

Valuation Techniques in Telecommunication Industry – An Alternative Approach based on Operating Cash Flow and Number of Subscribers

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ABSTRACT

The Indian economy has witnessed tremendous growth after liberalization. The valuation of telecom companies has gained specific importance after 2010. The government has received revenue of more than Rs. 1.06 lac crores through 3G/BWA spectrum auction from telecom operators. The operators raised debt to finance acquisition of spectrum in the above auction. Due to this almost all the operators had to raise debt and now it is impacting their profits, cash flow and valuation. Apart from this the telecom operators are highly regulated. There are various issues due to which the valuation of the telecom companies prior to 2010 (i.e. before auction) and post 2010 shows a huge difference.

The valuation of telecom operators is very crucial and has invited special attention in the recent past. This article attempts to evaluate some special aspects of telecom valuation like valuation based on subscriber, per subscriber EV, PE ratios (EV ratios) etc. which may not be used while valuing other types of industries.

This paper evaluates existing valuation techniques, assesses limitations of these techniques in the light of 3G auction. The valuation of the telecom companies under the conventional techniques may not depict fair results, considering the fact that the telecom sector witnessed an increase in number of subscribers, increase in revenue however a reduction in profits & valuation and heavy cost of debt involved in acquiring spectrum and upgrading technology during 2009 to 2015. The paper attempts to find out an alternative basis to arrive at valuation based upon operating cash flows and the number of subscribers.

Keywords: Valuation, Number of subscribers, Operating Cash Flows, Telecom Industry

1. INTRODUCTION

Telecommunications sector has witnessed structural, regulatory, technological and institutional reforms since 1991. National Telecom Policy in 1994, 1999 and 2012 laid basic foundation for growth in terms of private sector participation in this area. It has thus attracted private & foreign investors. Wireless service provider is the most widely deployed mobile communications technology in India. There are many players offering wireless service provider in India. The business models of the operators

are also changing due to various reasons such as change in regulations, technology, opportunities for convergence etc.

Telecommunications industry is one of the most profitable and rapidly developing industries in the world and leading to overall economic growth. In the recent past, telecom has become backbone of various other industries and very useful in convergence with these industries. The industries include banking, healthcare, media, entertainment etc. Due to such convergence the business model is also affected. The regulations play an important role in telecom sector. Similarly the growth opportunities

are also increasing due to changes in technology and relevant business opportunities such as payment banks. The industry has in the past and is likely to have mergers and acquisitions in the years to come.

The research involves studying the key trends in valuations in Indian telecom industry. It involves a study of current happenings in telecom industry, regulatory environment, valuation of each telecom operator based on different parameters like Enterprise value, ARPU, Discounted cash flow method. Finally it constitutes detailed valuation of some of top telecom operators of India based on some new parameters like Average Cash margin per user, Enterprise value/EBITDA or cash flow per subscriber and analyzing their future prospects for mergers and acquisitions.

1.1 Objectives of the Study

The basic objective of the paper is to study present valuation practices and approaches and explore a new approach to valuation for Indian telecom operators. The paper evaluates various approaches in light of auction in 2010, 2014 and its impact on valuation. The study does not discard any of the existing methods however explores a new approach which might be useful in arriving at a fair value. The objectives of valuation are manyfolds which includes mergers and acquisitions, divestment, strategic purpose etc.

1.2 Valuation in Indian Telecom Industry

One of the basic objectives of financial management is to maximize the value of the business. In finance, there are three decisions i.e. starting from investment, how to finance investment and pay dividend out of profits. These decisions are taken with a view to maximize valuation of the companies. The above decisions are believed to be within the control of the organization. However in a few cases, these decisions are affected due to Government policies and regulations. In case of Indian Telecom Operators, all the operators had to invest a huge amount due to 3G / BWA auction process. The investment in spectrum auction was more than one lakh crores rupees, for all operators. In a few countries like Japan, Korea the spectrum was free of cost so there was no investment from the companies' point of view. In case of India, the operators had to invest in spectrum and for this they had to raise debt from the market. The debt they raised was due to spectrum auction. The spectrum auction took place in European countries where the operators in those countries had to raise funds / debts which impacted their profit margin and valuation. The similar issue happened

in case of Indian operators also.

Any financial activity leading to positive NPV creates value. In case of operators the investment (cost) of spectrum auction is not left as the decision purely at the discretion of the operators. The amount of investment although was market driven, it was regulated and bound with a policy decisions.

1.3 Valuation Drivers for Telecom Industry

According to the study conducted in 2009(E & Y report), the intangible assets represent on an average 30% of the telecommunication industry's target Enterprise Value. These intangible assets include brand, technology, customer contract / relationships etc. It is important to note that out of all intangible assets highest percentage of impact on EV is represented by customer contracts / relationships, i.e. almost 1/3rd of all intangible assets. It shows the importance of customer / subscriber base in terms of valuation i.e. EV – Enterprise Value. There are three main aspects i.e. number of subscribers, extent of regulations and ARPU (i.e. average revenue per user)

1.4 Importance of Subscriber in Valuation

For a few industries, customer directly fetches value and income. The capacity of a customer base to give excess earning is also important. Customer and customer relationship is definitely treated as an asset. To arrive at fair value of asset, excess earnings method is useful. Thus customers / relationship will generate cash flows over a period of time. In case of telecom operators, the quality of customers, retention of customers (by reducing churn rate), offering quality of services and fair pricing will lead to excess earnings. The excess earning is thus attributable to the subscribers. These excess earnings are further discounted to arrive at fair value.

To value customer base for telecom industry needs attention to various factors such as multiple SIM customers, non-active cards, the nature of customer base (segmental revenue - mobile, fixed, internet etc.), growth trends, margin levels, useful customer life and churn rates, bundled services, possibilities of new technologies and its impact on acquisition of new customers or retention of existing one, regulatory issues like switching from one company to other, new competitors affecting business model of operators. Thus the useful life of customer is significant along with how much cash flow it would generate for company.

1.5 Spectrum Auction in 2010 and 2014

The telecom industry has also contributed large amount to Government exchequer in the past. As against the expectation of a total Rs. 35,000 crores, the Government earned more than Rs 1.06 lakh crores through this auction. At present, there seems to be uncertainty in revenues due to competition and MNP, delay in 3G launching, changing regulations and such related issues. One of the major concerns of industry is declining ARPU and with 3G it is likely to increase. Post 3G auction the situation has resulted into 'Winning Curse' for most of the operators.

For spectrum allocation, auctions could be a mechanism to decide entry, maximize social efficiency, revenue maximization or price discovery. The objectives for Government of India as mentioned on DoT website, include maximizing revenue for the government, efficient use of spectrum, stimulate competition, and promote 3G roll-out and help resolve 2G congestion Issues. However these revenues for auction depend upon number of subscriber and ARPU.

1.6 Impact of 3G Auction on Operators

The telecom operators had to invest in spectrum auction which is a huge investment for all operators. These investments were funded out of debts and the debt burden was increased to a large extent. (Expected to be around Rs 3, 00,000 crore). This increasing debt load will place increasing margin pressures on operators due to higher interest expenses. Idea Cellular raised about \$740 million, Tata Teleservices raised about \$973 million, Airtel, had raised 85 billion rupees. Telecommunications companies have raised around \$4 billion rupees via short-term debt and syndicated loans, a large chunk of it this week, to help fund their 3G spectrum purchases.

The major concern was the debt amount raised by telecom operators. This industry has loan of around Rs. 2.5 trillion. One of the major reasons of debt was tariff war along with huge investments in 3G, BWA auction. An average net debt to EBITDA was around 2-3 times.

Table 1: Cost of Debt for Telecom Operators Post 3G Auction (in %)

2007-08	2008-09	2009-10	2010-11	2011-12
6.04	7.88	4.8	5.95	10.24

Cost of Debt: Finance Charges / Total debt x 100. It indicates pressure on cost of debt and cost of capital also

which is subsequently used in discounting rate. It would affect the valuation of operators.

1.7 Sample Selection

The purpose of the study is to study the impact of investment in spectrum auction and its impact on valuation. Due to these investments, established methods of valuations are not useful to arrive at valuation of Indian Telecom Industry. Thus the study is related to Telecom Industry and the sector of Indian Telecom Operators only. There are 16 operators in India namely Bharat Sanchar Nigam Ltd., Mahanagar Telephone Nigam Ltd., Reliance Communication Ltd., TATA Teleservices Ltd., Idea Cellular Ltd., Videocon Communications Ltd., Quadrant Tele ventures Ltd., BharatiAirtel Ltd., Vodafone Ltd., Aircel, Loop Mobile Ltd., Spice Communication Ltd., S Tel Ltd., Unitech Wireless Ltd., Etisalat DB Telecom Pvt. Ltd., Sistema Shyam Teleservices. Thus out of 16 companies, only 8 companies have invested in 3G / BWA auction. The auction took place in 2010 and 2014. The lists of companies who have invested in either of these auctions are Vodafone Essar Limited., Bharti Airtel Limited., Reliance Telecom Limited., Idea Cellular Limited., Tata Teleservices Limited., Aircel Limited., S Tel Private Limited., and Reliance JIO. Out of the above eight companies, the data required for the purpose of study is a financial data and is available of those companies which are listed on a stock exchange. Thus for the purpose of our study we have selected three listed companies as follows;

1. Bharti Airtel Limited
2. Reliance Communication Limited
3. Idea Cellular Limited

1.8 Approaches to Valuation

There are various methods of valuations and the methods include are;

- Book Value
- Market Capitalization
- Enterprise Value
- Discounted Cash flow
- Free Cash Flow

There are various advantages and limitations of the same and these methods can be applied to valuation of telecom service providers.

The main features of Telecom Service Providers

1. It is a capital intensive industry;
2. Huge investment in spectrum auction driven by market forces and Government regulations;
3. The investment are made out of huge debts;
4. The revenue depends upon number of subscribers;
5. The industry is highly regulated so predicting future profits or cash flows is difficult;
6. The capitalization rate which is based upon weighted cost of capital is also driven by huge debts due to 3G auction

1.9 Methods of Valuations for Telecom Operators

There are various approaches to valuation. Although most of the approaches can be directly applicable to telecom operators, in view of above issue i.e. 3G and BWA auction and its subsequent impact on company's financial statement, valuation need to be analyzed from different perspective. According to Prof. Ashwath Damodaran, in general terms, there are four approaches to valuation i.e. discounted cash flow valuation, liquidation and accounting valuation, relative valuation, contingent claim valuation uses option pricing models. Out of the stated available methods, most commonly and widely used methods are enterprise value and valuation based on cash flows.

In discounted cash flows valuation, the value of an asset is the present value of the expected cash flows on the asset, discounted at a rate which represents the riskiness of these cash flows. Assets with high and predictable cash flows should have higher values than assets with low and volatile cash flows. In case of telecom operators if we treat customers as asset which generates cash flows and profits, then the valuation of customers is crucial. In this context, we need to analyze cash flows generated out of subscribers / customers, whether they are high and predictable in relation to a telecom operator.

A few findings from E & Y study for telecom operators indicate that key performance indicators are ARPU, Enterprise value to number of subscribers, Enterprise value to Line Installed; subscriber acquisition cost and subscriber retention cost. The finding from the report says that large Telco's that operate in emerging markets have higher valuation multiples than their peers in mature markets. The operators in emerging markets face additional risk and thus are reflected by higher betas. The higher betas convert into higher costs of capital for operators in emerging markets.

So in case of Indian operators, they had taken debt for spectrum auction resulting into more risk and beta affecting their valuation. Since the risks of operators have increased, it is reflected in beta coefficient and ultimately affects discount rates used in valuation of companies.

1.10 Other Approaches

In EV to EBITDA approach, EV is arrived at as market capitalization plus debt and preference share capital as reduced by cash and cash equivalents. To put it simply, it is the price you will pay if you want full control of the firm. By paying off all shareholders and bondholders you can enjoy full control of the firm and quite understandably you can enjoy the cash the way you want. Hence, EV consists of all types of capital but deducts cash and cash equivalents. The denominator is EBITDA. In a profit and loss statement, an investor can simply deduct cost of goods sold from net sales. In plain terms, EBITDA represents operating profit. It talks about the profit a company makes by being in the business. It does not take into account various factors like the cost of financing, rate of tax and non-cash expenditure such as depreciation. Many a time companies in sectors such as airlines, infrastructure and other capital-intensive businesses which earn more revenues due to high debt, the EV/Sales financial parameter is more useful.

1.11 Various Approaches to Valuation and Their Limitations in View of Auctions

Value maximization is the central theme or objective of financial management. Thus the crucial issue is to arrive at fair valuation for a company. Although main approaches are applicable to all companies, the changes are required considering the nature of industry and its environment such as government policies, regulation, industry growth etc. The following approaches describe the method of valuation and its discussion on 3G auction and its impact on operator's valuations:

Adjusted book value approach: It is a balance sheet approach. The assets as reduced by liabilities will reflect this valuation. Due to 3G auction, all the operators had invested huge amount in 3G auction. So the valuation based on adjusted book value may not reflect the correct valuation. This valuation ignores the importance of organizational capital i.e. employees and mainly the customers which brings value to business. This approach is suitable in case of industries which are highly regulated and derives value mainly from owning natural resources. In case of telecom operators this valuation is partially

applicable. However the operators are not the owners so valuation has its own limitations. In our opinion, in absence of ownership of spectrum and ignoring the value to customers this valuation is not relevant.

Stock and Debt Approach: Under this approach when the securities of the company are publicly traded then the valuation is arrived at by adding value of equity and debt. In case of operators, all operators are not listed on stock exchange and their debts are not traded on exchanges. Similarly for those operators who had raised huge debt for subscribing to 3G auction, this approach would give huge valuation due to debt structure which is not fair. The valuation will be meaningless when we compare pre-auction value and post – auction valuation. Similarly it pre supposes efficient market hypothesis.

Direct Comparison Approach: One of the fundamental principles is that similar assets should sell at similar price. The valuation is based on detailed analysis including identification of multiples. There are various multiplies and the value indicator must be consistent with the financial variable chosen. The multiplies include firm value to sales, book value of assets, PBDIT, PBIT etc. This approach is not suitable for operators. However a few ratios are very useful such as EV / Sales or subscribers.

Market Capitalization and Enterprise Value: The market capitalization is relevant however most of the operators are not listed. The enterprise valuation of operators is high due to debt component. So these criteria may not be directly relevant to operators. In our opinion, instead of ARPU, average cash margin per user is more important. And we suggest one more multiplier i.e. EV / Average cash margin per user which is discussed subsequently.

Discounted Cash flow approach: This approach is most suitable to operators since it is based on cash flows of the company. Here the value of the firm is present value of cash flow during explicit forecast period plus present value of cash flow after explicit forecast period. However in a discounted cash flow method, for discounting purpose we need to calculate discounting rate which is based upon weighted cost of capital from all sources. Thus it includes cost of equity and cost of debt. In case of operators who have paid huge amount for auction and raised the debt, cost of debt would be high along with weighted cost of capital. Even due to these debts the proportion of debt to equity will be high resulting into high discounting rate. For DCF method, more thrust is on revenue and which is derived from subscribers. Valuation is done to guide certain management decisions such as acquiring company, divestment decisions or similar strategic decisions.

Free cash flow to equity valuation: In the entire valuation considering the scope of debt, this valuation may give an appropriate result. Arriving at cash flow is difficult due to various reasons such as changing subscriber base (due to mobile number portability), changing business models (due to integration of businesses i.e. payment banks), changing regulations related to rates and taxes etc.

1.12 Alternate Valuation Approach for Telecom Operators

Telecom companies can be valued based on market capitalization and Enterprise value. However considering the impact of debt driven by Government policy of spectrum auction which is more than Rs. 2 lacs crores, these two valuation methods may not represent a true valuation. Considering the importance of subscribers, we propose another approach i.e. valuation based on customers to Indian telecom operators. The German telecommunication company Deutsche Telekom (2001) acquired US wireless carrier Voice Stream resulting into acquiring 2.3 million customers. In this deal, Deutsche Telekom acquired it for \$35 billion. Thus it has paid \$15,200 were paid per customer. This is arrived at by dividing total annual EBITDA-margin by the total number of customers at the end of that year (Skiera and Wiesel, 2002). This approach employs disaggregated cash flows on the level of individual customers.

If we observe similar business valuations such as CATV valuations they are valued based upon multiple of cable cash flow and value per subscriber. Cable cash flow is defined as operating income before depreciation, amortization, interest and taxes. Cable acquisition prices in Canada and US were based on multiplication of next years' cable cashflow.

1.13 Enterprise Value / Operating Cash Flow Method of Valuation

One method of valuation is Enterprise Value to operating cash flow. Operating cash flow in which one can understand pure cash flows. In EBITDA there is likely to have accounting distortions. So operating cash flows are more meaningful than EBITDA as valuation multiples. EV/OpCF is preferable to EV/EBITDA for comparing companies within a sector, or for comparing companies across sectors or markets where companies have widely varying degrees of capital intensity. For example, the UBS Warburg European telecom team favors using EV to operating free cash flow over EV/EBITDA and is more useful in predicting future

performance of telecom operators.

1.14 Enterprise Value to Cash Flow Per Subscriber

After reviewing various methods of valuations, we arrive at conclusion that subscribers are the most important element which drives valuation of telecom operators. The milestones in valuation were earlier based on number of subscribers, then average revenue per user, average margin per user. In the current situation, we propose average cash flow per subscriber which is linked to enterprise

value. Thus we recommend average cash margin per user (ACMPU) or operating cash flow per subscriber due to two reasons i.e. subscriber is most important asset and cash flow are superior to profits. In finding out the better method, we have compiled data of three operators' enterprise value as of 31st March of every year from 2009 to 2015. The data was related to enterprise value, EV to EBITDA per subscriber and EV to cash flow per subscriber. The data was gathered for seven years and of three operators resulting into 21 samples. After analyzing the data, following correlation was arrived at. The result of correlation is as follows;

Table 2: Correlations

		<i>EV</i>	<i>EBIDTA</i>	<i>Operating Cash Flow</i>	<i>Subscribers</i>	<i>EBIDTA/Subscriber</i>	<i>Cash flow/Subscriber</i>
EV	Pearson Correlation	1	.940**	.926**	.724**	.577**	.730**
	Sig. (2-tailed)		.000	.000	.000	.006	.000
	N	21	21	21	21	21	21
EBIDTA	Pearson Correlation		1	.935**	.700**	.662**	.716**
	Sig. (2-tailed)			.000	.000	.001	.000
	N		21	21	21	21	21
Operating Cash Flow	Pearson Correlation			1	.754**	.511*	.821**
	Sig. (2-tailed)				.000	.018	.000
	N			21	21	21	21
Subscribers	Pearson Correlation				1	-.032	.284
	Sig. (2-tailed)					.891	.213
	N				21	21	21
EBIDTA/Subscriber	Pearson Correlation					1	.694**
	Sig. (2-tailed)						.000
	N					21	21
Cash flow/Subscriber	Pearson Correlation						1
	Sig. (2-tailed)						
	N						21

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Relationship between EV to EBIDTA per subscriber (0.577); and cash flow per Subscriber EV (0.730) is checked using correlation significance. Both correlations are significant at 0.01 levels. Since correlation between Cash flow/ Subscriber with EV of 0.730 is stronger; it is better indicator of strength of relationship. Thus while valuing Telecom companies it is better to consider cash flow per subscriber to arrive at valuation.

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