



# Financial Efficiency of Communications Providers

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- Cost Structures – Where is the challenge – Front, Back - Opex/Capex?
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- Would a shared, neutrally owned network, produce better returns for some?



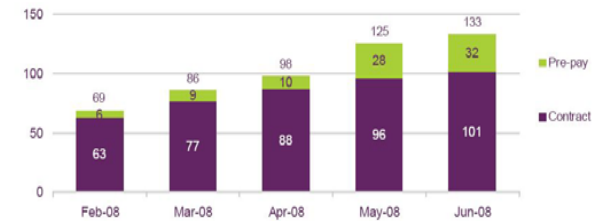
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# Customer Trends

## “I want it all, everywhere, mobile and quick and I don't want to pay too much”

- 2 out of 5 best sellers are PDAs or Smartphones
- 2007- 1m dongles in the UK, now adding 100k a month
- Savvy young users with multiple sims and dongles
- Research – users paying \$60US now, wont pay > \$90US for 100 x bandwidth
- 60% will pay 5€ for Mobile TV – only 5% more that 10€
- Aggressive “Challengers” – “all you can eat” packages
  - Least to lose – lightly loaded network
  - Low priced 1Mb/s, 5 gig, then shaped download
  - Next step – bring your voice for “not very much”
  - Targeting young demographic – will they ever want a fixed line?
- Is focus shifting from coverage to bandwidth?
  - 10% of customers subscribe to data plans - 20% use - going to 50+%?
  - First signs of churn - poor bandwidth

Figure 2.9 New mobile broadband connections



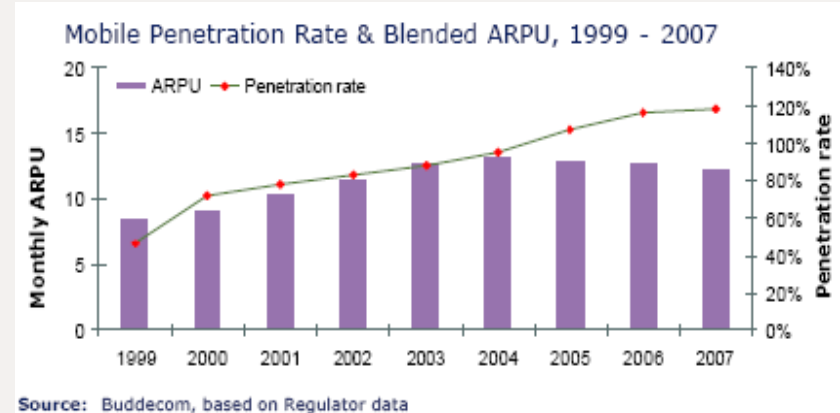
Source: GfK retail data (consumer channels only)  
Note: Mobile broadband defined as internet access on a PC either through a mobile dongle (an external device which plugs into the USB slot), or a 3G card (a wireless modem with GPRS/UMTS/HSDPA technology)



## Falling ARPUs, increasing volume related costs, pressure to drive profits

### → Mature Markets

- Falling ARPUs (15% effective voice price drop 2008)
- Increasing Costs
- 'iPhone effect' AT&T – ten times data throughput
- Much of it video
- Pressure to capture data revenues
- What does a booming BBC I- player mean to mobile networks?
- Dilemma - capacity is not free
- Yankee Group:
  - SMS generates US\$313 a Megabyte, Voice, US\$0.71 and broadband data \$US .05 - .10
  - Current Mobile Internet revenue
  - US\$ 10BN – potential is US\$70BN

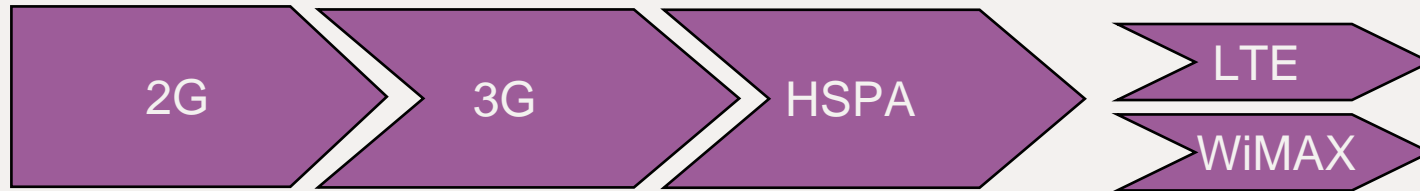




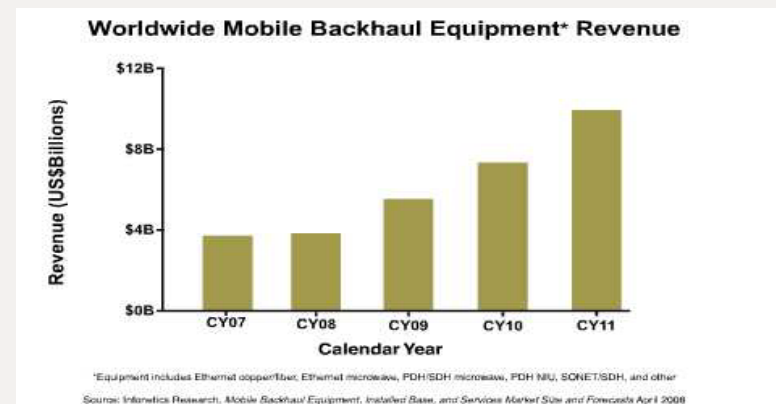
# Commercial Trends

## → Emerging Markets

- Growing Customer Base, Dwindling Values
- Coverage is still key
- Substantial Capex Requirements
- India - “220,000 new towers in the next three years (2007)”
- Customer acquisition headache – are we over investing in handsets



- 2G & 3G – Continue to provide 2G whilst expanding 3G coverage
- Can you share – base stations, antennas, civil works, backhaul?
- Backhaul – 2G Voice (2Mb/s) vs. 3G Data (100Mbps+)
- Moving more data – at faster speeds
- Wireless backhaul emerging
- Need installed, automated, flexibility



**Capacity – Past a certain point, a new wireless broadband customer on a loaded network has significant negative NPV**



# Financial Market Trends

## Mobile accounts for 60-70% of Telecom values - Share prices way off

VODA



TELEF



D.T.



F.T.



Global meltdown – Capital – Equity/Debt is more dilutive/more expensive – if you can get it!



# What are the trends telling us?

- Fantastic demand for mobilising the internet.
- Emerging world wants it too.
  - 1% INCR in Mobile Penetration equates to 4.7% in average p.c. income
  - 1% INCR in internet penetration equates to 10.5% average p.c. income (I.T.U)
- Capacity/Desire to pay is limited.
- Global meltdown, financial markets, drive cost and return on investment issues



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# Infrastructure and Retail Services

The mobile business can be divided into front and back-end services



<b>Base Stations/ Antenna</b>	<b>Towers</b>	<b>Back Haul Transmission</b>	<b>Switching</b>	<b>Customer care</b>	<b>Marketing products</b>	<b>Plans</b>	<b>Shops</b>	<b>Handsets</b>
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### Coverage, Capacity & Functionality

Operational Support Systems (OSS)

Network and Call

Data and Records

### Sales & Marketing

Business Support Systems (B.S.S)

Customer Data and Records

Care and Billing

Capex Costs

85%

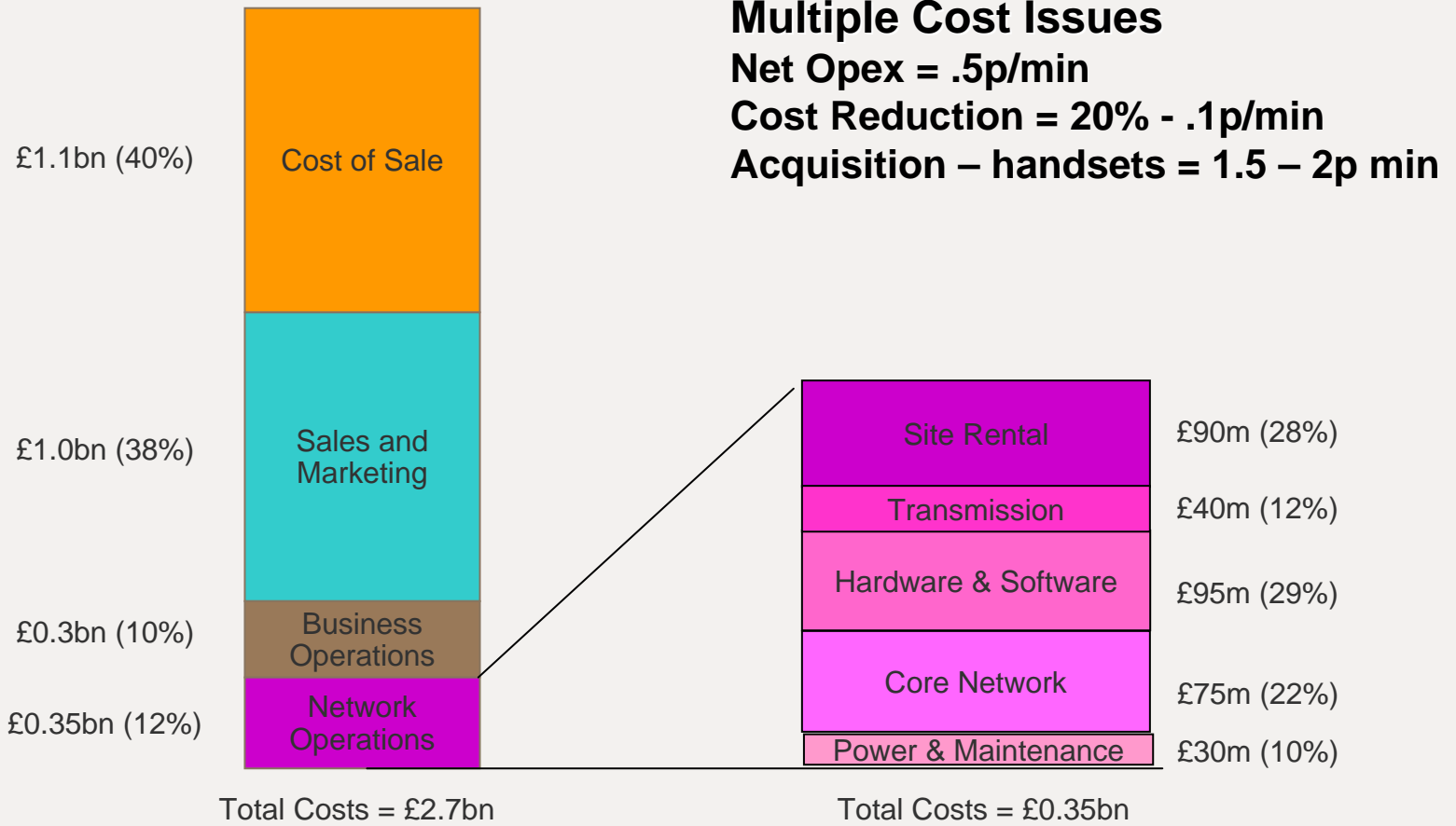
15%

Opex

17%

83%

**Infrastructure accounts for 85% of Capex but only 17% of Opex  
What do Shareholders want?**





# Infrastructure and Retail Services

## Different businesses – different characteristics

	Infrastructure	Retail Services
<b>Horizon</b>	Long-term planning	Short-term marketing and customer service, brand building
<b>Capital Intensity</b>	High	Low (Vodafone says targeting <10% CAPEX/REVENUE)
<b>Counterparties</b>	Government and blue-chip	Retail and Business
<b>Asset life</b>	Long-term 10+ Years	Shorter – Systems, Brands and evolving know how, Intellectual Property
<b>Risk</b>	Lower if secured by long term contracts	Higher
<b>Cost of Capital</b>	Lower	Higher

**Can you access cheaper capital to fund growth without losing “control”?  
e.g. Debt cheaper than equity?  
Infrastructure debt – 7x EBITDA – 60-70% E.V.?**



# The Attraction of Infrastructure

## Infrastructure as an asset class is attractive to many investors Often shared – neutral – do not compete with customers

- Macquarie – a leader in infrastructure - its investors are typically Pension Funds
- What do they look for in an investment?
- Assets with
  - Long operational life
  - Capital Intensive
  - Government & blue chip contracted partners
  - Predictable cash flows secured with long-term contracts
  - Ability to gear
  - Utility or regulated type WACC
  - Reasonable dividends
- Can a mobile company retain enough control via this approach?
- Example: Broadcast – The Digital Switch Over in UK - broadcasters e.g. the BBC,ITV, own no infrastructure





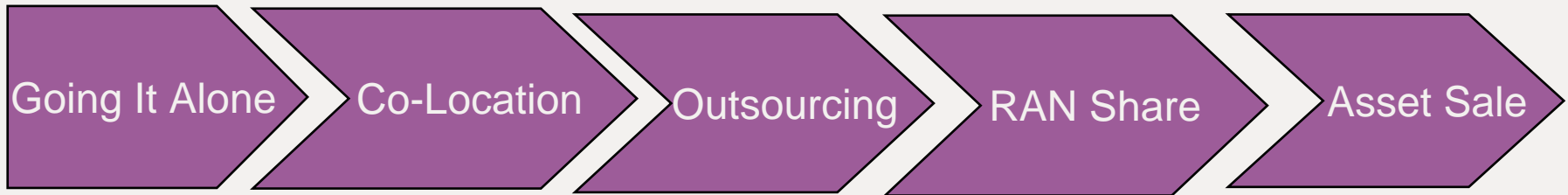
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# Network Sharing

## Do the trends push the MNOs towards new business models?

<u>Sites</u>	<u>Revenue</u>
10%	50%
30%	80%
50%	10%

**50% of towers generate only 10% of revenue  
Why not share in smaller towns etc?**



Increasing complexity/risk

Increasing benefits



**In theory, reduced capex, opex, but does enough control remain to guarantee strategic outcomes?**



# Why it's hard

- Strategic alignment?
- Different market shares
- Eng alignment
- Upgrades
- Technical changes
- Culture
- Co-operation
- Contributions
- Value
- Write-offs restructuring
- Transition
- Key people in TV
- Both 2G/3G or not
- Coverage – evaluation/competition
- Becoming an MVNO?
- Backhaul leased line, microwave
- Landlord acceptance
- Payback – 3yrs?
- Exchanging sensitive information

- **POOR TRACK RECORD OF SUCCESS**
- **WHAT DOES THE SIZE OF THE PRIZE NEED TO BE – 20-30%?**
- **ONLY SHARING CAN GET YOU THERE**



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# Company Alignment

→ Corp HQ – What do we care about?

- Shareholder
- Strategy
- Returns on Investment
- Allocation of resources/cash
- Funding/debt
- Dividends
- Share price

→ Country Manager?

- Customers
- Operational performance
- KPI's - Bonus
- $FCF = EBITDA - CAPEX$
- Don't want to sell network
- Why? EBITDA down?
- Lose ability to balance with CAPEX



# Financial Issues – OPEX v CAPEX

## Backhaul Example

- Microwave backhaul today:
  - 10,000 links @ n x 2Mbps – 2G legacy
  - Labour intensive, manual capacity expansion
  - Annual Spectrum Costs
  - Upgrade Cost – Say £70m
  - VERSUS
- 10 year lease of new build from infrastructure owner
  - OPEX – to reduce with more customers
  - CAPEX - none

**What do Shareholders want?  
Do they want to invest £70m on backhaul?**



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# Example

- RAN Sharing
  - Announced

T-Mobile



- One of the first major moves in the UK. Base stations from 18,000 to 13,000. Lower cost base. Each gets national coverage quicker
- Big plus is 3 has no 2G network
- Issues
  - Commercially complex
  - Tricky Transition to JV
  - Should you then free up some capital to invest in retail?
- Vodafone / Bharti in India with industrial tower company



# Mobile Network Upgrade Example

- 10 year old 2G Network, say 300 sites
- Upgrade to 3G, say 400 sites
- Capex £40m?
- Geared 50%, 8% cost of debt
- Neutral host
- 3 parties sharing = 50% Opex reduction?
- Acceptable return to asset owner



# Macquarie in the Changing Landscape

## Macquarie has a depth of international experience across the telecoms sector

- Arqiva - UK
  - 8,000 Towers (total 50K), 20,000 rooftops
    - Large rural portfolio, core operation
  - Broadcasting – all TV, radio in UK
  - Satellite – leading European operator
- Airwave – UK public safety business
- Broadcast Australia
- Global Tower Partners (US)





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# Summary

- Increasing costs and flat to falling ARPUs are placing increasing pressure on Mobile Operators to extract efficiency gains
- It is more difficult for operators in the UK to differentiate themselves through network coverage – bandwidth may become the key differential
- Will capacity be commoditised – services the key?
- Backhaul requirements are exploding
- The “front” and “back” end of the business have very different characteristics – if sharing, not differentiating on RAN, do you need to own it? A third party infrastructure fund may be best placed to provide a neutral host solution.



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# Summary

- Access network demands - present an opportunity for MNOs to reduce both Opex and Capex
- If want deepest cost cuts – sharing is necessary
- Network sharing can be complicated technically and commercially
- If sharing already significant financial benefit may come from sale
- Dependant on global financial markets returning to normal!