301 621	6 %	1 342 417
ARPU, EUR **	42,5	43,0	-1 %	42,2
Churn **	24,2 %	14,0 %		15,7 %
Minutes of use, million *	598	521	15 %	2 087
Minutes of use / subs / month **	151	139	9 %	136
No. of SMS, million *	111	100	11 %	422
No. of SMS / subs / month **	28	27	5 %	27
Value added services / revenue	12 %	13 %		12 %

\* Network operator

\*\* Service operator







# How do new services evolve?

”Maslow hierarchy” of needs for operator services

1. Coverage
2. Capacity
3. Quality
4. Features

This guideline characterizes the evolution of both Internet and cellular services