

Effect of 2G Scam on Indian Telecom Companies

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Abstract

The prosperity of all countries depends on its economic activities on a sustained basis. This paper attempts to study, using technical analysis, the behavior of the stocks of the top ten companies in the telecom industry in India during pre-2G-scam and post-2G-scam. It was found that the share prices of not only the companies involved in the 2G scam but also the share price of the companies which are not involved in the 2G scam also declined after 2G scam. Also the investors had lost their trust on the entire telecom industry because of the 2G scam.

Keywords:

2G Scam, Telecom, Stock, Price, Volume, Technical Tools.

Introduction

2G technologies in India came as a revolution in the digital world as it introduced several new features on mobile phones like email and SMS. Cellular phones got a new meaning now talking was just one of the features of a phone. Speed is the major highlights of the 2G technology.

In 2008, the Central Government granted 122 telecom licenses to various companies in response to 575 applications for licenses. In a report in 2010-11, the Comptroller and Auditor General (CAG) of India concluded that the allocation of these 122 licenses was characterized by policy gaps and irregularities in procedure. The estimated loss by the CAG according to three different estimates ranged from Rs 53523 to 139652 crores. On the 2nd of February 2012, the Supreme Court of India, in response to a Public Interest Litigation (PIL), cancelled all 122 telecom licenses allotted by Andimuthu Raja and imposed Rs 50 million (US\$1,018,122) fine on Unitech, Swan and Tata Teleservices. It also imposed a fine of Rs 5 million on Loop Telecom Pvt Ltd, S-Tel, Allianz Infratech and Sistema Shyam Tele Services Ltd. Andimuthu Raja, the then telecom minister and a member of a party in the coalition government, has been charged with breaking telecoms rules and accepting bribes to favour some firms, and is in jail.

Literature Review

Deng Min (2006) has proved that the core principles of technical

analysis were correct. These principles include: market action discounts everything; history repeats itself; diagrams and charts are capable of predicting; prices move in trends; have been proven. Shyam Sundhar and Ram Kumar Kakani (2006) employed the Simple Moving Average (SMA) and the Displaced Moving Average (DMA) trading rules to test the weak form efficiency of the Indian equity markets. Ben R. Marshall, Martin R Young and Lawrence C. Rose (2007) investigated the profitability of the quantitative market timing technique of candlestick technical analysis in the U.S. equity market. Paul A. Weller, Geoff C. Friesen, Lee M. Dunham (2007) developed a theoretical framework that could account for the apparent success of both trend-following and pattern-based technical trading rules. Steven Huddart, Mark Lang, Michelle H. Yetman (2008) provided a large sample evidence that past price extremes influenced investors' trading decisions. Xavier Gabaix, Parameswaran Gopikrishnan, Vasiliki Plerou, H. Eugene Stanley (2010) presented a theory of excess stock market volatility, in which market movements were due to trades by very large institutional investors in relatively illiquid markets.

Objectives

To study and analyze the Stock Behavior of Indian Telecom Companies During pre-2G-scram and post-2G-scram.

For the purpose of the study the data period was divided into four phases namely (1) Up to the date of application for 2G license (1st February 2002 – 28th February 2006), (2) From the date of application to issue of 2G license (1st march 2006 – 9th January 2008), (3) From the date of issue of 2G license

to 2G scam (10th January 2008 – 1st July 2010), and (4) Since 2G scam (1st August 2010 – 20th December 2013) and compared.

Research Design

This study being descriptive and analytical in research design used non-probability sampling of the top 5 telecommunication companies from among the population of 19 listed players in India. The 5 telecom companies selected as sample for the study are:

(1) Bharti Airtel Limited (BAL), (2) Tata Teleservices Maharashtra Limited (Tata Indicom, Tata Docomo) (TTL), (3) Himachal Futuristic Communications Limited (Ping Mobile) (HFCL), (4) Unitech Ltd, (5) Videocon (Videocon Mobile Service) (VMS).

The following technical analytical tools were used in this study: (i) Moving averages, (ii) Relative strength index, (iii) Rate of change, and (iv) Volume traded.

Data Analysis and Interpretation

Bharti Airtel Ltd

1. Up to the date of application the shares were traded up to a high of Rs 360.25 and increased by 300% and traded for Rs 1126.75 during the period from the date of application to issue of license and it decreased by 14% and traded for Rs 967.55 during the period of issue of license to 2G scam and it further decreased by 61% and traded for Rs 373.1 since 2G scam.

Table 1 Airtel - Daily Prices High, Low and Average

Price	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	360.25	1126.75	967.55	373.1
Low	22.4	345.6	261.55	306.05
average	133.94	654.59	582.96	335.86

2. The average volume traded per day was 3648.96 up to the date of application and it decreased by 1% to 3606.75 trades per day from the date of application to issue of license and

increased by 359% to 12962.93 trades per day from the issue of license to 2G scam and it decreased by 49% to 6635.07 trades per day after 2G scam.

Table 2 Airtel - Volume Traded

Volume	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
total	3703695	1684350	8127754	1054976
average	3648.96	3606.75	12962.93	6635.07

3. The shares were overbought at Rate of Change (ROC- For instance, if the indicator is greater than 30%, this would indicate an overbought condition, and there will likely be a pullback as traders sell to take profits. If it is less than -30%, then it is oversold, so it would be a good time to buy since the stock is likely to rise in the immediate future.) = 235.59 and oversold at ROC = 66.06 up to the date of application and

during the period from the date of application to issue of license the shares were overbought at ROC = 174.37 and oversold at ROC = 89.55 and from the issue of license to 2G scam the shares were overbought at ROC = 148.09 and oversold at ROC = 35.39 and were overbought at ROC = 145.07 and oversold at ROC = 87.36 since 2G scam.

Table 3 Airtel – ROC

ROC	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Overbought	235.59	174.37	148.09	145.07
Oversold	66.06	89.55	35.39	87.36

4. The relative strength index (RSI-compares the stock's gains over its losses over a specific period of time, usually 14 trading days. If gains were significantly greater than losses over the period, then the stock was overbought, and if losses significantly exceeded gains, then it was oversold) of the scrip crossed the mark of seventy 4 times and fell below the

mark of thirty twice up to the date of application and from the date of application to issue of license the RSI crossed seventy 5 times and fell below thirty 5 times and from the issue of license to 2G scam the RSI crossed seventy 19 times and fell below thirty twice and since scam the RSI crossed seventy twice and fell below thirty only once.

Table 4 Airtel – RSI

RSI	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	4	5	19	2
Below 30 (no of times)	2	5	2	1

5. The simple moving average of the scrip went to Rs 375.16 up to the date of application and increased by 250% to Rs 924.05 from date of application to issue of license and it

decreased by 3% to Rs 896.4 from issue of license to 2G scam and further decreased by 62% to Rs 339.73 since scam.

Table 5 Airtel – SMA

SMA (price)	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	375.16	924.05	896.4	339.73
Low	29.546	374.93	288.83	308.49

6. The overall performance of Airtel scrip was good since it gained before 2G scam and poor after 2G scam because the stock prices came down.

Tata Teleservices Maharashtra Ltd

Tata Teleservices was given 3 licenses.

7. Up to the date of application the shares were traded up to a high of Rs 35.95 and increased by 177% and traded for Rs 63.65 during the period from the date of application to issue of license and it decreased by 10% and traded for Rs 57.2 during the period of issue of license to 2G scam and it further decreased by 57% and traded for Rs 24.85 since 2G scam.

Table 6 TTML - Daily Prices High, Low and Average

Price	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	35.95	63.65	57.2	24.85
Low	5	16.45	13.9	14.4
Average	16.73	27.12	27.24	20.35

8. The average volume traded per day was 2457.14 up to the date of application and it increased by 413% to 10157.45 trades per day from the date of application to issue of license

and decreased by 34% to 6745.47 trades per day from the issue of license to 2G scam and it decreased by 59% to 2747.64 trades per day after 2G scam.

Table 7 TTML - Volume Traded

Volume	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
total	2521021	4743531	4229409	439622
average	2457.14	10157.45	6745.47	2747.64

9. The shares were overbought at ROC = 345.98 and oversold at ROC = 72.72 up to the date of application and during the period from the date of application to issue of license the shares were overbought at ROC = 233.02 and

oversold at ROC = 64.26 and from the issue of license to 2G scam the shares were overbought at ROC = 183.6 and oversold at ROC = 49.62 and were overbought at ROC = 120.05 and oversold at ROC = 61.01 since 2G scam.

Table 8 TTML - ROC (12 weeks)

ROC	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Overbought	345.98	233.02	183.6	120.05
Oversold	72.72	64.26	49.62	61.01

10. The RSI of the scrip never crossed seventy and fell below thirty 14 times up to the date of application and from the date of application to issue of license the RSI never crossed seventy and fell below thirty 20 times and from the issue of

license to 2G scam the RSI never crossed seventy and fell below thirty 17 times and since scam the RSI never crossed seventy and fell below thirty 6 times.

Table 9 TTML - RSI (14 days)

RSI	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	0	0	0	0
Below 30 (no of times)	14	20	17	6

11. The simple moving average of the scrip went to Rs 29.34 up to the date of application and increased by 143% to Rs 41.83 from date of application to issue of license and it

increased by 103% to Rs 43.08 from issue of license to 2G scam and decreased by 52% to Rs 22.59 since scam.

Table 10 TTML - SMA

SMA (price)	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	29.34	41.83	43.08	22.59
Low	5.53	18.73	20.67	19.55

12. The overall performance of TTML scrip was good before 2G scam and poor after 2G scam.

Himachal Futuristic Communications Ltd

13. Up to the date of application the shares were traded up to

a high of Rs 86.25 and decreased by 31% and traded for Rs 59.65 during the period from the date of application to issue of license and it decreased by 12% and traded for Rs 54.35 during the period of issue of license to 2G scam and it further decreased by 70% and traded for Rs 16.11 since 2G scam

Table 11 HFCL - Daily Prices High, Low and Average

Price	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	86.25	59.65	54.35	16.11
Low	7.68	18.1	7	8.25
Average	27.33	26.27	13.56	11.12

14. The average volume traded per day was 5240.30 up to the date of application and it increased by 126% to 6619.23 trades per day from the date of application to issue of license

and decreased by 52% to 3188.79 trades per day from the issue of license to 2G scam and it further decreased by 31% to 2214.24 trades per day after 2G scam.

Table 12 HFCL - Volume Traded

Volume	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
total	5276981	3216945	1999371	307780
average	5240.30	6619.23	3188.79	2214.24

15. The shares were overbought at ROC = 307.30 and oversold at ROC = 28.29 up to the date of application and during the period from the date of application to issue of license the shares were overbought at ROC = 286.09 and

oversold at ROC = 60.40 and from the issue of license to 2G scam the shares were overbought at ROC = 267.08 and oversold at ROC = 38.32 and were overbought at ROC = 103.99 and oversold at ROC = 74.06 since 2G scam.

Table 13 HFCL - RSI (14 days)

RSI	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	0	0	0	0
Below 30 (no of times)	9	14	27	3

16. The RSI of the scrip never crossed seventy and fell below thirty 9 times up to the date of application and from the date of application to issue of license the RSI never crossed seventy and fell below thirty 14 times and from the issue of

license to 2G scam the RSI never crossed seventy and fell below thirty 27 times and since scam the RSI never crossed seventy and fell below thirty 3 times.

Table 14 HFCL - RSI (14 days)

RSI	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	0	0	0	0
Below 30 (no of times)	9	14	27	3

17. The simple moving average of the scrip went to Rs 81.26 up to the date of application and decreased by 62% to Rs 30.55 from date of application to issue of license and it

decreased by 3% to Rs 29.61 from issue of license to 2G scam and further decreased by 61% to Rs 11.41 since scam.

Table 15 HFCL - SMA

SMA (price)	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	81.26	30.55	29.61	11.41
Low	8.44	22.11	8.25	11.04

18. The overall performance of HFCL scrip was good before 2G scam and poor after 2G scam.

Unitech Ltd

Group companies of Indian realty firm Unitech Ltd that were given 22 telecom licenses had not fulfilled eligibility norms for getting these licenses.

19. Up to the date of application the shares were traded up to a high of Rs 1687.55 and increased by 835% and traded for Rs 140393.9 during the period from the date of application to issue of license and it decreased by 96% and traded for Rs 517.55 during the period of issue of license to 2G scam and it further decreased by 81% and traded for Rs 97.5 since 2G scam.

Table 16 Unitech - Daily Prices High, Low and Average

Price	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	1687.55	14093.9	517.55	97.5
Low	43.55	164.85	28.95	33.4
Average	259.59	1405.09	121.84	68.64

20. The average volume traded per day was 57.97 up to the date of application and it increased by 20894% to 12112.09 trades per day from the date of application to issue of license

and increased by 309% to 37426.11 trades per day from the issue of license to 2G scam and it decreased by 60% to 14789.18 trades per day after 2G scam.

Table 17 Unitech - Volume Traded

Volume	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
total	55590	5656348	23503594	2366268
average	57.97	12112.09	37426.11	14789.18

21. The shares were overbought at ROC = 291.17 and oversold at ROC = 74.61 up to the date of application and during the period from the date of application to issue of license the shares were overbought at ROC = 890.16 and

oversold at ROC = 2.27 and from the issue of license to 2G scam the shares were overbought at ROC = 361.97 and oversold at ROC = 15.3 and were overbought at ROC = 141.3 and oversold at ROC = 36.72 since 2G scam.

Table 18 Unitech - ROC (12 weeks)

ROC	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Overbought	291.17	890.16	361.97	141.3
Oversold	74.61	2.27	15.3	36.72

22. The RSI of the scrip crossed seventy 9 times and never fell below thirty up to the date of application and from the date of application to issue of license the RSI never crossed seventy and fell below thirty 5 times and from the issue of

license to 2G scam the RSI never crossed seventy and fell below thirty 13 times and since scam the RSI never crossed seventy and fell below thirty 2 times.

Table 19 Unitech - RSI (14 days)

RSI	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	9	0	0	0
Below 30 (no of times)	0	5	13	2

23. The simple moving average of the scrip went to Rs 3300.24 up to the date of application and increased by 138% to Rs 4547.2 from date of application to issue of license and

it decreased by 92% to Rs 379.78 from issue of license to 2G scam and further decreased by 78.36% to Rs 82.2 since scam.

Table 20 Unitech SMA

SMA (price)	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	3300.24	4547.2	379.78	82.2
Low	51.48	391.61	36.43	64.81

24. The overall performance of Unitech scrip was good before 2G scam and poor after 2G scam.

Videocon Industries Ltd

Videocon Telecommunications, formerly Datacom Solutions, is part of India's Videocon group and was issued 21 licenses.

25. Up to the date of application the shares were traded up to a high of Rs 497.2 and increased by 166% and traded for Rs 827.3 during the period from the date of application to issue of license and it decreased by 20% and traded for Rs 665.55 during the period of issue of license to 2G scam and it further decreased by 57% and traded for Rs 287.95 since 2G scam.

Table 21 Videocon - Daily Prices High, Low and Average

Price	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	497.2	827.3	665.55	290.5
Low	11.55	339.95	83.25	184.7
Average	148.94	434.71	225.92	231.89

26. The average volume traded per day was 19055.9 up to the date of application and it increased by 107% to 20425.01 trades per day from the date of application to issue of license

and increased by 110% to 22565.25 trades per day from the issue of license to 2G scam and it decreased by 4% to 21651.86 trades per day after 2G scam.

Table 22 Videocon - Volume Traded

Volume	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
total	34414954	19076957	28296819	6928594
average	19055.9	20425.01	22565.25	21651.86

27. The shares were overbought at ROC = 1047.47 and oversold at ROC = 59.97 up to the date of application and during the period from the date of application to issue of license the shares were overbought at ROC = 827.3 and

oversold at ROC = 339.95 and from the issue of license to 2G scam the shares were overbought at ROC = 665.55 and oversold at ROC = 87.4 and were overbought at ROC = 290.5 and oversold at ROC = 182.2 since 2G scam.

Table 23 Videocon - ROC (12 weeks)

ROC	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Overbought	1047.47	827.3	665.55	290.5
Oversold	59.97	339.95	87.4	182.2

28. The RSI of the scrip never crossed seventy and fell below thirty 8 times up to the date of application and from the date of application to issue of license the RSI crossed seventy once and fell below thirty 7 times and from the issue of

license to 2G scam the RSI crossed seventy once and fell below thirty 13 times and since scam the RSI never crossed seventy and fell below thirty 5 times.

Table 24 Videocon - RSI (14 days)

RSI	Upto date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
Above 70 (no of times)	0	1	1	0
Below 30 (no of times)	8	7	13	5

29. The simple moving average of the scrip went to Rs 454.23 up to the date of application and increased by 102% to Rs 463.8 from date of application to issue of license and it

decreased by 2% to Rs 453.53 from issue of license to 2G scam and further decreased by 46% to Rs 242.82 since scam.

Table 25 Videocon - SMA

SMA (price)	Up to date of application	From date of application to issue of license	From issue of license to 2G scam	Since 2G scam
High	454.23	463.8	453.53	242.82
Low	14.81	382.8	103.2	226.57

30. The overall performance of Videocon scrip was good before 2G scam and poor after 2G scam.

Findings

It was found that the market price of stocks of all the sample companies enjoyed an increase but less than 100% during

phase-1 (i.e. up to the date of application of 2G licenses); during the phase-2 (from the date of application to the date of issue of licenses) the market prices for the stocks of Videocon and HFCL faced a less than 100% decline whereas TTML saw an increase of less than 100% in their stocks' market price while UWL, and BAL enjoyed a more than

100% increase in their stocks market prices; during phase-3 (from the issue of license to the date of 2G scam) only TTML saw its stocks' market price increase by less than 100% while for all other sample companies the market price of their stocks fell by less than 100% whereas UWL suffered

a decrease in their stock price by more than 100%; during phase-4 (i.e. post-scam) the market price of stocks of all samples companies declined by less than 100% whereas for HFCL the decline was more than 100% as presented in Table-1.

Table-1: Stock price behavior of the sample companies during the four phases

S No	Companies	Phase-1 Up to the date of application	Phase-2 From the date of application to the date of issue of license	Phase-3 From date of issue of license to the date of 2G scam	Phase-4 Since 2G scam
1	Tata Teleservices Maharashtra Limited	+	--	+	-
2	Videocon	+	-	+	--
3	Unitech Wireless Limited	+	++	--	-
4	Bharti Airtel Limited	+	++	-	-
5	HFCL	+	-	-	--

NA- share prices not available for that period, + increased by < 100%, ++ increased by >100%, - decreased by < 100%, -- decreased by >100%

It was found that the volume of stocks traded for all the sample companies gained during phase-1 (i.e. upto the date of application of 2G licenses); whereas during phase-2 (from the date of application to the date of issue of licenses) the volume traded of the stocks of Videocon and Bharati declined whereas all other sample companies enjoyed an increase; during phase-3 (from the issue of license to the date of 2G scam), Unitech, Bharati Airtel enjoyed an

increase in the volume traded of their stocks by more than 100% whereas Videocon saw the volume traded of their stocks increase only by less than 100%; But during the phase-4 (i.e. post-scam) the volume traded of all the sample companies fell whereas the volume traded for TTML & Videocon fell by more than 100% while that of other companies fell by less than 100% as presented in Table-2.

Table-2: Volume of stocks traded of the sample companies during the four phases

S No	Companies	Phase-1 Up to the date of application	Phase-2 From the date of application to the date of issue of license	Phase-3 From date of issue of license to the date of 2G scam	Phase-4 Since 2G scam
1	Tata Teleservices Maharashtra Limited	+	++	-	--
2	Videocon	+	-	+	--
3	Unitech Wireless Limited	+	++	++	--
4	Bharti Airtel Limited	+	-	++	-
5	HFCL	+	+	--	-

NA- share prices not available for that period, + increased by < 100%, ++ increased by >100%, - decreased by < 100%, -- decreased by >100%

CONCLUSION

The telecom industry in India has experienced exponential growth over the past few years and has been an important contributor to economic growth; however, the cut-throat competition and intense tariff wars have had a negative impact on the revenue of players. Despite the challenges, the Indian telecom industry will thrive because of the immense potential in terms of new users. The government is keen on

mounting rural telecom infrastructure and is also set to roll out next generation or 3G services in the country. Operators are on an expansion mode and are investing heavily on telecom infrastructure. It was found that, surprisingly but rationally though, the stock prices and volume traded of not only the companies involved in the 2G scam but also the stock price of the companies which were not involved in the 2G scam declined after 2G scam. Perhaps, this reflects the loss of investor confidence in the telecom industry as a

whole in India after the exposure of 2G Scam, ironically when the telecom industry is booming in India where people love to die talking.

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