

Building Infrastructure for Convergence



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Introduction

- Executive Summary
- Market Dynamics
- Financial Indicators
- Strategies
- Options
- Conclusion

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2

Market Dynamics

- Fast Growing Market
- Large Geographical Spread
- ARPU Declining
- Opex Increasing

Infrastructure sharing is a must

Key Drivers

- **QOS**

- Capacity
- Coverage
- Uptime
- Transmission

- **ARPU**

- Lower Opex
- VAS

Market Challenges

- High Cost of Bandwidth
- No Wireline
- High Cost of Interconnect
- No Carriers Carrier
- No Fibre to the Access network

Wireless Broadband

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Key Success Factors

- Co-Location
- Fully Managed Services
- Transmission/Backhaul- Fiber to the tower
- Reduction in Bandwidth costs
- Reduction in Interconnect costs

Network Infrastructure Sharing

Valuation

The valuation of wireless Operator is:

Call Revenue (No. of Subscribers \times ARPU)

+ TERMN. Revenue (**# of Subscriber** \times **Term. Fee**)

- Customer Acquisition Costs
- OPEX

Are you focused on creating shareholders' Value ???

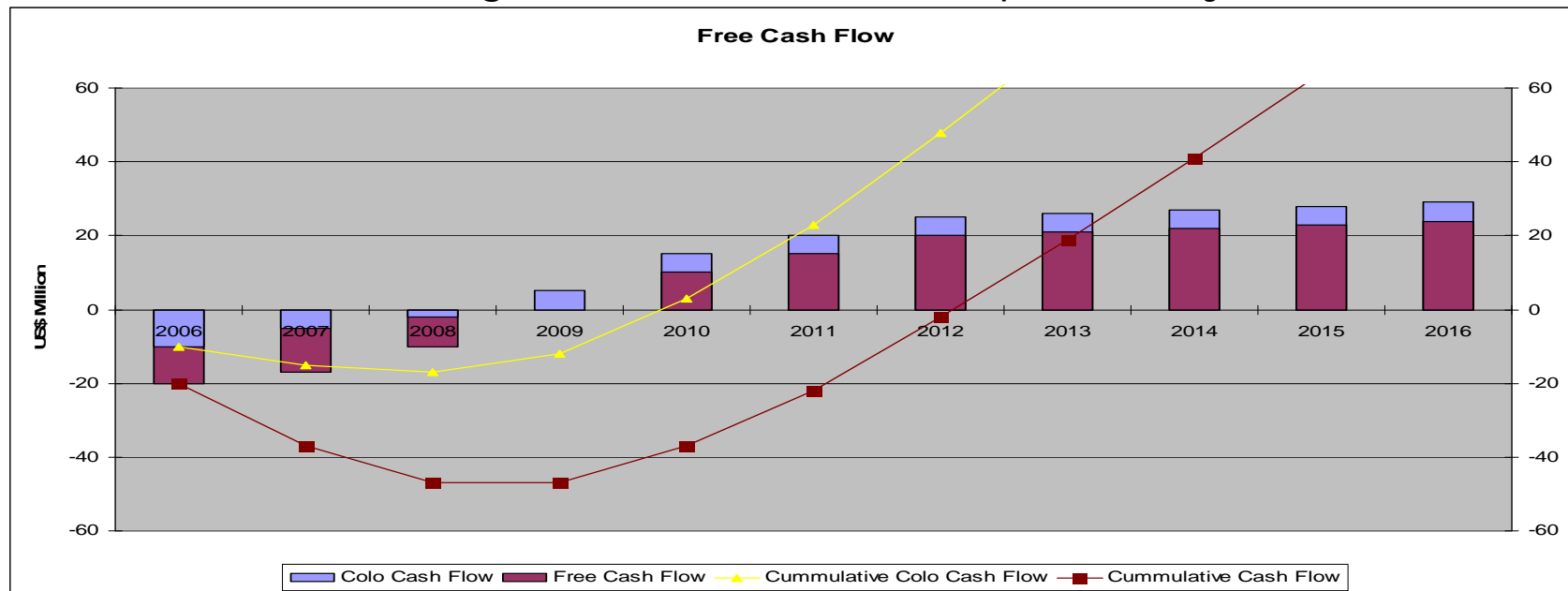
Roll Out Costs

- Up to 80% Capex can be in the RAN
- UP to 80% RAN Capex can be in the sites, Towers etc
- Essentially around 60%+ Capex is non-productive

Infrastructure sharing can help Increase Geographic Coverage quickly

Cash Flow and Peak Funding

- For most Operators, peak funding requirement is key factor
 - Different roll out strategies can have a large impact on capital needed but also on long term market share and profitability



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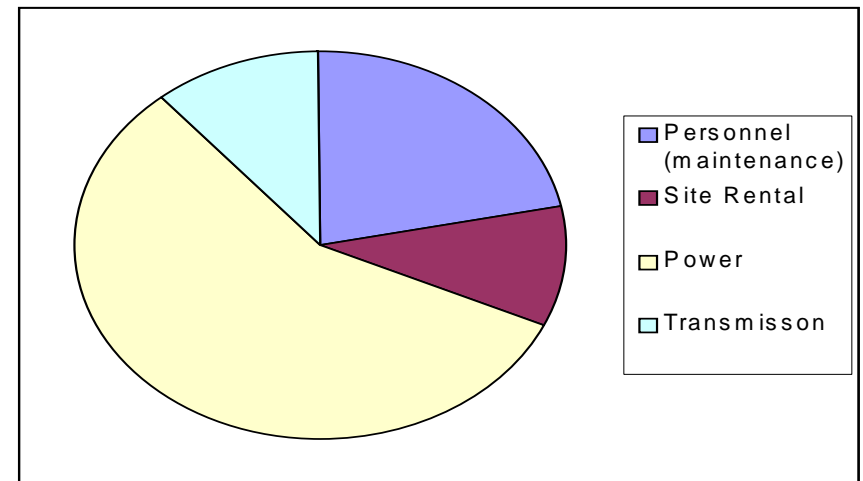
Operating Expenses

❑ Operating Expenses need to be defined carefully:

- Does Technical Opex include 'site' and 'operating' costs?
- How should manpower costs be allocated?
- How are Sales, Marketing and Administrative costs accounted for?
- Resulting Opex figure may vary from 5%- 30% of Capex or more

❑ 'Typical' breakdown of site operating expenses?

- Personnel (maintenance) 20%
- Site rental 10%
- Power 50+%
- Transmission 10%
- Vendor Support
- Depreciation
- Tax Benefit
- Opportunity Cost



OPEX Costs

- Diesel
- PHCN
- Security (24 x 7 security, 3 shifts)
- Maintenance
- Staff (Field staff)
- Insurance
- Miscellaneous - SG & A
- Site rent (Rent or Amortized monthly)

INDIRECT COST & OPPORTUNITY COST

- Amortization
- Capex -replacement items (batteries, gens etc)
- SG&A
- Interest (WACC)
- Missed Opportunities
- Churn - Due to poor QOS
- Vendor Support - Can be as high as 20% of your total Opex
- Backhaul - Can be as high as 10%

Common Forms of Infrastructure Sharing



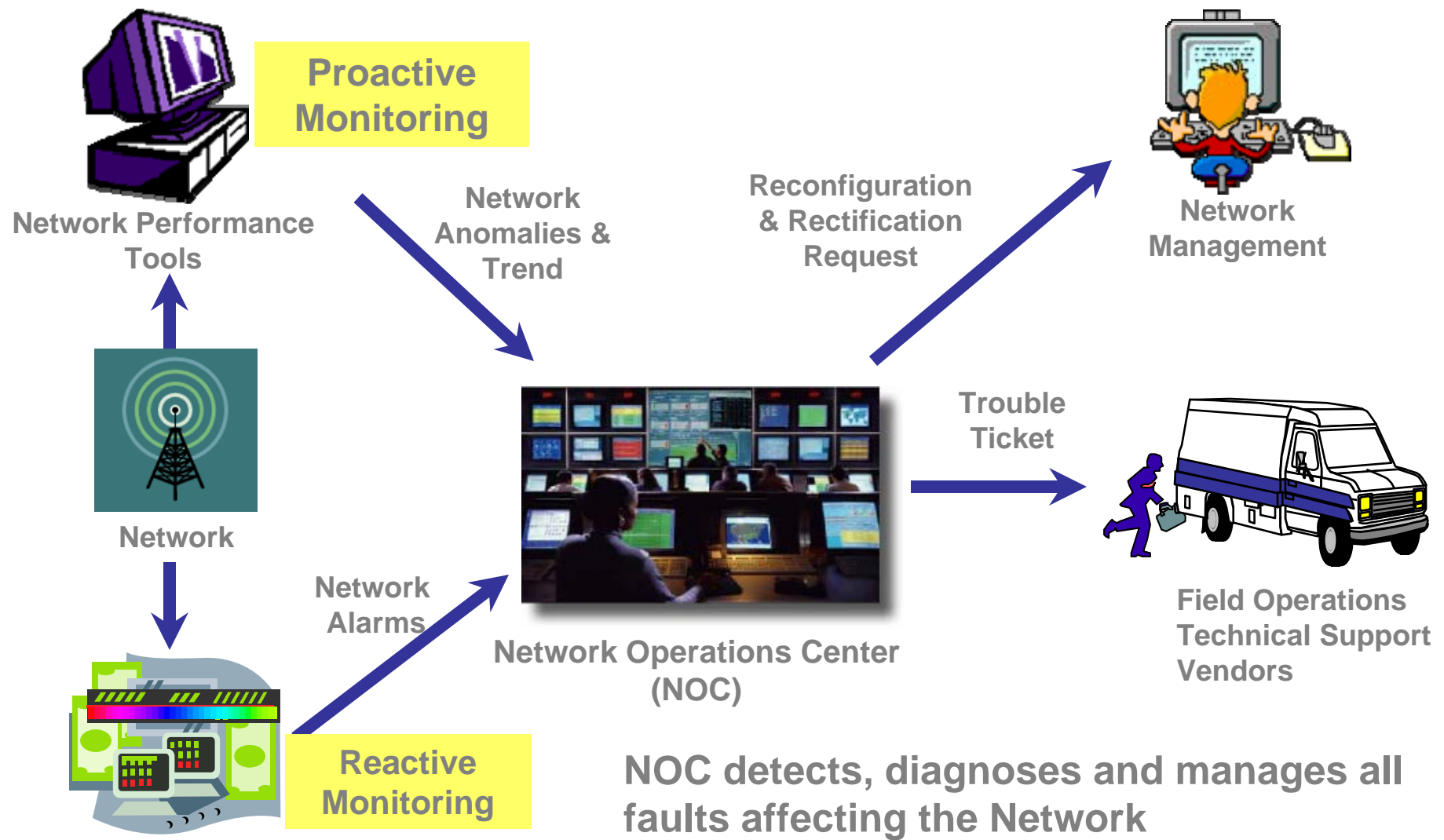
- **Common Shared Networks**

- Netco
- MVNO
- Geographical split
- National roaming agreement
- Site Swapping
- 3rd Party Co-location

Benefits

<u>Time to Market</u> <ul style="list-style-type: none">• Gain customers immediately• No hassle with Government approval• No hassle about legal ownership of site• Optimal site location	<u>Quality of Service</u> <ul style="list-style-type: none">• Full in house management• Guaranteed Uptime• Improved customer satisfaction• Increase in revenue per customer• Reduced Churn
<u>Capex Reduction</u> <ul style="list-style-type: none">➤ Convert Capex to Opex➤ Improves ROI per BTS➤ Improved Cash Flow➤ Environment friendly	<u>Opex Reduction</u> <ul style="list-style-type: none">➤ Reduced Customer acquisition costs➤ Serve Low ARPU customer profitably➤ Niche Services➤ Enter rural markets

Centralized Monitoring Solution for Network

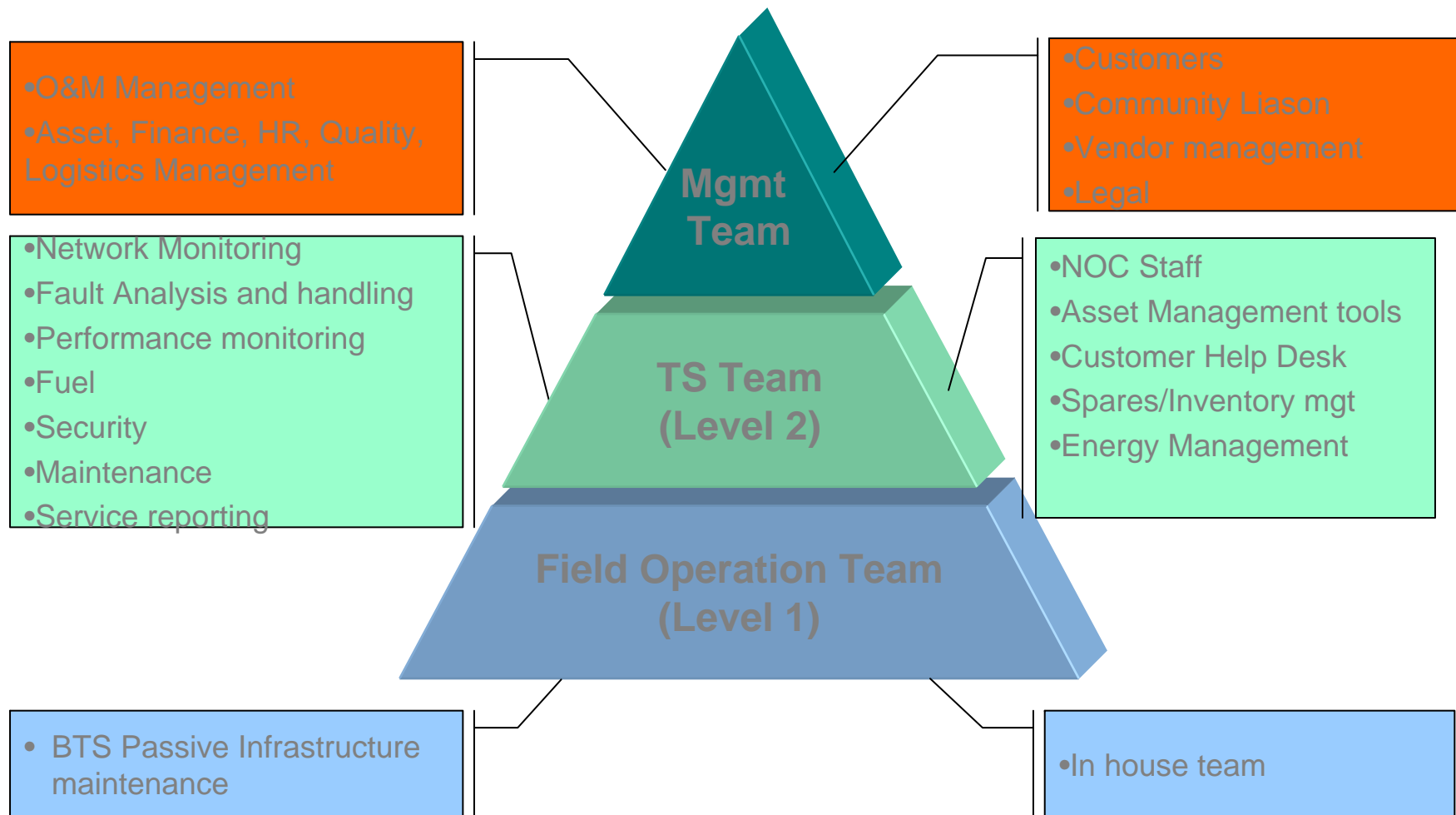


NOC detects, diagnoses and manages all faults affecting the Network

Element Manager
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Delivery Strategy



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Conclusion

- Convert Capex into Opex
- Expedite rollout
- QOS is critical
- Manage Opex
- Infrastructure Sharing is a must for survival