

INTERNAL ASSESSMENT

Should Teleysia Networks Pvt. Ltd. make an outright purchase of RF Kit or opt to lease the RF kit in order to increase production capacity?

gbs458 (002228 -0058)

Research Proposal

Research Question:

Should Telesia Networks Pvt. Ltd. make an outright purchase of RF Kit or opt to lease the RF Kit in order to increase production capacity?

Rationale:

TNPL¹ is a service provider which assists cellular network players in mapping telecom signals for network rollouts², and monitoring their signals for maintenance. It is among the top 10 companies in India in this space. Recently, due to the huge uptake in data, approximately 2,50,000 telecom sites are expected to be rolled out in the next 18 months, which is equivalent to approximately 35% of the capacity installed over the last 20 years³. This paper therefore investigates the most efficacious option for internal growth, whether to buy or lease the RF Kit to accommodate the changes in the telecom industry.

Theoretical Framework:

Financial and non-financial factors will be analysed to help evaluate which option is better for TNPL. I will focus on financial techniques such as:

Quantitative Tools	Qualitative Tools
Investment Appraisal	SWOT Analysis
Decision Trees	Force-Field Analysis

¹ Telesia Networks Pvt. Ltd.

² A *network rollout* is the introduction of new cellular networks or the extension in capacity of existing cellular network.

³ Appendix 2

Areas of syllabus covered:

- 1.3: Organisational Objectives
- 1.6: Growth and Evolution
- 1.7: Organisational Planning Tools
- 3.2: Costs and Revenue
- 3.8: Investment Appraisal

Methodology:

Primary Research –

- 1) Interview with Director and Executive Analyst to research the following:
 - Sources of fund
 - Trends in number of sales/contracts
 - Supplier Credit line
 - Competitor strategies
 - Details of Second-Hand Market for equipment
 - Calibration Costs
- 2) Call Conference: Ascom (Primary Vendor for leasing and purchasing kit) to research:
 - Costs of purchasing and leasing
 - Insurance and Repair Costs
 - Reason behind high rent costs
 - Average life of kit

Secondary Research –

- Research to find growth of telecom market in India
- Potential changes in Government regulation and funding
- Changes in sales of smartphones
- Possible changes in technolo

Potential difficulties and possible solutions:

Problems	Solution
Limited perspective as only TNPL representatives will be interviewed.	Reach out to third parties such as clients or suppliers
Lack of ability to source appropriate secondary data techniques suited to my capacity.	Usage of Internet websites to obtain lucid explanations. Refer to Paul Hoang's IB Business Management Textbook.
Information loss due to close ended questions; Respondents responses are restricted	Pose open ended questions allowing back and forth discussion between student and management hence increasing data amassed
Limited financial information due to the existence of a confidentiality agreement	Request for close estimates based on publically accessible data of the company from filings with the Registrar of companies

Action Plan:

Date	Task	Modification
02/05/2016	IA criteria introduced, hunt for suitable IA topic begins	
12/07/2016	Teleysia Networks idea discussed with teacher	
20/07/2016	Research proposal submitted	
23/07/2016	Research Proposal Feedback received	Research question modified.
17/08/2016	Conducted Interview with CEO and Executive Analyst	
1/09/2016	Conference Call with Ascom	
5/09/2016	Analysis complete	
8/09/2016	First Draft Submitted First Draft Feedback received	
9/09/2016	Modifications made according to Feedback	

Word Count:482

Table of Contents

Research Question:	2
Rationale:	2
Theoretical Framework:	2
Areas of syllabus covered:	3
Methodology:	3
Primary Research –	3
Secondary Research –	3
Potential difficulties and possible solutions:	4
Action Plan:	4
Executive Summary	6
Introduction	7
Methodology	8
Main Findings	9
Background Information of the Vendors	9
Equipment Purchase costs.....	9
Renting Costs for RF Kit.....	9
Revenue Stream per Kit	9
Credit Facility	9
Depreciation:	10
Analysis and Investigation	13
Depreciation-Analysis:	13
Force-field Analysis:.....	13
Force-field Summary	15
Cash flow Forecast	16
Investment Appraisal	17
Decision Tree:.....	19
Conclusion	20
Recommendations:	20
Bibliography	21
Websites:	21
Published Studies and Reports:.....	21
Books:	21
Appendix	22
<i>Appendix 1</i>	22
<i>Appendix 2</i>	23
<i>Appendix 3</i>	26
<i>Appendix 4</i>	27

Executive Summary

TNPL's management was uncertain regarding the most suitable capital intensive method of increasing the production capacity to meet the surge in demand while simultaneously increasing profitability. Therefore this report addresses the question: **'Should Teleysia Networks Pvt. Ltd. make an outright purchase of RF Kit or opt to lease the RF kit in order to increase production capacity?'**

Foremost, the research proposal comprises of the rationale, theoretical framework, research methods used and constraints faced while obtaining information. The introduction outlines prevalent information about TNPL's financial position and the market growth.

The analysis executed was surmised on findings obtained by interviews with Sangeeta Modi (TNPL CEO) and secondary research of the Telecom Market. These findings allowed a thorough analysis to be carried out involving both quantitative and qualitative techniques.

The conclusion examined the both expansion options, and suggested that purchasing the equipment outright is more suitable for TNPL as it lowers the operating costs enabling TNPL to provide a more competitive price and gain a greater market share. This conclusion was reached through the Investment Appraisal and the force-field analysis.

However, further evaluation of TNPL's financial position is necessary to conduct a more extensive financial analysis on either option.

Word Count: 197

Introduction

Teleysia-Networks-Pvt. Ltd. (TNPL), is a service provider that started operations in 2008⁴, it assists cellular-networks in mapping telecom signals for network-rollouts⁵, and monitoring signals for maintenance. It operates nationally across the states of Gujarat, Rajasthan, Maharashtra, Karnataka and Andhra Pradesh.

After a 4 year lull from 2010-2014 in Indian telecom, 2014 has seen a massive increase in demand among operators⁶. This is because of the fall in prices of 3Ghandsets which has caused an uptake in data and the Government's decision to increase availability of spectrum⁷. This is clearly evident in TNPL's 20% compound-annual-growth-rate (2014-15).⁸

Over 2,50,000 telecom towers are expected to be rolled out in the next 18 months, which is equivalent to approximately 35% of the capacity installed over the past 20 year because of the change in the Telecom market.⁹

In order to keep up with the growing market, TNPL must grow organically by increasing production capacity through investments. This report analyses the potential efficacy of all the options.

2 forms of increases in capital-expenditure that will be investigated:

1. Purchasing RF¹⁰ Kits
2. Lease RF Kits

To provide a comprehensive study, an analysis and evaluation of the risks and rewards of both options will be conducted enabling TNPL to answer whether they **should buy the RF Kit upfront or opt to lease the RF Kit in order to increase productive-capacity?**

⁴ <http://teleysia.com/>

⁵ <http://teleysia.com/>

⁶ <http://economictimes.indiatimes.com/tech/internet/hope-to-see-acceleration-of-3g4g-network-rollout-bharti-infratel/articleshow/54739978.cms>

⁷ <https://www.pwc.in/assets/pdfs/publications/2015/five-trends-to-watch-in-indian-telecom-2016.pdf>

⁸ Appendix 1

⁹ Appendix 2

¹⁰ RF – Radio Frequency

Methodology

Primary research includes a comprehensive interview with the Director of TNPL, Sangeeta Modi and her executive-analyst Chirag Sachdev.

By implementing a variety of open-ended, focused and developed questions, the interview was narrowed down to the internal and external factors which will potentially impact TNPL's preferred option: Buy vs Lease allowing suitable evaluation of Force-fields and SWOT-analysis. Financial approximations in addition to personal views on the strengths and weaknesses of both options were collected thereby allowing the use of several decision making techniques such as Investment Appraisal and Decisions-Trees.

Secondary research was acquired by scrutinizing online articles and studies of the Indian telecom market. Financial techniques were reviewed through referring to internet websites and the IB Business Management Textbook¹¹.

I had to verify all my collected data with a secondary source of data to ensure its reliability. Primary financial data gathered was based on approximate figures which were necessary to be factored in in order to generate the most suitable analysis. Primary data collected was backed up by secondary information.

While gathering data, a minor difficulty was encountered. Due to confidentiality-agreements, TNPL was restricted to share vital financial information; therefore, approximations were used as substitutes, leading to added verification of all estimates gathered.

¹¹ Paul Hoang – Business Management

Main Findings

Background Information of the Vendors

Ascom-TEMS and Anite-Telecoms are the only 2 vendors for the equipment nationally. Both of which are sister companies, therefore, the price-quotes are identical. Currently TNPL does business with Ascom-TEMS. Both the companies above are also the sole companies that offer rentals.

Equipment Purchase costs

Ascom-technologies provided a set quote for the RF Planning kit including all add-ons. The RF Kit cost ₹7,50,000. The upgrade license costs is ₹1,50,000.¹²

The Kit without upgrade can only be used for 2g&3g RF purposes, however, the Kit with upgrade can be used for 4g RF purposes also.¹³

Insurance costs for each kit were ₹10,000. The average maintenance costs per kit including repairs were ₹65,000.¹⁴

Renting Costs for RF Kit

The monthly rental for the RF-Kit is ₹38,500. This quote includes all indirect costs associated with the Kit. The annual rental is ₹4,62,000¹⁵

Revenue Stream per Kit

The annual revenue per kit with 100% capacity-utilization is ₹26,46,000.

Credit Facility

Short-term(1-year)business loan with Interest-rate 11%

¹² Appendix 2

¹³ Appendix 2

¹⁴ Appendix 2

¹⁵ Appendix 2

Depreciation:

This accounting method allocates the cost of tangible assets over its useful life¹⁶. The straight-line method has been used to calculate the depreciation of the RF-Kit without upgrade.

Straight-line¹⁷ depreciation formula:

$$\text{Annual depreciation} = \frac{\text{Purchase Cost}}{\text{Lifespan}}$$

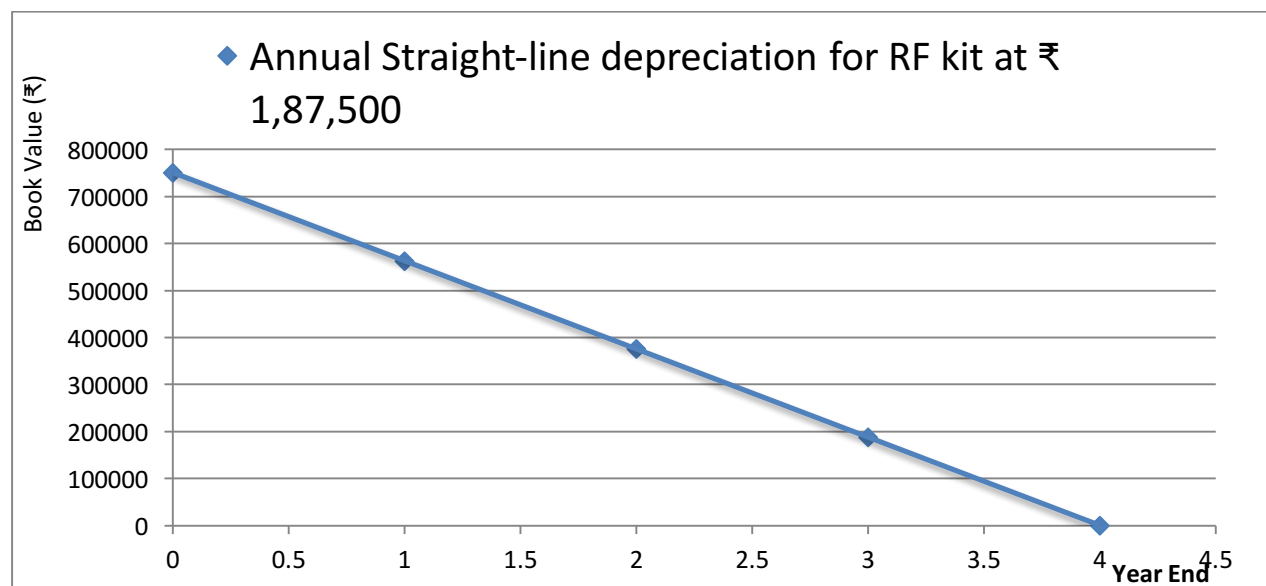
Calculating the annual depreciation of the RF Kit without upgrade:

$$\text{Annual depreciation} = \frac{₹7,50,000}{4 \text{ years}}$$

$$\text{Annual depreciation} = ₹1,87,500^{18}$$

Annual Straight-line depreciation of the RF-kit at ₹1,87,500.

Year End	Depreciation (₹)	Book Value (₹)
0	-	7,50,000
1	1,87,500	5,62,500
2	1,87,500	3,75,000
3	1,87,500	1,87,500
4	1,87,500	0



The graph above depicts the book value of the RF-Kit after 4 years. After 4 years, the depreciation-tax shield-benefit¹⁹ will have been minimized as the RF-Kit no longer has any value; meaning that because the RF-Kit cannot depreciate further after 4 years, it cannot reap any tax-benefits.

¹⁶ www.investopedia.com/terms/d/depreciation.asp

¹⁷ A **straight line** basis is a method of computing **depreciation** and amortization by dividing the difference between an asset's cost and its expected salvage value by the number of years it is expected to be used - www.investopedia.com/terms/s/straightlinebasis.asp

¹⁸ NOTE: Salvage value has not been incorporated into calculations

¹⁹ www.accountingtools.com/questions-and-answers/what-is-a-depreciation-tax-shield.html

Straight-line depreciation formula:

$$\text{Annual depreciation} = \frac{\text{Purchase Cost}}{\text{Lifespan}}$$

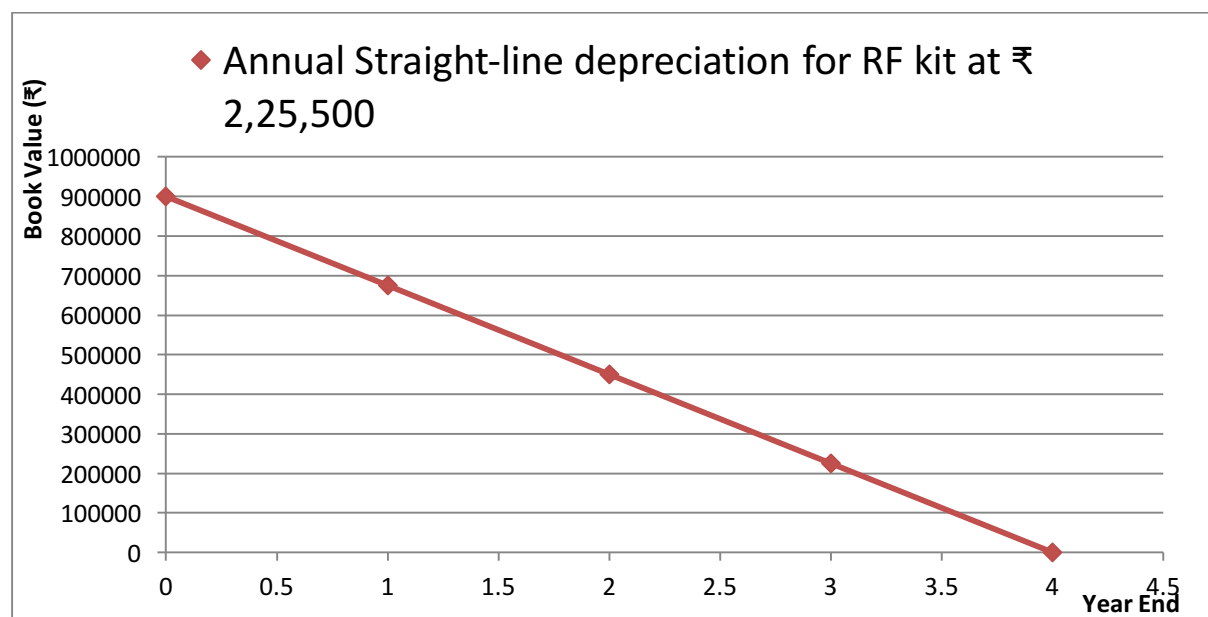
Calculating the annual depreciation of the RF Ki with upgrade:

$$\text{Annual depreciation} = \frac{\text{₹9,00,000}}{4 \text{ years}}$$

$$\text{Annual depreciation} = \text{₹2,25,000}^{20}$$

Annual Straight-line depreciation of the RF kit at ₹2,25,000.

Year End	Depreciation (₹)	Book Value (₹)
0	-	9,00,000
1	2,25,000	6,75,000
2	2,25,000	4,50,000
3	2,25,000	2,25,000
4	2,25,000	0



The graph above shows the book value of the RF-Kit with upgrade after 4 years. The depreciation tax shield benefit²¹ would be minimized here as well. Although the value of depreciation is higher here, purchasing RF-Kit with upgrade is better as 4g services require upgrade and 3G services are obsolete.

²⁰ NOTE: Salvage value has not been incorporated into calculations

²¹ www.accountingtools.com/questions-and-answers/what-is-a-depreciation-tax-shield.html

SWOT Analysis:

SWOT-analysis is a process that identifies the strengths, weaknesses, opportunities and threats of an organization.²²

Refer to the Appendix 4 (Pg.no 27) -

²² <http://www.investopedia.com/terms/s/swot.asp>

Analysis and Investigation

Qualitative and Quantitative tools have been employed and analysed to help ease the decision making processes.

Qualitative Analysis –

Depreciation-Analysis:

On examining the data, it's been concluded that the capital-outlay of buying with upgrade is higher than the cost without out upgrade for same useful lives. Since depreciation is a non-cash-deductible expense, it does not have a negative effect on cash-flow. Thus, the potential cash-flow for any buy decision could be higher than renting. In the case of rent, while rent is a deductible-expense, it also entails a cash-outflow to the lessee resulting in a decrease in overall cash-flow. The depreciation graphs depict how the book value of the kit consistently falls over its useful life while annual depreciation remains constant. This occurs because the straight-line-method of depreciation has been adopted factoring in the short life-span of the RF-kits as well as its non-existent salvage value.

Force-field Analysis:

Lewin's Force Field: Using Lewin's force field, the driving factors and restraining factors for both renting as well as buying are identified and attributed weights based on their significance. Once the matrix is completed, the total weights for both driving as well as restraining factors are tallied and compared. According to Lewin's force field analysis, a project or a plan should be accepting or rejected depending on whether the driving or restraining forces have a higher tally respectively.

NOTE: Since kits without upgrade are obsolete, the option to buy without upgrade isn't considered in the analysis henceforth.

Force-field Analysis: Renting or Buying the RF Kit

Note: The strength of the forces is on an ascending scale from 1 to 5

Driving-forces: (Forces for change)

Miscellaneous costs = 5

- No repair, insurance costs. No need for upgrade license.

Adaptability = 4

- TNPL can lease equipment as and when necessary in order to maximize capacity utilization and efficiency.

Capex Light = 3

- TNPL's cash outflow will be significantly low initially which will ease deterioration of gearing ratio.

Managerial behavior = 2

- Rent's immediate effect on P&L account forces TNPL to maintain prices in order to keep up high gross margin.

Total:14

Change:

Renting RF KIT

This diagram depicts that the driving forces (14) for renting the FR Kit are higher than the restraining forces (13) chiefly because with rent TNPL is at a position to alter capacity utilization exactly according to demand and thereby reduce allocative efficiency. However, the marginal difference is of only 1 point which is very low.

Restraining-forces: (Forces against change)

Inflexible pricing = 5

- TNPL managers will not be able to bargain prices with consumers due to low net margin

Unavailability = 3

- TNPL may not be able to rent equipment during demand surges as competitors may have already availed the rent option.

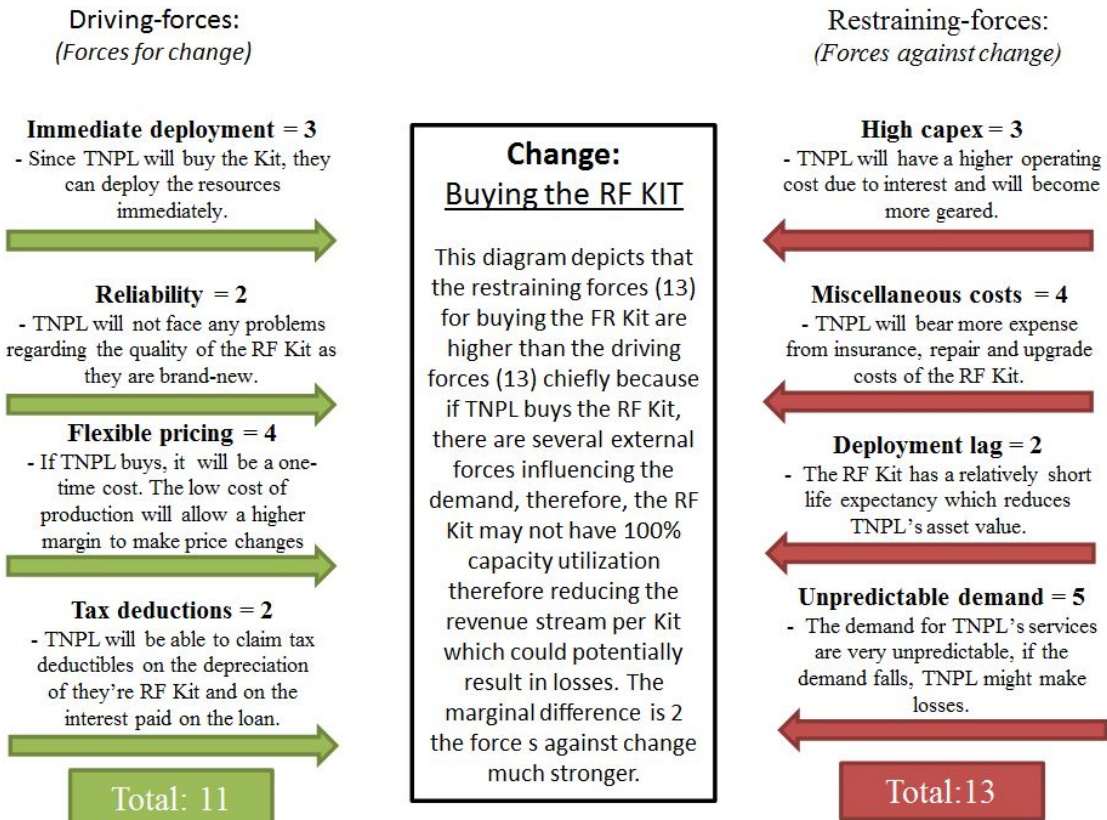
Deployment lag = 3

- TNPL managers will not be able to deploy resources in time to meet demand as the rent option may have a waiting period.

Equipment reliability = 2

- Equipment rented may not be up-to-mark as it could have been used several times prior by previous renters.

Total:13



Force-field Summary

After carrying out a force-field analysis on both options of rent and buy independently, the option for rent weighs more heavily on driving-factors than restraining-factors by a margin of one whereas in the case of the option to buy, the restraining factors carry more weight than driving factors by a margin of two. Factoring in that the Force Field Analysis relies heavily on subjective driving or restraining factors, a more detailed quantitative analysis such as investment appraisal and decision-tree is conducted to maintain objectivity.

Quantitative Analysis –

Cash flow Forecast

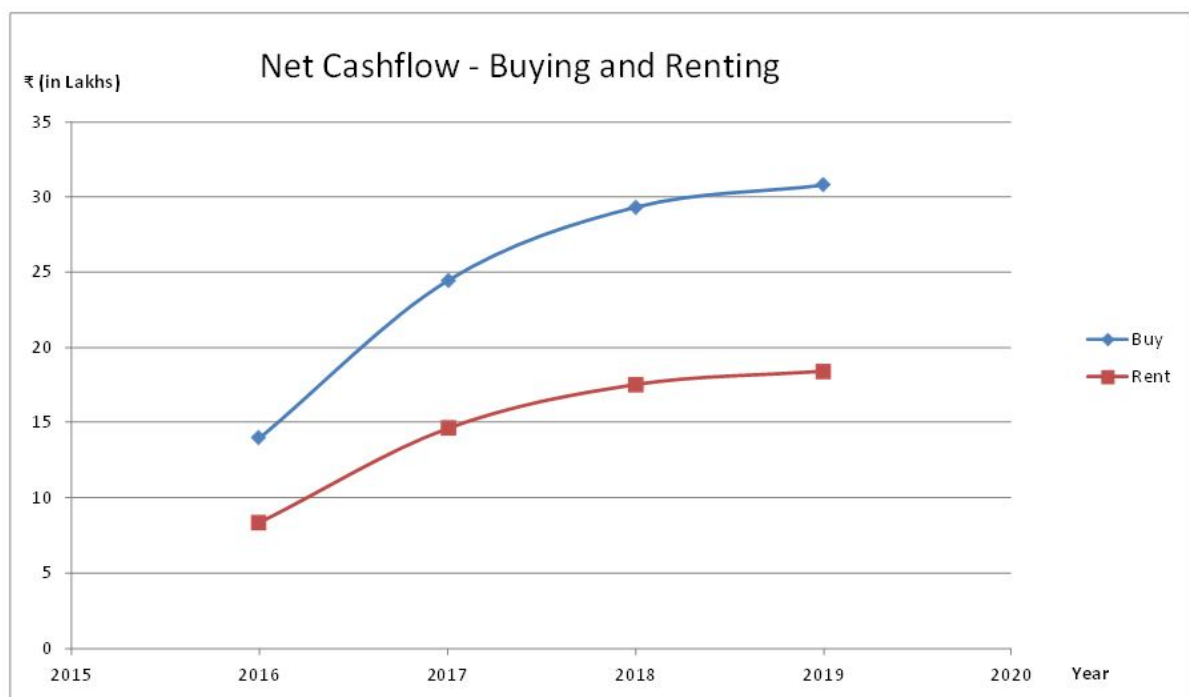
The expected cash flow over four years in the case of buy is:

Year	Cash flow (₹)
1 (2016)	13,96,000
2 (2017)	24,43,000
3 (2018)	29,32,000
4 (2019)	30,79,000

The expected cash flow over the same period for rent is as follows:

Year	Cash flow (₹)
1 (2016)	8,35,000
2 (2017)	14,61,000
3 (2018)	17,53,000
4 (2019)	18,41,000

The Graph below shows a comparison between the cash flow of both options.



Note: the above forecasts and graph fail to account for the time value of money.

Investment Appraisal

Investment-appraisal makes use of profit and cash-flow forecasts expected to arise from investment in a particular project and apply suitable techniques to identify the financial feasibility of an individual project, ideal assets to be purchased or financial options such as Renting or Buying.

Based on the interaction with company representatives and the data provided by them, the following table shows the calculation of cash-flow used for the purpose of investment-appraisal. The investment-appraisal method of Net-Present-Value has been used because other methods would require a cash-outflow apart from multiple year cash-inflows which is absent in the decision to rent,.

	Buy (without upgrade)	Buy (without upgrade)	Rent
RF Kit costs	7,50,000	7,50,000	-
Upgrade license cost		1,50,000	-
Kit cost with upgrade		9,00,000	-
Useful life (years)	4	4	4
Revenue (per stream)	26,46,000	26,46,000	26,46,000
Gross margin	40%	40%	40%
Gross profit	10,58,000	10,58,000	10,58,000
Rent (per annum)	-	-	4,62,000
Repair & insurance costs	75,000	75,000	
Interest (11% per annum)	83,000	83,000	-
Depreciation	1,87,500	2,25,500	-
PBT	7,13,000	6,76,000	5,96,000
PBT Margin	27,000	26,000	23,000
PAT	4,99,000	4,73,000	4,17,000
Cash flow	6,87,000	6,98,000	4,17,000

Based on the interest-rate for borrowing provided by the company(11% p.a.),and assumptions based on percentage rise in cash flows year after year, the Net Present Value for the option to buy is calculated below:-

Year	Discount Factor	Cash flow	Discounted Cash Flow
1 (2016)	0.90	13,96,000	12,58,000
2 (2017)	0.81	24,43,000	19,83,000
3 (2018)	0.73	29,32,000	21,44,000
4 (2019)	0.66	30,79,000	20,28,000
			74,13,000
		Investment	9,00,000
		Net Present Value	65,13,000

Note: $DCF = DF \times \text{Cash flow}$

The discount factors in turn are computed based on the formula:

$$\text{Discount factor} = \frac{1}{(1 + r)^n}$$

$r = \text{discount rate (11\%)}$

$n = \text{number of years}$

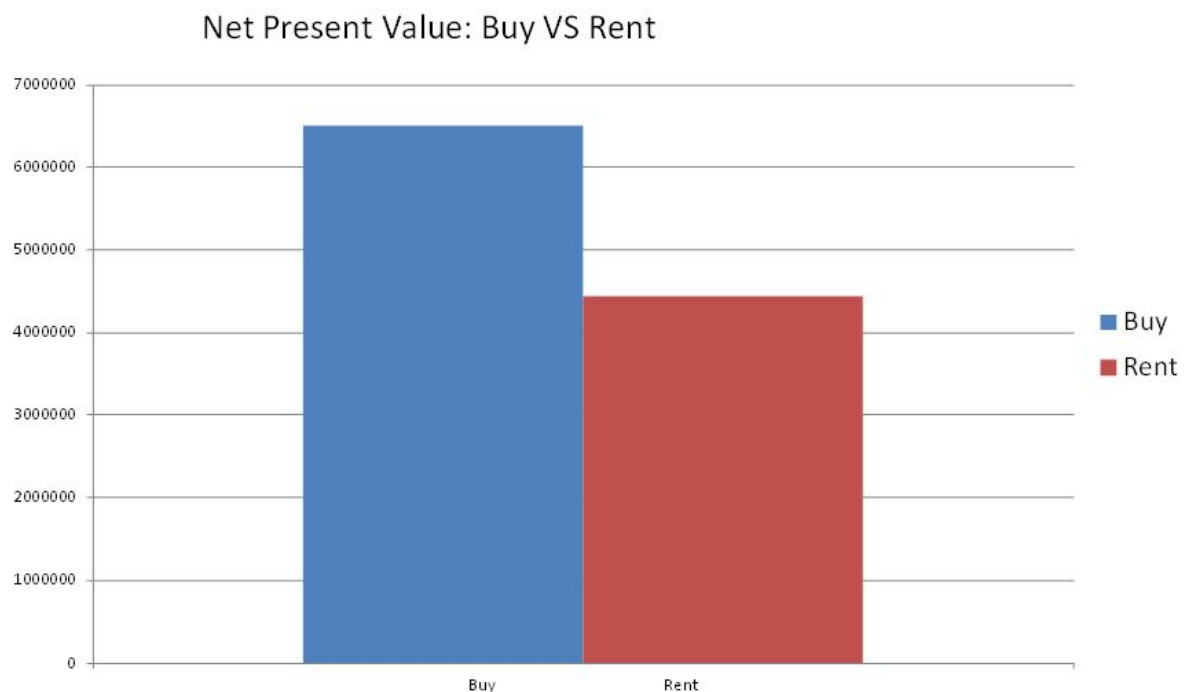
For example:

$$\therefore 0.9 \times 13,96,000 = 12,58,000$$

The same process is repeated in all rows from 1 to 4 years in all tables.

The NPV for the option to rent is calculated below. Since renting does not entail a cash-outflow, the NPV for this option (calculated as the difference between the discounted cash inflows and discounted cash outflows) will be the same as the sum of its discounted cash inflows.

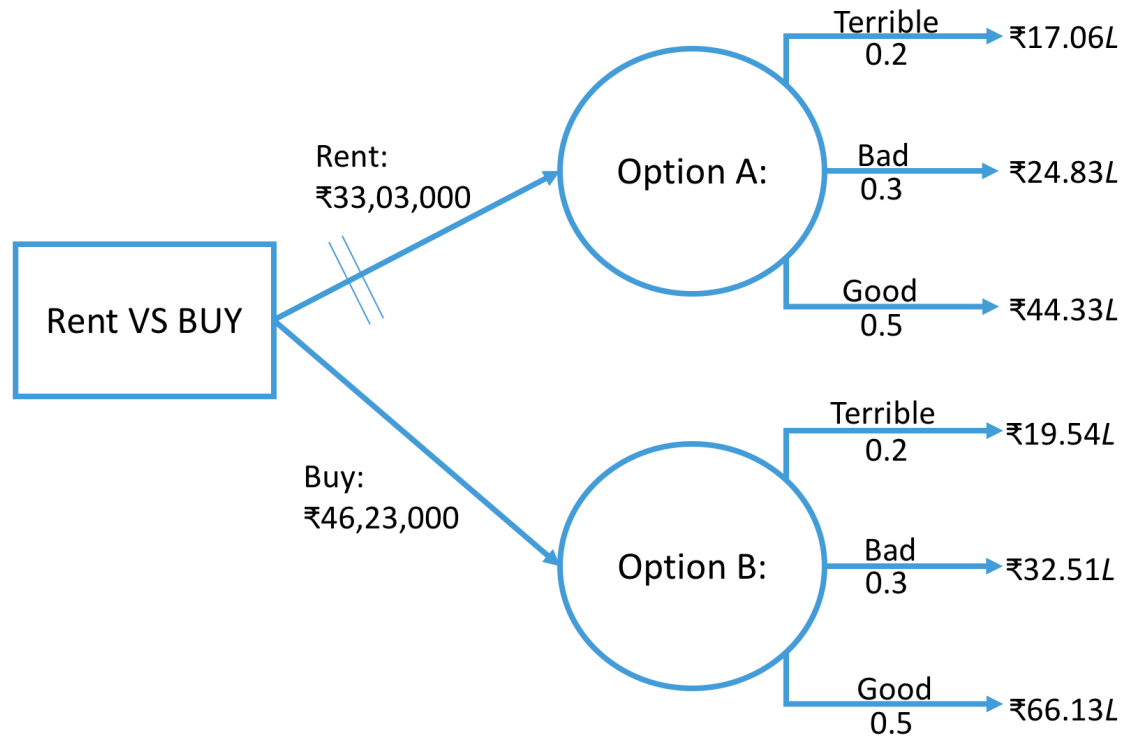
Year	Discount Factor	Cash flow	Discounted Cash Flow
1 (2016)	0.90	8,35,000	7,52,000
2 (2017)	0.81	14,61,000	11,86,000
3 (2018)	0.73	17,53,000	12,82,000
4 (2019)	0.66	18,41,000	12,13,000
			44,33,000
		Investment	0
		Net present Value	44,33,000



Since the NPV of 'Buy' is higher than 'Rent' the company is advised to opt for the purchase of RF-kits rather than renting.

Decision Tree:

Decision trees are quantitative decision-making tools. It is a diagrammatic-representation of the different options available to a business and their probable outcomes.



Calculations:
<p><i>Operating Leasing of the RF Kit:</i> $(0.2 \times 17,06,00) + (0.3 \times 24,83,00) + (0.5 \times 44,33,000) = ₹33,03,000$</p>
<p><i>Outright purchase of RF Kit:</i> $(0.2 \times 19,54,00) + (0.3 \times 32,51,00) + (0.5 \times 66,13,000) = ₹46,23,000$</p>

The final cash-flow earned for both options is subject to change depending on the overall performance of the economy as well as the situation within the industry.

Therefore to account for varying conditions within the telecom market, three scenarios identified as “Good”, “Bad” and “Terrible” were allotted weights of 50%, 30% and 20% respectively according to conclusions derived from the SWOT Analysis²³.

The differences in the NPV’s for all three situations arises based on different estimates of how Cash-flows are likely change in future years.

The sum of the products between the probability of various economic situations and the cash flow likely to arise in such situations for both rent and buy are calculated and compared above. Since the option to Buy has a final value of ₹46,23,000 compared to rent at ₹33,03,000 based on the decision-tree analysis, the company is advised to Purchase the RF-kits rather than renting.

²³ Appendix 4

Conclusion

TNPL is in a strong financial position with a CAGR of 20%²⁴, although this is low compared to competitors, TNPL is receiving steady capital injections at 11% interest therefore, making internal growth feasible.

The dilemma facing TNPL is choosing the more suitable option: operating lease or outright purchase. Since the demand of the RF market is a shadow of the telecom market, demand for TNPL's services is reflected by the number of network rollouts by service providers.

India's shift from 3g to 4g data has caused 4g network rollouts to increase for a short period of time spanning from 3 to 4 years. TNPL must increase their production capacity by either buying or renting 4g compatible RF Kits. Furthermore this shift has made TNPL's 3g services obsolete therefore all kits they purchase must be with the 4g upgrade.

The SWOT analysis and the Force-field analysis suggest that renting is the more suitable option. The Force-field analysis depicted that buying has net restraining forces while renting has net driving forces. This was mainly because, data from the SWOT analysis suggested that market was unpredictable as network rollouts were only guaranteed for the first year (2016-17). Therefore, a bulk outright purchase of RF Kits could become a "dead-investment" if sales quantity for TNPL began to fall after the first year. Rent would be the less risky option, as quantity rented could easily be changed according to demand therefore improving efficiency.

Several factors are influencing the demand for TNPL's services making it difficult to forecast sales, the SWOT analysis shows the various factors affecting the demand.

Based on these factors the probabilities of various potential outcomes were assigned in the decision tree. The decision tree suggested that the expected net cash flow from Buying the RF kit is 40% higher than when renting the kit for the next four years. Similarly, the net present value calculated also indicated a 47% higher NPV after 4 years if the buying option is chosen.

Recommendations:

Since, the RF Market is growing at a rapid rate it is necessary for TNPL to take risks in order to remain competitive. The quantitative analysis depicts the how the margin of return on buying clearly exceeds renting thus, making buying the more suitable option.

In order to minimize risks and maintain satisfied consumers, TNPL can purchase 80% of RF kits necessary to meet demand in the first year and then book the other 20% of demand by rent ASAP so they are reserved regardless of the surge in demand.

²⁴ Appendix 1

Bibliography

Websites:

- "Investopedia - Sharper Insight. Smarter Investing." Investopedia. N.p., n.d. Web. Aug.-Sept. 2016. <http://www.investopedia.com/>
- Telesia Networks. N.p., n.d. Web. Aug.-Sept. 2016. <http://telesia.com/>

Published Studies and Reports:

- "COAI Annual Report 2013-14." COAI Annual Report 2013-14 | Cellular Operators Association of India. N.p., n.d. Web. 10 Aug. 2016.
- "Press Releases." Press Releases | Department of Telecommunications, MoC. N.p., n.d. Web. 11 Sep. 2016.
- PTI. "Hope to See Acceleration of 3G,4G Network Rollout: Bharti Infratel." EconomicTimes. Bennett, Coleman & Co. Ltd., 7 Oct. 2016. Web. 9 Oct. 2016. <http://economictimes.indiatimes.com/tech/internet/hope-to-see-acceleration-of-3g4g-network-rollout-bharti-infratel/articleshow/54739978.cms>.
- PwC View. Five Trends to Watch in Indian Telecom in 2016. Publication. N.p.: PwC, 2015. Print. <https://www.pwc.in/assets/pdfs/publications/2015/five-trends-to-watch-in-indian-telecom-2016.pdf>
- "Study Paper - Document: Telecom Regulatory Authority of India." Study Paper - Document: Telecom Regulatory Authority of India. N.p., n.d. Web. 10 Aug. 2016.

Books:

- Hoang, Paul. Business & Management. Melton, Vic.: IBID, 2007. Print.
- Stimpson, Peter, and Alex Smith. Business Management for the IB Diploma. Cambridge: Cambridge UP, 2015. Print.

Appendix

Appendix 1

TNPL's Market position (2015)

Name	FY15 Revenue	FY15 EBITDA	2 year Revenue CAGR	Comments
Metro Telworks Private Limited	Rs 120 crs (Domestic revenue from India is ~30 crs)	NA	NA	PE funded company - Zephyr Peacock invested Rs 22.5 Crs in FY 03/2011 for 20% stake. Geographies: Southeast Asia, Africa, South America and MENA Of FY15 revenue, ~Rs 30 crs is domestic while the remaining is international Offices: Noida, New Delhi, Bangalore. International locations include Africa and Indonesia
Link Quest Telecom Ltd	Rs 83.6 crs (FY14) Includes revenue from staffing to other industries	Rs 6.1 crs (FY14)	77%	Started in 2001 and headquartered in Noida. Business comprises mainly of staffing services to OEMs for RF planning. Promoters run a parallel business in pharma. Geographies: India, Philippines, Taiwan, South Korea, Australia, Western Europe and Southern Europe Team: 2000+ employees across offices in Delhi, Mumbai and Kolkatta
Cellcomm Solutions Limited	Rs 41.1 crs (FY14)	Rs 4.3 crs (FY14)	51%	Majorly, RF planning and optimisation services to solve connectivity issues at airports, tunnels and internationally. Geographies: New Delhi, Kolkata, Mumbai, Hyderabad and Chennai. International locations include Hongkong, Middle East, Bangladesh, Africa. Offices: New Delhi, Kolkatta, Mumbai, Hyderabad and Chennai.
Teleysia Networks Private Limited	Rs 37 crs	Rs 9 crs	20%	Founded by Late Sanjay Gohel Geographies: Gujarat, Rajasthan, Maharashtra, Karnataka and AP
Integrated Wireless Solution Private Limited	Rs 28.8 crs (FY14)	Rs 2.2 crs (FY14)	-6%	Started in 2004, by Rupinder Oberoi, who has a parallel business of exporting spices to Africa. Geographies: Noida, Delhi, Bangalore. International locations include Africa
Vedang Cellular Services Private Limited	Rs 24.1 crs (FY14)	Rs 3.4 crs (FY14)	79%	Run by three promoters who were ex- Nokia. Promoters have another business in the defence industry. 40% of the business is from Nokia. Also servicing Samsung for the Reliance JIO contract. Operates primarily on the man-month model (cost plus) model. Geographies: Maharashtra and Karnataka
Mobile Comm Technologies India Private Limited	Rs 16.0 crs	Rs 1 cr	-12%	Subsidiary of Mobilecomm technologies, US based RF planning company. High quality management team and has also invested in developing their own tools. Low profitability since company has also invested in developing software products. Bulk of revenue is from Huawei. Geographies: International locations in Southeast Asia, Middle east and Africa along with some circles in India
HTIS telecom	Rs 16.0 crs (FY14)	Rs 0.2 crs (FY14)	NA	Launched as a private company in 2012. Was previously know as Horizon Telecom Infrastructure services.
Innovis Telecom	Rs 13.6 crs (FY14)	Rs 0.8 crs (FY14)	-12%	PE funded company - Nokia Growth Partners, Nokia's PE arm, invested Rs 4.5 crs in FY 11, for 26% stake Geographies: Hyderabad and Delhi International locations include Bangladesh, Nepal, UAE, South Africa, Kenya, USA
Pyro Networks Private Limited	Rs 9.84 crs (FY14)	Rs 1.19 crs (FY14)	105%	Founded in 1999 and headquartered in Mumbai. Besides telecom consultancy, also present in other streams such as financial services (mobile payments and mobile wallet) and data analytics. Geographies: Haryana. International locations include APAC, Middle East and Africa.

Appendix 2

Interview Transcripts

Interview with Sangeeta Modi

1) Could you please tell me the history of TNPL and its aim?

Telesia Networks started operations in April 2008. It began as an innovative and efficient solution providing telecom consultancy company with a mission to become the most preferred company for our customers and employees.

2) What problem are you facing?

The telecom market is booming, and is seeing a growth rate of roughly 16% due to several factors. However, TNPL has not been growing fast enough as opposed to competitors and cannot keep up with the market growth rate as well.

3) So why has TNPL not been able to grow as fast?

I believe it mainly because of are lower production capacity, we have not yet found an effective way of meeting the demand while maintaining higher profit margins.

4) If you needed to expand, how would you describe your credit line, both from the supplier and the banks?

TNPL has an outstanding credit line, we have talked to bank managers who we've worked with in the past and they all seeming extremely willing to lend us capital at any rate between 10.5% to 12% per annum. However, we have never purchased equipment from Ascom on credit ,therefore, I assume there will be no problem there.

5) Tell me more about Ascom?

Ascom is our primary vendor for RF Kits, which is the fundamental equipment required for RF optimization and planning. They have a monopoly in India as the other company Anite is Ascom's sister company.

6) Will it be possible for you to share your Balance sheet and Profit and Loss Account?

I'm sorry. We cannot share this information with you because we have a confidentiality agreement that restricts us from sharing exact figures of TNPL in detail. However, I will inform Chirag, he will be able to provide you as many approximations you would need.

Interview with Chirag Sachdev

1) Why has the Telecom market boomed?

There are three main reasons. First is the fall in prices of 3g handsets, second is the increased spectrum availability due to some recent change in legislation and finally the increase of competitors offering cellular data.

2) How does this impact TNPL?

Because we are in a shadow market of the Telecom industry, any growth seen there is bound to be reflected here. Because there has been such a boom in demand for cellular service, it seems that networks need to rollout more satellites and telecom towers. That is when TNPL comes into the picture. The process of rolling out networks is outsourced by the cellular network player to their equipment vendors. There are 5 major equipment manufacturers/vendors (OEMs), namely Nokia, Ericson, ZTE, Huawei and Samsung.

These OEMs in turn outsource the installation, network planning and maintenance testing to companies such as TNPL. Bulk of TNPL's clients are OEMs, though certain services are rendered directly by network operators, our clients like I said are mostly OEMs

3) Please tell me how extensively the market has changed?

We are expecting 250000 towers to rollout soon, this would comprise of roughly 30% to 50% of all rollouts since the 1990's.

4) Moving forward, what are the options of growing capitally?

Well there are two ways to increase the quantity of services we can produce. We have no problem with employees because they are below the capacity utilization, however, we do have a shortage of equipment. If we decide to increase the number of RF Kits, we can either purchase them outright or rent them.

5) Is there any difference in the RF Kits, higher or lower models?

Well, all the RF kits are practically the same however, while purchasing the RF kit, you can either add an upgrade which will enable RF analysis of 4g as well. Without the upgrade, you can only analyse RF of 2g and 3g data which don't have any demand anymore.

6) Could you please tell me the miscellaneous costs per RF Kit and how much revenue does each RF Kit bring?

Insurance costs for each kit is ₹10,000, and maintenance costs per kit including repairs are normally ₹65,000. ²⁵ Finally, each kit brings in a revenue stream of ₹26,46,000 if it works at 100% capacity-utilization.

²⁵ Appendix 2

Conference call with ASCOM

1) Hello, Could you please share your quotes for a new RF Kit?

An RF kit will cost you ₹7,50,000 outright, but an Upgraded kit will cost you ₹9,00,000, that's ₹1,50,000 additionally.

2) Can you please tell me if you lend RF kits?

We do lend RF Kits at monthly rental of ₹38,500 and an annual rent of ₹4,62,000. Also we are the only suppliers who provide rentals besides Anite, but Ascom and Anite are part of the same company and our rates are the same.

3) What is the average life expectancy of these RF Kits?

Both RF kits have a life expectancy of approximately 4 years depending on usage.

4) Is there a second-hand market for RF-Kits

Well, there is no second-hand market for RF-Kits.

PwC view

Five trends to watch in Indian telecom in 2016



Indian telecom in 2016 **Our forecast of key trends**

#01

Consolidation towards 5+1 network market: Consolidation driven by expensive spectrum and depleting voice revenue share will result in the market consolidating to five private networks and one public sector player market by the end of 2016. The consolidation can be an outright MTS-Reliance like merger or via spectrum trading/sharing deals like Idea-Videocon announced recently.

#02

Network experience to prevail over customer service experience as selection criteria: In 2016, telcos will continue to remain focussed on providing a basic high-speed network experience and customers will therefore choose accordingly. We do not expect differentiated customer service experience to be a dominant criterion for operator selection by customers.

#03

Fulcrum of data monetisation to shift away from telcos: Building on our 2015 prediction of unconventional data monetisation options, telcos associating with other entities to launch payment banks is the first in that trend. However, with accelerating smartphone penetration, government-mandated GPS capability in basic handsets and app-based payment options, telcos will lose their hold over customers to the larger ecosystem.

#04

OEMs to go up the value chain: Original equipment manufacturers (OEMs) are expected to leverage their network proximity to go beyond plain vanilla network services to offer customer network usage-based analytics, packet probing, advertisement content-based offerings, etc., to protect their revenues.

#05

Enhanced regulator focus and scrutiny on network quality: We expect the regulator to push for higher levels of transparency and accountability in ensuring network quality through demands for disaggregated network data reporting by licensees and related mandatory requirements. Compensation to customers for call drops mandated in 2015 is one of the several regulator initiatives expected in 2016 in this regard.

About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 157 countries with more than 208,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.

In India, PwC has offices in these cities: Ahmedabad, Bengaluru, Chennai, Delhi NCR, Hyderabad, Kolkata, Mumbai and Pune. For more information about PwC India's service offerings, visit www.pwc.com/in

PwC refers to the PwC International network and/or one or more of its member firms, each of which is a separate, independent and distinct legal entity in separate lines of service. Please see www.pwc.com/structure for further details.

©2015 PwC. All rights reserved

pwc.in

Data Classification: DCO

This document does not constitute professional advice. The information in this document has been obtained or derived from sources believed by PricewaterhouseCoopers Private Limited (PwCPL) to be reliable but PwCPL does not represent that this information is accurate or complete. Any opinions or estimates contained in this document represent the judgment of PwCPL at this time and are subject to change without notice. Readers of this publication are advised to seek their own professional advice before taking any course of action or decision, for which they are entirely responsible, based on the contents of this publication. PwCPL neither accepts or assumes any responsibility or liability to any reader of this publication in respect of the information contained within it or for any decisions readers may take or decide not to or fail to take.

© 2015 PricewaterhouseCoopers Private Limited. All rights reserved. In this document, "PwC" refers to PricewaterhouseCoopers Private Limited (a limited liability company in India having Corporate Identity Number or CIN : U74140WB1983PTC036093), which is a member firm of PricewaterhouseCoopers International Limited (PwCIL), each member firm of which is a separate legal entity.

PD 469 - December 2015 Telecom trends.indd
Designed by Corporate Communications, India

Appendix 4

SWOT Analysis on TNPL's Overall Position

Strengths	Weaknesses
<ul style="list-style-type: none"> • High Demand for RF Services due to growing telecom market. • Strong financial backing due to formidable credit line • Relatively high market share in mid-east states of India • Experienced managerial background • Strong relationship with repeat customers and clients and strong brand loyalty and awareness. • High human capital quality as 90% of employees are engineers, mostly BE Electronics in communication • RF planning is a high gross margin business 	<ul style="list-style-type: none"> • Small establish company relative to competitors • RF installation is a low gross margin business • Fall in demand for 2g and 3g RF services • High Credit line to clients: Operators pay OEMs after 75 days and hence they pay RF players after 90 days. This increases cumulative payment cycle to 150 days.
Opportunities	Threats
<ul style="list-style-type: none"> • Competitive Landscape: RF planning and optimisation is estimated to be Rs500 crores size with major business captured by only 10 players • Growth of telecom market due to <ul style="list-style-type: none"> - fall in handset prices - Increased Spectrum availability - Rollout of 4G networks 	<ul style="list-style-type: none"> • Capacity utilization may be below 50% after first 2 years of investment • Increased competition from large Public Limited companies such as Wipro and Tech M • Fall in demand for RF services after 2 years of investment • RF Kit market is Seller's market, this could lead to upward pressure on pricing in future • Access to use of satellites will eliminate need of towers altogether reducing demand for TNPL's services • 5g services will not need RF planning jeopardizing TNPL's business model