

Bharti Infratel

BSE SENSEX
36,107

S&P CNX
10,822

CMP: INR285

TP: INR275 (-4%)

Neutral



Stock Info

Bloomberg	BHIN IN
Equity Shares (m)	1,897
M.Cap.(INRb)/(USDb)	528 / 7.5
52-Week Range (INR)	378 / 242
1, 6, 12 Rel. Per (%)	11/-4/-28
12M Avg Val (INR M)	1018
Free float (%)	46.5

Financials Snapshot (INR b)

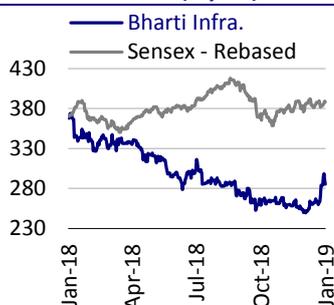
Y/E Mar	2018	2019E	2020E
Net Sales	144.9	145.6	148.3
EBITDA	63.8	56.8	51.2
NP	25.2	22.7	19.7
EPS (INR)	13.6	12.3	10.7
EPS Gr. (%)	-8.1	-9.9	-13.3
BV/Sh. (INR)	91.7	87.6	80.9
RoE (%)	15.6	13.7	12.7
RoCE (%)	13.7	10.5	9.4
P/E (x)	20.9	23.2	26.8
P/BV (x)	3.1	3.3	3.5
EV/EBITDA (x)	7.6	8.3	9.2

Shareholding pattern (%)

As On	Sep-18	Jun-18	Sep-17
Promoter	53.5	53.5	58.0
DII	3.0	3.0	1.8
FII	42.3	42.2	38.3
Others	1.2	1.3	2.0

FII Includes depository receipts

Stock Performance (1-year)



Indus merger to accentuate earnings pressure

Bharti Infratel hosted an analyst meet to discuss its merger with Indus and the way forward. Reiterating that its dominance in the tower space will continue post-merger, the company plans to focus on multiple new growth avenues. But, our discussions with peers and other market participants raised concerns on a new entrant's 'go solo' strategy, prominence of in-building solutions (IBS), small cells and expansion of American Tower Corporation (ATC), which could be severely detrimental to the merged entity's future growth prospects.

- **Merger rationale:** The merger will improve capital structure, ROE, EPS, remove holding company discount to Indus and drive group level operational synergies.
- **Management believes that earnings have bottomed out and majority of site cancellations are behind;** focus will now shift to new growth avenues. Management indicated that growth opportunities remain strong in macro site requirements, apart from new avenues like fiber sharing, small cells, IBS, wifi hotspot and smart cities.
- **Focus on shareholder returns:** All new growth avenues will be tapped provided they are not ROE dilutive, else the company will return excess cash to shareholders with an outer limit of 3x net debt to EBITDA.
- **Weakening competitive position:** Earlier, Right of First Refusal (ROFR) in all 23 circles from Vodafone-Idea stayed with Bharti Infratel. But, due to the sale of Vodafone and Idea's independent towers to ATC and ROFR in seven out of 23 circles shifting to ATC, competitive position of BHIN-Indus will be diluted.
- **Pressure on business to continue:** Our meetings with industry participants indicated that site cancellations from Vodafone Idea are far from over, while RJio's 'go solo' strategy will further weaken independent tower companies. Even IBS and small cells are largely deployed by Telcos directly.
- **Expect BHIN consol. EBITDA/PAT de-growth of 10%/12% in FY20.** Our proforma (incl. 100% Indus) EBITDA/PAT is likely to de-grow 14%/27% in FY20, assuming IDEA and Providence's stake buyout. We remain Neutral with a TP of INR275, given the reducing competitive position and earnings visibility.

Management optimistic about outlook

Management indicated that site cancellations have largely been concluded and the huge data growth is likely to drive the need for high network investment. This would be seen in macro site requirements, as telcos will need to make the network dense, besides building other layers of the network like fiber sharing, small cells, IBS, WiFi hotspot and other managed services. But Bharti Infratel does not plan to build ahead of telcos' requirements. The company will wait for demand to pick up until it sees substantial interest in alternate avenues. It will continue to return cash to shareholders and operate on a lean balance sheet and healthy ROE.

Aliasgar Shakir – Research analyst (Aliasgar.Shakir@motilaloswal.com); +91 22 6129 1565

Hafeez Patel – Research analyst (Hafeez.Patel@motilaloswal.com); +91 22 6129 1568

Investors are advised to refer through important disclosures made at the last page of the Research Report.

Motilal Oswal research is available on www.motilaloswal.com/Institutional-Equities, Bloomberg, Thomson Reuters, Factset and S&P Capital.

Industry structure getting diluted

Our discussion with industry participants gave a glaring hawkish view highlighting the deteriorating network rollout plans and focus on profitability over network quality. Further, we understand that Bharti Infratel's dominant position in the tower market is weakening as the future of its large clientele is uncertain, while the new entrant is going 'solo' towards network deployment. Newer technologies like IBS, small cell are being done independently by operators, while Bharti Infratel is slow in the roll-out.

Earnings pressure to accentuate the Indus merger

Our current estimates build revenue/EBITDA/PAT decline of 0%/11%/10% in FY19, and a similar trend should follow in FY20. However, post 100% consolidation with Indus, the decline in earnings for FY19 and FY20 should increase to 1%/15%/34%. This is because of higher impact seen in Indus due to site exits by Vodafone-Idea, evident from 2QFY19 when sites tenancy cuts in Indus was 16% v/s 9% for Bharti Infratel standalone.

Maintain Neutral with TP of INR275

Bharti Infratel currently holds a strong annuity business. However, declining earnings, weakening market position of customers, and an uncertain outlook are headwinds, which hinge on recovery in the telecom market. We maintain Neutral with TP of INR275 (BHIN consol.), implying EV/tenancy of INR2.7m, EV/tower of INR5.3m for FY20.

Key takeaways from Bharti Infratel analyst meet

- **Indus merger progress:** The company has received approval from the CCI and the stock exchanges. Approval from NCLT and DOT are pending. The deal should conclude by April-May'19.
- Tower cancellation and future growth potential.
- Large part of the exits is over and incremental site cancellations should be low. Given the huge data consumption, typically, pan-India coverage on a sub-ghz spectrum network would require about 300,000 sites. Once the telecom industry stabilizes post consolidation, the high data consumption should accelerate operator's increase in footprints, driving the need for more towers. Further, incrementally more sites will come up on fresh tenancies v/s loading.
- **Future Growth avenues/Fiber:** Of the overall fiber space, which has (a) intra-circle fiber, (b) inter-circle fiber, and (c) tower connectivity, management is currently keen to explore business opportunity in the tower connectivity category, apart from selective inorganic growth opportunities, IBS, wifi hotspot, smart cities and managed services.
- **Dividend policy:** Management will share excess cash up to 3x net debt to EBITDA position. The company plans to invest in new growth avenues with clear visibility on profitability/maintaining long term ROEs, else will return cash to shareholders.
- **ROFR diluted with Vodafone-Idea:** Unlike ROFR in 23 circles from Vodafone-Idea with Bharti Infratel/Indus, currently ROFR is present in only 15 circles, while ROFR for the rest seven circles has shifted to ATC, which has acquired independent towers.

- **RJio still a strong customer:** Unlike earlier, RJio has higher proportion of shared tenancy v/s own towers. Bharti Infratel has also built exclusive single tenancy towers in specific conditions.
- **Merger synergies:** Given that Bharti Infratel and Indus operate in different circles, there is limited last mile overlap in operations to drive synergies. However, savings could be driven by way of lower administration cost. Head-office cost for the merged entity is INR3-4b for FY18.

Key takeaways from meeting with Industry experts

- **Tenancy cancellation far from over:** Expect to see a sharp cut in tenancies to the tune of 20-30% over the next two years as Vodafone-Idea is drastically cutting sites. For every fresh site addition in the industry, there are around 2-3x site closures in the industry. Operators have started prioritizing profitability over network expansion and therefore curtailed footprint in many locations.
- **ATC witnessing large scale tenancy exits on Vodafone Idea towers:** A large proportion of sites acquired from Vodafone Idea are going through termination, with condition of many towers poor and unsustainable to continue.
- **Pricing/ bargaining power with telcos:** Telcos have started initiating discussions for price cuts. There are even instances where telcos have shut sites in prominent locations when price negotiations have failed.
- **New operator tenancies coming with shorter tenure:** RJio has deliberately entered into tenancy contracts of five years v/s earlier 10-15 years, as it plans to build its own towers before or at the time of renewal. In the last one year, Indus-Infratel has built only 10% fresh sites for RJio. For new sites, RJio continues to independently build significant portion of macro sites, IBS and small cells.
- **IBS key growth driver, going forward:** ATC has added 123m sqft of IBS area in the last one year and sees huge demand going forward. It is tying up with builders (commercial and residential) at the time of construction, explaining the need to have IBS and pushing the builder to share capex, and also to get exclusive rights of the property. RJio is the only operator aggressively investing in IBS with exclusive rights in multiple commercial and residential buildings. Incumbent telcos and Bharti Infratel have prioritized pricing and profitability over expansion in the IBS segment, thus losing out on prime property deals. ATC has formalized pricing on a per sqft basis as per technology adopted across different regions.

Exhibit 1: Bharti Infratel (incl. 42% Indus) – SOTP Valuation

	Value (INR b)	Value (INR/share)	Implied FY20 EV/Tenancy (INR m)	Implied FY20 EV/EBITDA (x)
Standalone (DCF based)	324	175	3.8	11.8
Indus (DCF based)	388	210	1.6	7.6
Indus value (42%)	163			
Indus value post holding co discount of 20%	130	70	1.2	6.1
Total Enterprise value	454	246	2.4	8.9
Net Debt	-54	-29		
Shares o/s (b)	1.8			
Fair value	509	275	2.7	9.9
CMP		285		
Upside		-4%		

Source: MOSL, Company

Exhibit 2: BHIN-Indus post-merger proforma financials (INR b)

	FY18	FY19E	FY20E
Revenue from operations	254	250	252
-Rental Revenue	156	139	131
-Energy Reimbursements	98	111	121
Operating Expenditure			
Power and fuel	89	104	116
Rent	25	26	27
Employee benefits expenses	8	8	8
Repair and maintenance expenses	16	15	16
Other expenses	6	5	5
Charity and donation	1	1	1
Total Opex	145	158	173
EBITDA	108	92	79
EBITDA margin	43%	37%	31%

Source: MOSL, Company

Exhibit 3: Comparison of EV/tower and EV/tenancy under different scenarios (FY20E, INR b)

	Infratel Consol.	All stock consideration	Cash election by Providence	Cash election by Vodafone Idea	Cash election by Vodafone Idea & Providence
Operational metrics					
Towers ('000)	95.6	169.8	169.8	169.8	169.8
Tenancies ('000)	188.9	333.4	333.4	333.4	333.4
Tenancy Factor (x)	1.9	1.9	1.9	1.9	1.9
Rental/tenant (INR)	34.8	34.0	34.0	34.0	34.0
Valuation Metrics					
No of shares (m)	1,850	2,932	2,869	2,724	2,661
Enterprise Value (INR b)	454	707	706	704	704
EV/EBITDA (x)	8.9	9.0	9.0	9.0	8.9
EV/Tower (INR m)	4.7	4.2	4.2	4.1	4.1
EV/Tenancy (INR m)	2.4	2.1	2.1	2.1	2.1
Net Debt/EBITDA (x)	-1.1	-1.3	-1.1	-0.6	-0.4

Source: MOSL, Company

Exhibit 4: Post-merger net debt working under different scenarios (FY20E, INR b)

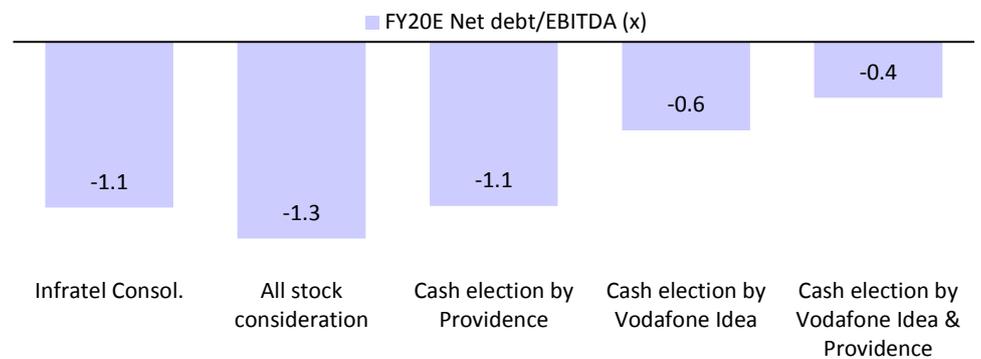
	All stock consideration	Cash election by Providence	Cash election by Vodafone Idea	Cash election by Vodafone Idea & Providence
Before payment - Net Debt/(Cash)	-97	-97	-97	-97
Payment to Vodafone Idea	0	0	55	55
Payment to Providence	0	16	0	16
Cash savings on dividend by Indus	-2	-2	-2	-2
After payment - Net Debt/(Cash)	-99	-83	-45	-28

Source: MOSL, Company

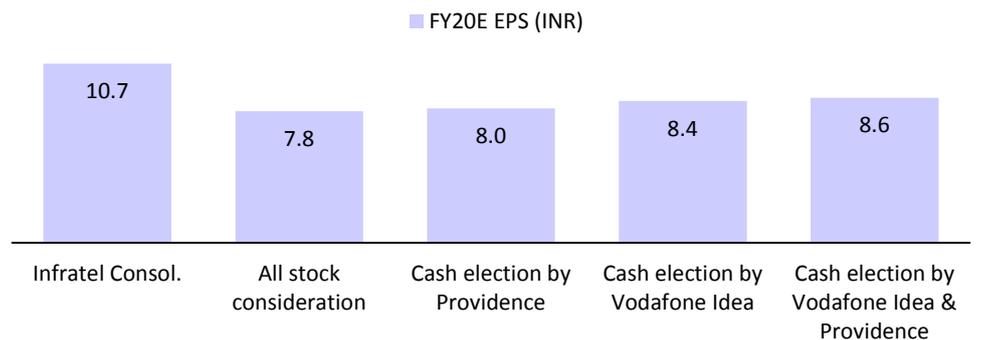
Exhibit 5: Working for payment to Vodafone Idea and Providence

Particulars	INR b
Infratel Consol.	
Enterprise Value (FY19E)	455
EBITDA (FY18)	64
EV/EBITDA	7.1
Indus 100%	
EV/EBITDA discounted @ 10% to Infratel Consol. EV/EBITDA	6.4
EBITDA (FY18)	77
Enterprise Value (FY19E)	495
Equity Value (FY19E)	490
Vodafone Idea	
Stake in Indus	11.15%
Equity Value	55
Providence	
Stake in Indus	3.35%
Equity Value	16

Source: MOSL, Company

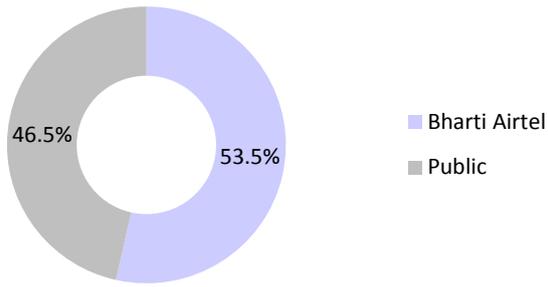
Exhibit 6: FY20E Net debt/EBITDA under different scenarios (x)

Source: MOSL, Company

Exhibit 7: FY20E EPS under different scenarios (INR)

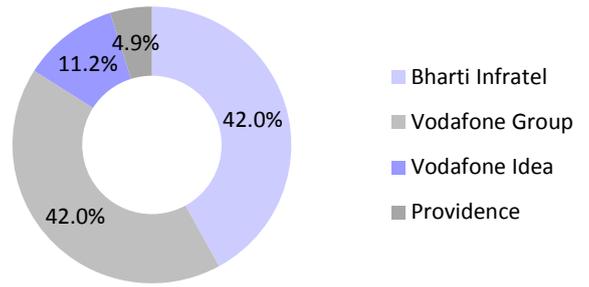
Source: MOSL, Company

Exhibit 8: Pre-merger BHIN shareholding



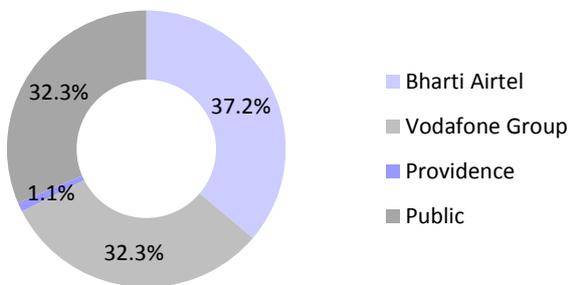
Source: MOSL, Company

Exhibit 9: Pre-merger Indus shareholding



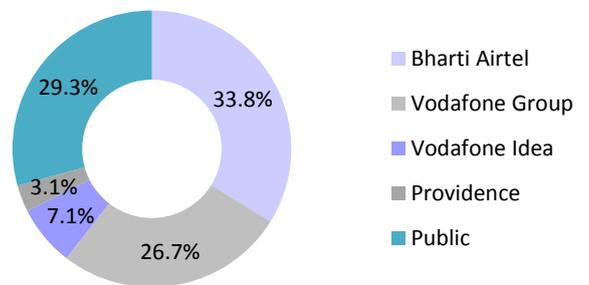
Source: MOSL, Company

Exhibit 10: Post-merger shareholding: Vodafone Idea sells 11.15% stake and Providence sells 3.35% stake



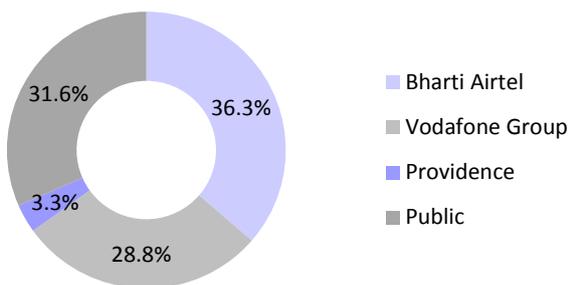
Source: MOSL, Company

Exhibit 11: Post-merger shareholding: All stock consideration



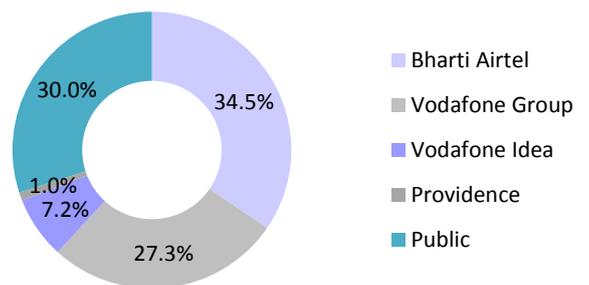
Source: MOSL, Company

Exhibit 12: Post-merger shareholding: Vodafone Idea sells 11.15% stake but Providence does not sell 3.35% stake



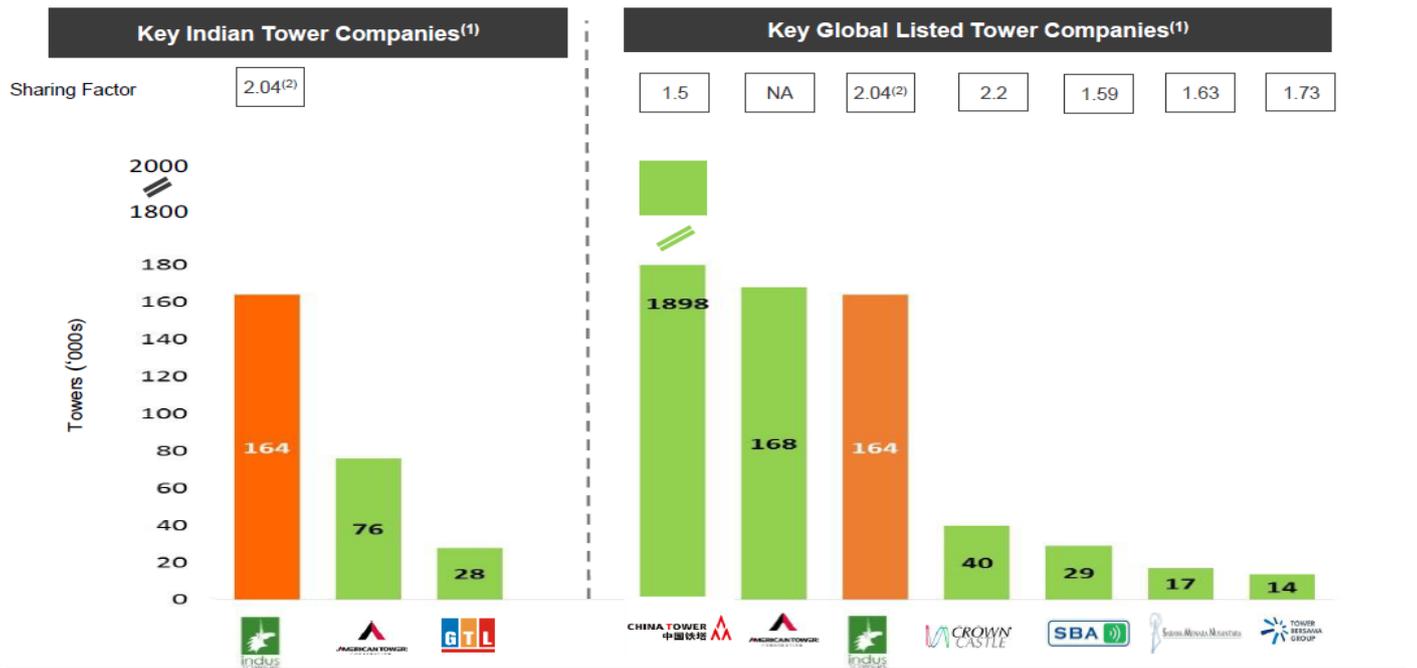
Source: MOSL, Company

Exhibit 13: Post-merger shareholding: Vodafone Idea does not sell stake but Providence sells 3.35% stake



Source: MOSL, Company

Exhibit 14: Comparison of towers and sharing factor across players in India and globally



Source: MOSL, Company

Exhibit 15: Players in the tower industry



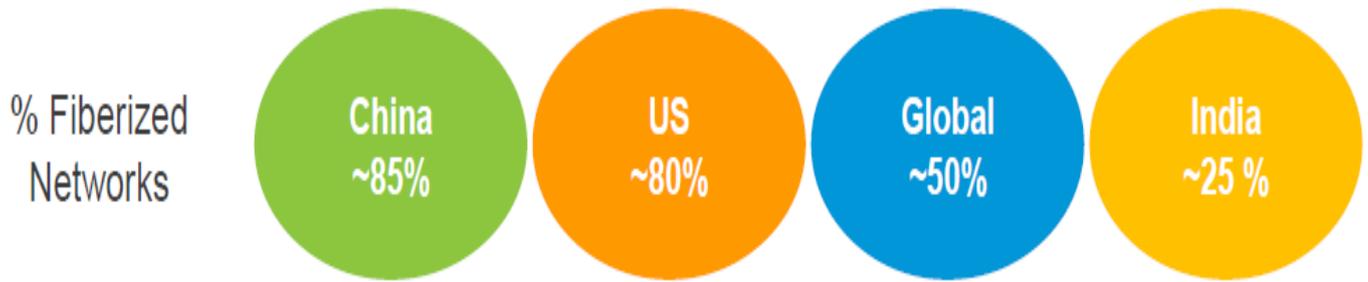
Source: MOSL, Company

Exhibit 16: High backhaul capacity needs call for Fiber

Backhaul Capacity per BTS	
2G	2 – 4 Mbps
3G	12 – 30 Mbps
4G	30 – 120 Mbps
5G	> 1 Gbps

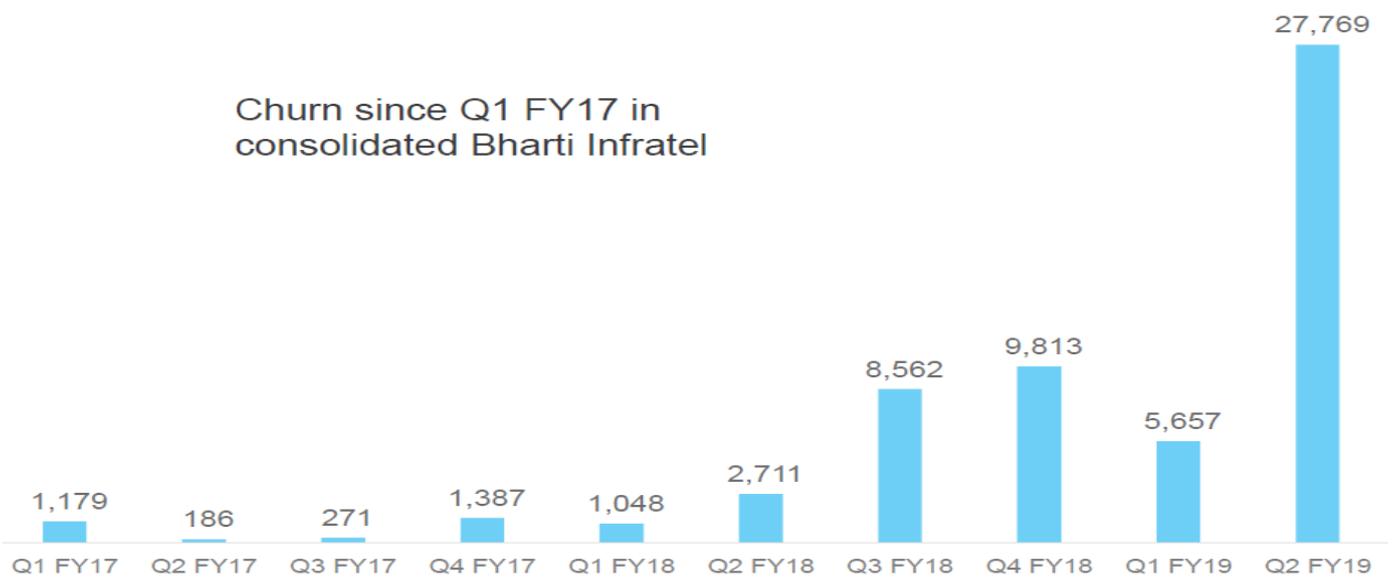
Source: MOSL, Company

Exhibit 17: Global comparison of fiberized network penetration (%)



Source: MOSL, Company

Exhibit 18: Operator consolidation impact on Bharti Infratel



Source: MOSL, Company

Exhibit 19: Bhopal Smart City: Architecture



Source: MOSL, Company

Financials and Valuations

Consolidated - Income Statement								(INR Million)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18	FY19E	FY20E
Total Income from Operations	1,02,720	1,08,267	1,16,683	1,23,314	1,34,237	1,44,896	1,45,611	1,48,289
Change (%)	8.7	5.4	7.8	5.7	8.9	7.9	0.5	1.8
Power and fuel	38,016	40,612	41,950	42,598	46,533	50,772	59,176	65,685
Rent	10,876	8,886	9,460	10,322	11,628	12,615	12,745	13,640
Employee benefits expenses	3,341	3,670	3,997	4,279	4,679	5,002	4,888	5,012
Other Expenses	12,437	11,098	11,235	12,006	12,428	12,706	12,025	12,717
Total Expenditure	64,670	64,266	66,642	69,205	75,268	81,095	88,833	97,053
% of Sales	63.0	59.4	57.1	56.1	56.1	56.0	61.0	65.4
EBITDA	38,050	44,001	50,041	54,109	58,969	63,801	56,777	51,236
Margin (%)	37.0	40.6	42.9	43.9	43.9	44.0	39.0	34.6
Depreciation	22,199	21,259	21,847	22,235	22,626	23,462	25,171	25,773
EBIT	15,851	22,742	28,194	31,874	36,343	40,339	31,607	25,464
Int. and Finance Charges	3,945	3,997	2,902	-1,847	-4,414	0	-4,696	-4,411
Other Income	3,379	4,487	5,223	2,048	1,455	2,423	0	0
PBT bef. EO Exp.	15,285	23,232	30,515	35,769	42,212	42,762	36,302	29,875
EO Items	22	0	0	0	0	-500	-357	0
PBT after EO Exp.	15,307	23,232	30,515	35,769	42,212	42,262	35,945	29,875
Total Tax	5,282	8,053	10,591	13,293	14,742	17,325	13,428	10,157
Tax Rate (%)	34.5	34.7	34.7	37.2	34.9	41.0	37.4	34.0
Minority Interest	0	0	0	0	0	0	0	0
Reported PAT	10,025	15,179	19,924	22,476	27,470	24,937	22,518	19,717
Adjusted PAT	10,011	15,179	19,924	22,476	27,470	25,232	22,741	19,717
Change (%)	33.3	51.6	31.3	12.8	22.2	-8.1	-9.9	-13.3
Margin (%)	9.7	14.0	17.1	18.2	20.5	17.4	15.6	13.3

Consolidated - Balance Sheet								(INR Million)
Y/E March	FY13	FY14	FY15	FY16	FY17	FY18	FY19E	FY20E
Equity Share Capital	18,887	18,893	18,938	18,967	18,496	18,496	18,496	18,496
Total Reserves	1,53,038	1,61,489	1,51,262	1,64,512	1,36,369	1,51,048	1,43,528	1,31,063
Net Worth	1,71,925	1,80,382	1,70,200	1,83,479	1,54,865	1,69,544	1,62,024	1,49,559
Total Loans	32,296	26,836	17,131	10,767	22,249	22,402	22,402	22,402
Deferred Tax Liabilities	7,610	11,249	12,247	12,249	7,150	6,223	6,223	6,223
Capital Employed	2,11,831	2,18,467	1,99,578	2,06,495	1,84,264	1,98,169	1,90,649	1,78,184
Net Fixed Assets	1,63,239	1,53,205	1,48,121	1,44,868	1,36,326	1,30,740	1,17,864	1,10,191
Capital WIP	1,723	1,527	2,260	2,245	2,568	4,066	4,066	4,066
Total Investments	38,911	74,803	58,822	38,811	56,211	67,850	67,850	67,850
Curr. Assets, Loans & Adv.	73,057	56,821	62,344	83,265	53,350	37,207	44,229	44,105
Account Receivables	8,554	3,075	3,532	1,916	3,664	9,185	8,247	8,302
Cash and Bank Balance	1,267	1,655	9,120	31,916	22,970	759	8,690	9,003
Loans and Advances	63,236	52,091	49,692	49,433	26,716	27,263	27,291	26,799
Curr. Liability & Prov.	65,099	67,889	71,969	62,694	64,191	41,694	43,360	48,028
Account Payables	7,106	1,894	1,342	959	17,387	18,580	19,901	20,585
Other Current Liabilities	42,090	45,422	43,694	41,139	40,699	16,448	16,791	20,772
Provisions	15,903	20,573	26,933	20,596	6,105	6,666	6,669	6,672
Net Current Assets	7,958	-11,068	-9,625	20,571	-10,841	-4,487	869	-3,923
Appl. of Funds	2,11,831	2,18,467	1,99,578	2,06,495	1,84,264	1,98,169	1,90,649	1,78,184

E: MOSL Estimates

Financials and Valuations

Ratios

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18	FY19E	FY20E
Basic (INR)								
EPS	5.3	8.0	10.5	11.8	14.9	13.6	12.3	10.7
Cash EPS	17.1	19.3	22.1	23.6	27.1	26.3	25.9	24.6
BV/Share	91.0	95.5	89.9	96.7	83.7	91.7	87.6	80.9
DPS	3.0	4.4	11.0	3.0	16.0	14.0	14.0	15.0
Payout (%)	65.6	63.5	121.0	29.2	125.0	120.5	133.4	163.2
Valuation (x)								
P/E					19.2	20.9	23.2	26.8
Cash P/E					10.5	10.8	11.0	11.6
P/BV					3.4	3.1	3.3	3.5
EV/Sales					3.5	3.3	3.3	3.2
EV/EBITDA					8.0	7.6	8.3	9.2
Dividend Yield (%)	0.9	1.3	3.3	0.9	5.6	4.9	4.9	5.3
FCF per share	10.7	13.8	11.5	12.9	10.6	9.1	18.0	15.2
Return Ratios (%)								
RoE	6.3	8.6	11.4	12.7	16.2	15.6	13.7	12.7
RoCE	6.6	8.6	11.1	11.2	13.2	13.7	10.5	9.4
RoIC	6.0	9.6	13.6	15.2	20.0	20.9	16.8	16.2
Working Capital Ratios								
Fixed Asset Turnover (x)	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Asset Turnover (x)	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8
Inventory (Days)	0	0	0	0	0	0	0	0
Debtor (Days)	30	10	11	6	10	23	21	20
Creditor (Days)	25	6	4	3	47	47	50	51
Leverage Ratio (x)								
Current Ratio	1.1	0.8	0.9	1.3	0.8	0.9	1.0	0.9
Interest Cover Ratio	4.0	5.7	9.7	-17.3	-8.2	NA	-6.7	-5.8
Net Debt/Equity	0.0	-0.3	-0.3	-0.3	-0.4	-0.3	-0.3	-0.4

Consolidated - Cash Flow Statement

(INR Million)

Y/E March	FY13	FY14	FY15	FY16	FY17	FY18	FY19E	FY20E
OP/(Loss) before Tax	15,307	23,232	30,515	36,207	35,797	42,262	35,945	29,875
Depreciation	22,199	21,259	21,847	22,693	11,657	23,462	25,171	25,773
Interest & Finance Charges	3,717	3,864	2,946	2,181	365	0	-4,696	-4,411
Direct Taxes Paid	-3,722	-4,345	-8,420	-11,547	-7,961	-17,325	-13,428	-10,157
(Inc)/Dec in WC	3,463	1,160	-1,655	630	-1,017	-28,565	2,576	5,105
CF from Operations	40,964	45,170	45,233	50,164	38,841	19,834	45,569	46,184
Others	-4,452	-5,646	-5,338	-6,218	-10,179	16,430	0	0
CF from Operating incl EO	36,512	39,524	39,895	43,946	28,662	36,264	45,569	46,184
(Inc)/Dec in FA	-16,173	-13,389	-18,144	-19,433	-9,060	-19,374	-12,295	-18,099
Free Cash Flow	20,339	26,135	21,751	24,513	19,602	16,890	33,273	28,085
(Pur)/Sale of Investments	-34,795	-35,977	17,588	25,887	8,913	-11,639	0	0
Others	-6,976	25,904	17	7,504	970	5,680	3,257	3,257
CF from Investments	-57,944	-23,462	-539	13,958	823	-25,333	-9,038	-14,842
Issue of Shares	31,543	57	490	338	-19,969	0	0	0
Inc/(Dec) in Debt	124	-4,254	-7,601	-8,755	0	154	0	0
Interest Paid	-3,715	-3,805	-3,010	-2,180	0	0	4,696	4,411
Dividend Paid	-5,721	-7,003	-21,755	-15,676	-6,679	-30,038	-30,038	-32,183
Others	0	0	0	0	0	0	0	0
CF from Fin. Activity	22231	-15005	-31876	-26273	-26,648	-29,885	-25,342	-27,772
Inc/Dec of Cash	799	1,057	7,480	31,631	2,837	-18,954	11,188	3,570
Opening Balance	468	598	1,640	285	20,133	19,713	-2,498	5,433
Closing Balance	1,267	3,009	7,982	31,916	22,970	759	8,690	9,003

E: MOSL Estimates

Explanation of Investment Rating	
Investment Rating	Expected return (over 12-month)
BUY	>=15%
SELL	< - 10%
NEUTRAL	< - 10 % to 15%
UNDER REVIEW	Rating may undergo a change
NOT RATED	We have forward looking estimates for the stock but we refrain from assigning recommendation

*In case the recommendation given by the Research Analyst becomes inconsistent with the investment rating legend, the Research Analyst shall within 28 days of the inconsistency, take appropriate measures to make the recommendation consistent with the investment rating legend.

Disclosures

The following Disclosures are being made in compliance with the SEBI Research Analyst Regulations 2014 (herein after referred to as the Regulations).

Motilal Oswal Securities Ltd. (MOSL)* is a SEBI Registered Research Analyst having registration no. INH000000412. MOSL, the Research Entity (RE) as defined in the Regulations, is engaged in the business of providing Stock broking services, Investment Advisory Services, Depository participant services & distribution of various financial products. MOSL is a subsidiary company of Motilal Oswal Financial Service Ltd. (MOFSL). MOFSL is a listed public company, the details in respect of which are available on www.motilaloswal.com. MOSL is registered with the Securities & Exchange Board of India (SEBI) and is a registered Trading Member with National Stock Exchange of India Ltd. (NSE) and Bombay Stock Exchange Limited (BSE), Multi Commodity Exchange of India (MCX) & National Commodity & Derivatives Exchange Ltd. (NCDEX) for its stock broking activities & is Depository participant with Central Depository Services Limited (CDSL) & National Securities Depository Limited (NSDL) and is member of Association of Mutual Funds of India (AMFI) for distribution of financial products. Details of associate entities of Motilal Oswal Securities Limited are available on the website at <http://onlinereports.motilaloswal.com/Dormant/documents/List%20of%20Associate%20companies.pdf>

MOSL and its associate company(ies), their directors and Research Analyst and their relatives may; (a) from time to time, have a long or short position in, act as principal in, and buy or sell the securities or derivatives thereof of companies mentioned herein. (b) be engaged in any other transaction involving such securities and earn brokerage or other compensation or act as a market maker in the financial instruments of the company(ies) discussed herein or act as an advisor or lender/borrower to such company(ies) or may have any other potential conflict of interests with respect to any recommendation and other related information and opinions.; however the same shall have no bearing whatsoever on the specific recommendations made by the analyst(s), as the recommendations made by the analyst(s) are completely independent of the views of the associates of MOSL even though there might exist an inherent conflict of interest in some of the stocks mentioned in the research report

MOSL and / or its affiliates do and seek to do business including investment banking with companies covered in its research reports. As a result, the recipients of this report should be aware that MOSL may have a potential conflict of interest that may affect the objectivity of this report. Compensation of Research Analysts is not based on any specific merchant banking, investment banking or brokerage service transactions. Details of pending Enquiry Proceedings of Motilal Oswal Securities Limited are available on the website at <https://galaxy.motilaloswal.com/ResearchAnalyst/PublishViewLitigation.aspx>

A graph of daily closing prices of securities is available at www.nseindia.com, www.bseindia.com. Research Analyst views on Subject Company may vary based on Fundamental research and Technical Research. Proprietary trading desk of MOSL or its associates maintains arm's length distance with Research Team as all the activities are segregated from MOSL research activity and therefore it can have an independent view with regards to Subject Company for which Research Team have expressed their views.

Regional Disclosures (outside India)

This report is not directed or intended for distribution to or use by any person or entity resident in a state, country or any jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject MOSL & its group companies to registration or licensing requirements within such jurisdictions.

For Hong Kong:

This report is distributed in Hong Kong by Motilal Oswal capital Markets (Hong Kong) Private Limited, a licensed corporation (CE AYY-301) licensed and regulated by the Hong Kong Securities and Futures Commission (SFC) pursuant to the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong) "SFO". As per SEBI (Research Analyst Regulations) 2014 Motilal Oswal Securities (SEBI Reg No. INH000000412) has an agreement with Motilal Oswal capital Markets (Hong Kong) Private Limited for distribution of research report in Hong Kong. This report is intended for distribution only to "Professional Investors" as defined in Part I of Schedule 1 to SFO. Any investment or investment activity to which this document relates is only available to professional investor and will be engaged only with professional investors." Nothing here is an offer or solicitation of these securities, products and services in any jurisdiction where their offer or sale is not qualified or exempt from registration. The Indian Analyst(s) who compile this report is/are not located in Hong Kong & are not conducting Research Analysis in Hong Kong.

For U.S.

Motilal Oswal Securities Limited (MOSL) is not a registered broker - dealer under the U.S. Securities Exchange Act of 1934, as amended (the "1934 act") and under applicable state laws in the United States. In addition MOSL is not a registered investment adviser under the U.S. Investment Advisers Act of 1940, as amended (the "Advisers Act" and together with the 1934 Act, the "Acts"), and under applicable state laws in the United States. Accordingly, in the absence of specific exemption under the Acts, any brokerage and investment services provided by MOSL, including the products and services described herein are not available to or intended for U.S. persons. This report is intended for distribution only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the Exchange Act and interpretations thereof by SEC (henceforth referred to as "major institutional investors"). This document must not be acted on or relied on by persons who are not major institutional investors. Any investment or investment activity to which this document relates is only available to major institutional investors and will be engaged in only with major institutional investors. In reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act") and interpretations thereof by the U.S. Securities and Exchange Commission ("SEC") in order to conduct business with Institutional Investors based in the U.S., MOSL has entered into a chaperoning agreement with a U.S. registered broker-dealer, Motilal Oswal Securities International Private Limited. ("MOSIPL"). Any business interaction pursuant to this report will have to be executed within the provisions of this chaperoning agreement.

The Research Analysts contributing to the report may not be registered /qualified as research analyst with FINRA. Such research analyst may not be associated persons of the U.S. registered broker-dealer, MOSIPL, and therefore, may not be subject to NASD rule 2711 and NYSE Rule 472 restrictions on communication with a subject company, public appearances and trading securities held by a research analyst account.

For Singapore

In Singapore, this report is being distributed by Motilal Oswal Capital Markets Singapore Pte Ltd ("MOCMSPL") (Co.Reg. NO. 201129401Z) which is a holder of a capital markets services license and an exempt financial adviser in Singapore. As per the approved agreement under Paragraph 9 of Third Schedule of Securities and Futures Act (CAP 289) and Paragraph 11 of First Schedule of Financial Advisors Act (CAP 110) provided to MOCMSPL by Monetary Authority of Singapore. Persons in Singapore should contact MOCMSPL in respect of any matter arising from, or in connection with this report/publication/communication. This report is distributed solely to persons who qualify as "Institutional Investors", of which some of whom may consist of "accredited" institutional investors as defined in section 4A(1) of the Securities and Futures Act, Chapter 289 of Singapore ("the SFA"). Accordingly, if a Singapore person is not or ceases to be such an institutional investor, such Singapore Person must immediately discontinue any use of this Report and inform MOCMSPL.

Specific Disclosures

- 1 MOSL, Research Analyst and/or his relatives does not have financial interest in the subject company, as they do not have equity holdings in the subject company.
- 2 MOSL, Research Analyst and/or his relatives do not have actual/beneficial ownership of 1% or more securities in the subject company
- 3 MOSL, Research Analyst and/or his relatives have not received compensation/other benefits from the subject company in the past 12 months
- 4 MOSL, Research Analyst and/or his relatives do not have material conflict of interest in the subject company at the time of publication of research report
- 5 Research Analyst has not served as director/officer/employee in the subject company
- 6 MOSL has not acted as a manager or co-manager of public offering of securities of the subject company in past 12 months
- 7 MOSL has not received compensation for investment banking/ merchant banking/brokerage services from the subject company in the past 12 months
- 8 MOSL has not received compensation for other than investment banking/merchant banking/brokerage services from the subject company in the past 12 months
- 9 MOSL has not received any compensation or other benefits from third party in connection with the research report
- 10 MOSL has not engaged in market making activity for the subject company

The associates of MOSL may have:

- financial interest in the subject company
- actual/beneficial ownership of 1% or more securities in the subject company
- received compensation/other benefits from the subject company in the past 12 months
- other potential conflict of interests with respect to any recommendation and other related information and opinions.; however the same shall have no bearing whatsoever on the specific recommendations made by the analyst(s), as the recommendations made by the analyst(s) are completely independent of the views of the associates of MOSL even though there might exist an inherent conflict of interest in some of the stocks mentioned in the research report.
- acted as a manager or co-manager of public offering of securities of the subject company in past 12 months
- be engaged in any other transaction involving such securities and earn brokerage or other compensation or act as a market maker in the financial instruments of the company(ies) discussed herein or act as an advisor or lender/borrower to such company(ies)
- received compensation from the subject company in the past 12 months for investment banking / merchant banking / brokerage services or from other than said services.

The associates of MOSL has not received any compensation or other benefits from third party in connection with the research report

Above disclosures include beneficial holdings lying in demat account of MOSL which are opened for proprietary investments only. While calculating beneficial holdings, It does not consider demat accounts which are opened in name of MOSL for other purposes (i.e holding client securities, collaterals, error trades etc.). MOSL also earns DP income from clients which are not considered in above disclosures.

Analyst Certification

The views expressed in this research report accurately reflect the personal views of the analyst(s) about the subject securities or issues, and no part of the compensation of the research analyst(s) was, is, or will be directly or indirectly related to the specific recommendations and views expressed by research analyst(s) in this report.

Terms & Conditions:

This report has been prepared by MOSL and is meant for sole use by the recipient and not for circulation. The report and information contained herein is strictly confidential and may not be altered in any way, transmitted to, copied or distributed, in part or in whole, to any other person or to the media or reproduced in any form, without prior written consent of MOSL. The report is based on the facts, figures and information that are considered true, correct, reliable and accurate. The intent of this report is not recommendatory in nature. The information is obtained from publicly available media or other sources believed to be reliable. Such information has not been independently verified and no guaranty, representation of warranty, express or implied, is made as to its accuracy, completeness or correctness. All such information and opinions are subject to change without notice. The report is prepared solely for informational purpose and does not constitute an offer document or solicitation of offer to buy or sell or subscribe for securities or other financial instruments for the clients. Though disseminated to all the customers simultaneously, not all customers may receive this report at the same time. MOSL will not treat recipients as customers by virtue of their receiving this report.

Disclaimer:

The report and information contained herein is strictly confidential and meant solely for the selected recipient and may not be altered in any way, transmitted to, copied or distributed, in part or in whole, to any other person or to the media or reproduced in any form, without prior written consent. This report and information herein is solely for informational purpose and may not be used or considered as an offer document or solicitation of offer to buy or sell or subscribe for securities or other financial instruments. Nothing in this report constitutes investment, legal, accounting and tax advice or a representation that any investment or strategy is suitable or appropriate to your specific circumstances. The securities discussed and opinions expressed in this report may not be suitable for all investors, who must make their own investment decisions, based on their own investment objectives, financial positions and needs of specific recipient. This may not be taken in substitution for the exercise of independent judgment by any recipient. Each recipient of this document should make such investigations as it deems necessary to arrive at an independent evaluation of an investment in the securities of companies referred to in this document (including the merits and risks involved), and should consult its own advisors to determine the merits and risks of such an investment. The investment discussed or views expressed may not be suitable for all investors. Certain transactions -including those involving futures, options, another derivative products as well as non-investment grade securities - involve substantial risk and are not suitable for all investors. No representation or warranty, express or implied, is made as to the accuracy, completeness or fairness of the information and opinions contained in this document. The Disclosures of Interest Statement incorporated in this document is provided solely to enhance the transparency and should not be treated as endorsement of the views expressed in the report. This information is subject to change without any prior notice. The Company reserves the right to make modifications and alternations to this statement as may be required from time to time without any prior approval. MOSL, its associates, their directors and the employees may from time to time, effect or have effected an own account transaction in, or deal as principal or agent in or for the securities mentioned in this document. They may perform or seek to perform investment banking or other services for, or solicit investment banking or other business from, any company referred to in this report. Each of these entities functions as a separate, distinct and independent of each other. The recipient should take this into account before interpreting the document. This report has been prepared on the basis of information that is already available in publicly accessible media or developed through analysis of MOSL. The views expressed are those of the analyst, and the Company may or may not subscribe to all the views expressed therein. This document is being supplied to you solely for your information and may not be reproduced, redistributed or passed on, directly or indirectly, to any other person or published, copied, in whole or in part, for any purpose. This report is not directed or intended for distribution to, or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject MOSL to any registration or licensing requirement within such jurisdiction. The securities described herein may or may not be eligible for sale in all jurisdictions or to certain category of investors. Persons in whose possession this document may come are required to inform themselves of and to observe such restriction. Neither the Firm, not its directors, employees, agents or representatives shall be liable for any damages whether direct or indirect, incidental, special or consequential including lost revenue or lost profits that may arise from or in connection with the use of the information. The person accessing this information specifically agrees to exempt MOSL or any of its affiliates or employees from, any and all responsibility/liability arising from such misuse and agrees not to hold MOSL or any of its affiliates or employees responsible for any such misuse and further agrees to hold MOSL or any of its affiliates or employees free and harmless from all losses, costs, damages, expenses that may be suffered by the person accessing this information due to any errors and delays.

Registered Office Address: Motilal Oswal Tower, Rahimtullah Sayani Road, Opposite Parel ST Depot, Prabhadevi, Mumbai-400025; Tel No.: 022-3980 4263; www.motilaloswal.com. Correspondence Address: Palm Spring Centre, 2nd Floor, Palm Court Complex, New Link Road, Malad (West), Mumbai- 400 064. Tel No: 022 3080 1000. Compliance Officer: Neeraj Agarwal, Email Id: na@motilaloswal.com, Contact No.:022-38281085.

Registration details: MOSL: SEBI Registration: INZ000158836 (BSE/NSE/MCX/NCDEX); CDSL: IN-DP-16-2015; NSDL: IN-DP-NSDL-152-2000; Research Analyst: INH000000412. AMFI: ARN 17397. Investment Adviser: INA000007100. Motilal Oswal Asset Management Company Ltd. (MOAMC): PMS (Registration No.: INP000000670) offers PMS and Mutual Funds products. Motilal Oswal Wealth Management Ltd. (MOWML): PMS (Registration No.: INP000004409) offers wealth management solutions. *Motilal Oswal Securities Ltd. is a distributor of Mutual Funds, PMS, Fixed Deposit, Bond, NCDs, Insurance and IPO products. *Motilal Oswal Real Estate Investment Advisors II Pvt. Ltd. offers Real Estate products. * Motilal Oswal Private Equity Investment Advisors Pvt. Ltd. offers Private Equity products.

* MOSL has been amalgamated with Motilal Oswal Financial Services Limited (MOFSL) w.e.f August 21, 2018 pursuant to order dated July 30, 2018 issued by Hon'ble National Company Law Tribunal, Mumbai Bench. The existing registration no(s) of MOSL would be used until receipt of new MOFSL registration numbers.