



BSE UPDATE

January 2016



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About BSE



Evolution

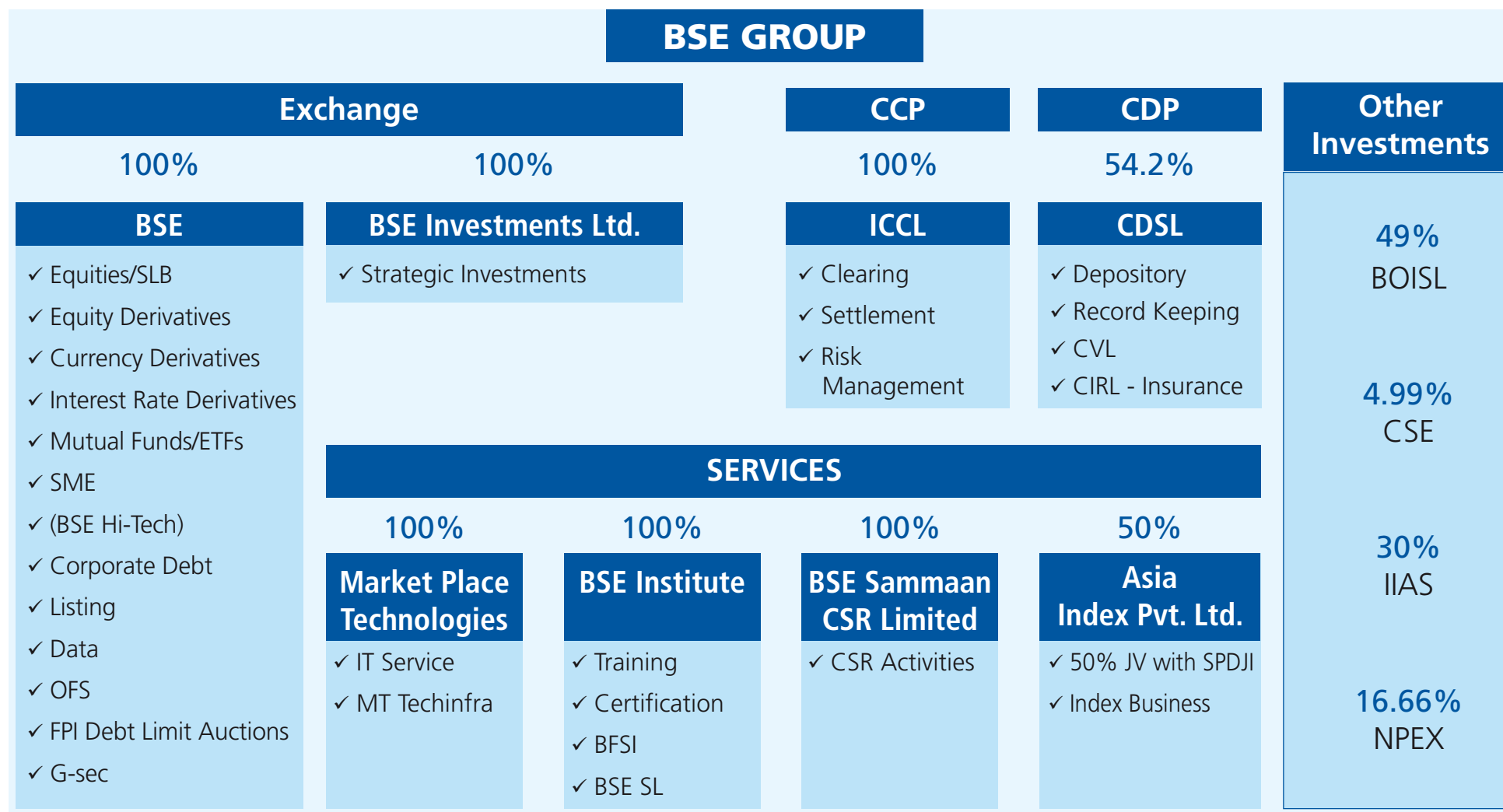


Key Milestones

Date	Milestones
09 th July 2015	BSE celebrated its 140th Foundation Day
19 th Feb 2013	BSE enters into Strategic Partnership with S&P Dow Jones Indices
15 th Jan 2011	Co-location facility at BSE - tie up with Netmagic
20 th May 2005	The BSE (Corporatisation and Demutualisation) Scheme, 2005 (the Scheme) announced by SEBI
14 th Mar 1995	BSE On-Line Trading (BOLT) system introduced
02 nd Jan 1986	S&P BSE SENSEX , country's first equity index launched (Base Year:1978-79 =100)
31 st Aug 1957	BSE granted permanent recognition under Securities Contracts (Regulation) Act (SCRA)
09 th Jul 1875	The Native Share & Stock Broker's Association formed



BSE Group – A Complete Securities Eco-system



Partners in Progress

Highlights



- ✓ Alliance with leading global exchanges
 - Deutsche Börse
 - Singapore Exchange
- ✓ Key local Indian investors provide credibility and support
- ✓ Cross listing of benchmark index S&P BSE SENSEX in BRICS countries

Overview

SBI



- ✓ 4.75% investment in BSE as key user and supporter of platform



- ✓ Calculation & maintenance of all BSE Indices
- ✓ Index Product sales abroad
- ✓ Partnership on Index products



- ✓ Index cooperation
- ✓ Board Presence
- ✓ Eurex T7 trading architecture
- ✓ 4.75% investment in BSE to expand Asia presence and increase footprint in multiple time zones



- ✓ 4.68% investment in BSE as key user and supporter of platform
- ✓ Board Presence



- ✓ 4.75% investment in BSE to build Asian gateway of securities and derivatives



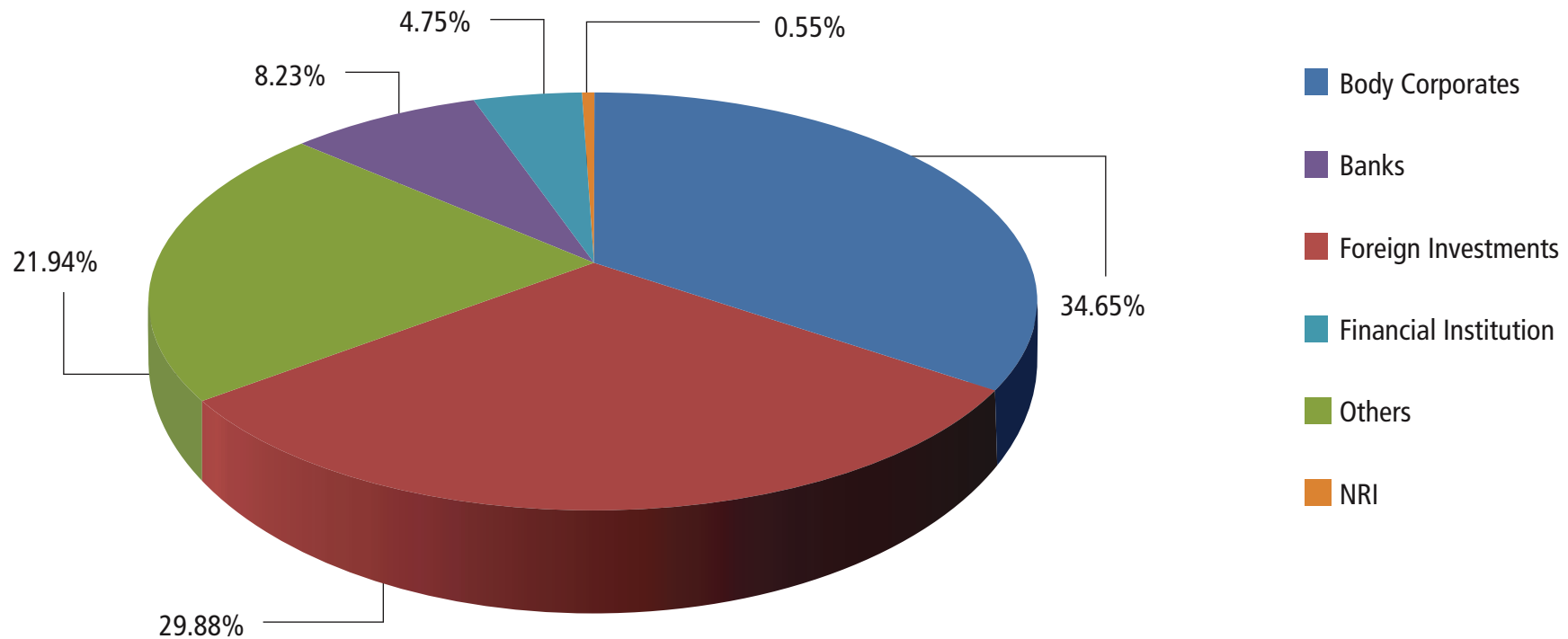
- ✓ Listing of Sensex



Shareholding Pattern

Paid up Capital Rs. 10.74 crs. | Face Value per share 1/- each

Categorywise Shareholding Pattern (%)



All 19 nationalized banks are our shareholders

Board of Directors



Mr. S. Ramadorai
Chairman
Public Interest Director



Mr. Sudhakar Rao
Public Interest Director
Retd. IAS



Mr. Dharendra Swarup
Public Interest Director
Retd. IAS



Dr. Sriprakash Kothari
Shareholder Director



Ms. Rajeshree Sabnavis
Shareholder Director

Note: Mr. S. H. Kapadia ceased to be Public Interest Director with effect from 5th January, 2016 due to his sudden demise.

Board of Directors (Contd...)



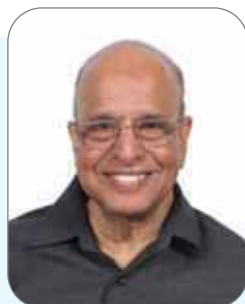
Mr. Ashishkumar Chauhan
Managing Director & CEO



Dr. Sanjiv Misra
Public Interest Director
Retd. IAS



Mr. Thomas Bendixen
Shareholder Director



Dr. Krishnaswamy Kasturirangan
Public Interest Director
Retd. Chairman, ISRO



Ms. Usha Sangwan
Shareholder Director

Management Team



Ashishkumar Chauhan
Managing Director &
Chief Executive Officer

- ✓ **Ashishkumar Chauhan** one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. At NSE, he was instrumental in setting up the first screen based trading in India, equities market and first commercial satellite communications network for India. He is best known as the father of modern financial derivatives in India. He also created several path breaking frameworks including Nifty index, NSE certifications in financial markets etc. From 2000 to 2009, he worked as the President and Chief Information Officer of Reliance group.
- ✓ He is a part of several committees of World Federation of Exchanges ("WFE"), Government of India ("GOI"), Reserve Bank of India ("RBI"), Securities and Exchange Board of India ("SEBI"), Confederation of Indian Industry ("CII"), Federation of Indian Chambers of Commerce and Industry ("FICCI"), Indian Merchants Chamber ("IMC"), India UK council ("UKIBC") etc. He is also associated with several NGOs and education institutions. His quotes and writings have been published in various newspapers, magazines and journals in India and abroad.
- ✓ He holds a B Tech in Mechanical Engineering from IIT Bombay and a PGDM from IIM Kolkata.



V Balasubramaniam
Chief Business Officer

- ✓ **V Bala** heads the business development encompassing Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform at BSE and is also in-charge of all the new initiatives planned by BSE including the setting up of Commodities Market and the international exchanges in GIFT City.
- ✓ He is a board member for Futures Industry Association – ASIA, CDSL (Central Depository Services (India) Ltd), BSE Institute Limited, BSE SAMMAN Limited and a Co-Chair of the Capital Markets Working Group of FICCI. He has over two decades of experience in the capital markets industry and has previously worked with Reliance Group and as co-founder of Marketplace Technologies.
- ✓ He was part of the core team involved in setting up the National Stock Exchange in 1993 and was involved in roll out of the Capital Market Segment, Creation of NSCCL, Nifty, NCFM and Futures & Options Segment.
- ✓ He has completed his Masters in Commerce from the University of Mumbai and is a Rank holder from the Institute of Cost Accountants of India.



Nehal Vora
Chief Regulatory Officer

- ✓ **Nehal Vora** heads the regulatory functions of the exchange including membership compliance, surveillance, inspection, investigation, regulatory communication, investor services, listing compliance, regulatory legal and corporate secretarial. He is a Board member of Indian Clearing Corporation Limited (ICCL) and of Central Depository Services Limited (CDSL). His other Board Memberships include that of National Power Exchange Limited, BSE Investments Limited, BSE Sammaan – CSR Exchange and Institutional Investor Advisory Services India Limited (IIAS).
- ✓ He has more than 19 years of experience in the area of legal and compliance. He has previously worked at the Securities and Exchange Board of India (SEBI) for 10 years and as Director, Law & Compliance at DSP Merrill Lynch Ltd heading Broking and Investment Banking Compliance
- ✓ He is the Chair of the Cyber Resilience Taskforce of The Affiliate Members Consultative Committee (AMCC) of The International Organization of Securities Commissions (IOSCO) and Chair of AMCC's Working Group on Cyber Resilience at Trading Venues
- ✓ Nehal has completed his Bachelors of Commerce from Mumbai University and Master of Management Studies from Narsee Monjee Institute of Management Studies, University of Mumbai

Management Team (Contd...)



Nayan Mehta
Chief Financial Officer

- ✓ **Nayan Mehta** has previously worked at Credit Analysis & Research Ltd. (CARE Ratings) as Joint General Manager (Accounts), CFO at Multi Commodity Exchange of India Limited and at the National Stock Exchange
- ✓ He has completed his Chartered Accountancy certification from Institute of Chartered Accountants of India and has a Bachelors in Commerce degree from University of Mumbai



Kersi Tavadia
Chief Information Officer

- ✓ **Kersi Tavadia** has over 30 years of experience in the area of Application Systems/ IT Infrastructure development and management, managing all aspects of IT operations in Financial Services, Capital markets and manufacturing companies. He has played a leading role in transforming BSE into the fastest exchange in the country with response times of less than 200 microseconds. He is instrumental in promoting, adaption of Open Source technologies and has successfully deployed one of the largest Data Warehouse on Open source platform. He has provided technical leadership & architectural vision in implementation of Mission Critical Applications across the organization including IT Infrastructure, Web portals, web based and non-web based customized solutions.
- ✓ He is amongst the Pioneers to implement single-window Multi-Exchange online trading systems to facilitate trading across multiple asset classes.



Neeraj Kulshrestha
Chief Operating Officer

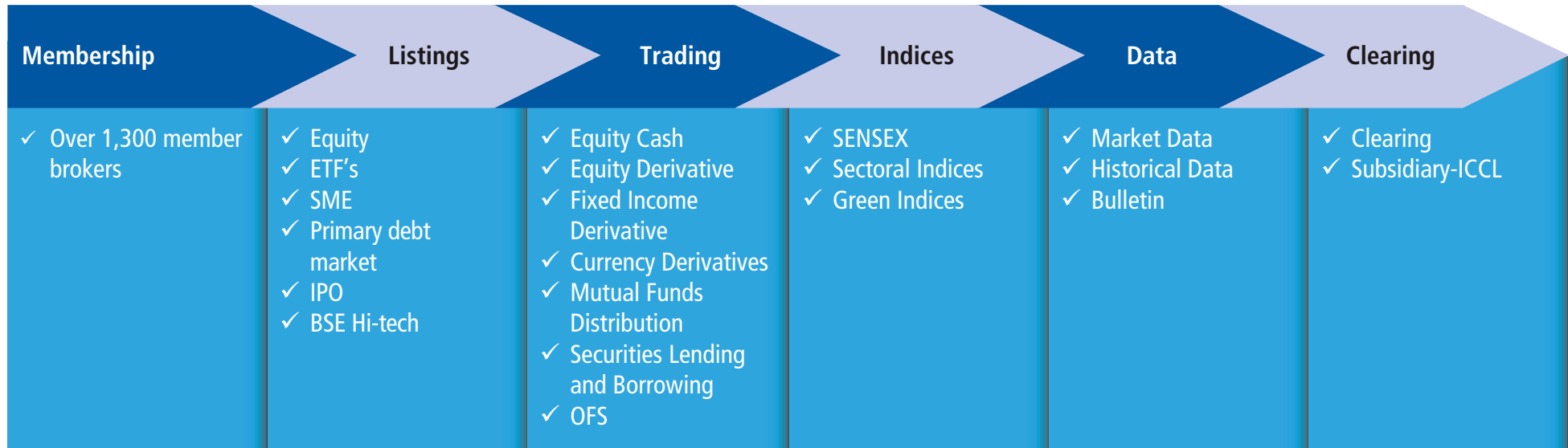
- ✓ **Neeraj Kulshrestha** is in charge of Trading, Listing and Membership Operations.
- ✓ He has about 27 year experience in Capital markets, which includes Securities Markets and General Insurance.
- ✓ Prior to BSE he was an Executive Director in Morgan Stanley India for 10 years. He was earlier with National Stock Exchange and has managed various functions like Trading Operations, Inspection and Investigation, Futures and Options Clearing and Trading. He was also the CEO of India Index Services Ltd. and Dotex International Ltd..
- ✓ He has completed his Bachelors in Computer Science from Delhi University and a MBA (Finance) from Indore University.

Business Segments



Lines of Business

Main Business



Supporting Business



5720
Listed entities
Largest on any
exchange in
the world

Our Products

Primary Markets

- ✓ IPOs / FPOs and Rights Issues
- ✓ Institutional Placement Programme (IPP)
- ✓ Reverse Book Building (RBBS)
- ✓ Offer For Sale (OFS)
- ✓ Mutual Funds (Open Ended)
- ✓ Securitized Debt Instruments
- ✓ Structured Products
- ✓ FII Auctions
- ✓ G-Sec

Secondary Market

- ✓ Equity
- ✓ Equity Derivatives
- ✓ Currency Derivatives
- ✓ Interest Rate Derivatives
- ✓ ETFs
- ✓ Debt – Corporate Bond and Government Securities.
- ✓ Mutual Funds (Close Ended)
- ✓ SME / Hi-tech
- ✓ Securities Lending and Borrowing

Global Indices Trade in rupee denominated futures

- ✓ Hang Seng
- ✓ FTSE/JSE Top 40
- ✓ MICEX
- ✓ Ibovespa

ETFs

- ✓ Over 40 Exchange Traded Funds
- ✓ ETFs accepted as collateral towards trading

Debt Market Products

- ✓ Government Securities & Corporate Debt
- ✓ Structured Products
- ✓ Securitized Debt Instruments
- ✓ Non Convertible redeemable Preference Shares

Global Rankings on Market Capitalization

Market Capitalization		
Rank	Exchange	Amount (USD Trillion)
1	NYSE	18.65
2	Nasdaq-US	7.41
3	Japan Exchange Group - Tokyo	4.81
4	Shanghai Stock Exchange	4.39
5	Euronext	3.39
6	Hong Kong Exchanges & Clearing	3.24
7	Shenzhen Stock Exchange	3.12
8	Deutsche Boerse	1.72
9	TMX Group	1.71
10	SIX Swiss Exchange	1.52
11	BSE India Limited	1.51
12	National Stock Exchange of India	1.48

Product-wise Global Rankings

CURRENCY OPTIONS*

Rank	Exchange	No. of Contracts Traded
1	National Stock Exchange India	17,30,98,832
2	BSE India	14,78,85,518
3	Moscow Exchange	1,81,00,367
4	CME Group	1,79,36,582
5	Tel Aviv SE	1,40,38,134
6	Johannesburg SE	87,56,142
7	BM&FBOVESPA	61,22,165
8	Euronext	1,09,797
9	MexDer	60,959
10	ICE Futures US	13,305

CURRENCY FUTURES*

Rank	Exchange	No. of Contracts Traded
1	Moscow Exchange	79,37,05,485
2	National Stock Exchange India	33,58,69,112
3	BSE India	19,72,24,521
4	CME Group	16,83,62,679
5	BM&FBOVESPA	10,02,19,390
6	Korea Exchange	4,48,94,496
7	Johannesburg SE	2,73,13,326
8	ICE Futures US	1,14,24,314
9	MexDer	66,37,771
10	Borsa Istanbul	11,68,473

INDEX OPTIONS *

Rank	Exchange	No. of Contracts Traded
1	National Stock Exchange India	1,78,01,98,473
2	Korea Exchange	42,18,76,526
3	Chicago Board Options Exchange	34,67,13,794
4	EUREX	34,57,15,818
5	BSE India	16,03,72,080
6	TAIFEX	15,69,00,932
7	CME Group	11,81,94,567
8	Tel Aviv SE	4,02,98,239
9	Osaka SE	3,25,32,829
10	Hong Kong Exchanges	1,99,14,039

NO. OF EQUITY TRADES*

Rank	Exchange	No. of Equity Trades
1	Shanghai Stock Exchange	44,28,806
2	Shenzhen Stock Exchange	36,68,361
3	BATS Global Markets - US	19,43,309
4	National Stock Exchange of India	15,83,278
5	Nasdaq - US	14,93,001
6	Korea Exchange	14,76,112
7	NYSE	14,55,229
8	Nigerian Stock Exchange	8,22,312
9	Japan Exchange Group - Tokyo	6,47,504
10	BATS Chi -x Europe	4,60,922
11	BSE India Limited	3,24,906

Source: World Federation of Exchanges

*Jan 2015 to Oct 2015

**Amount in thousand

Listing Business

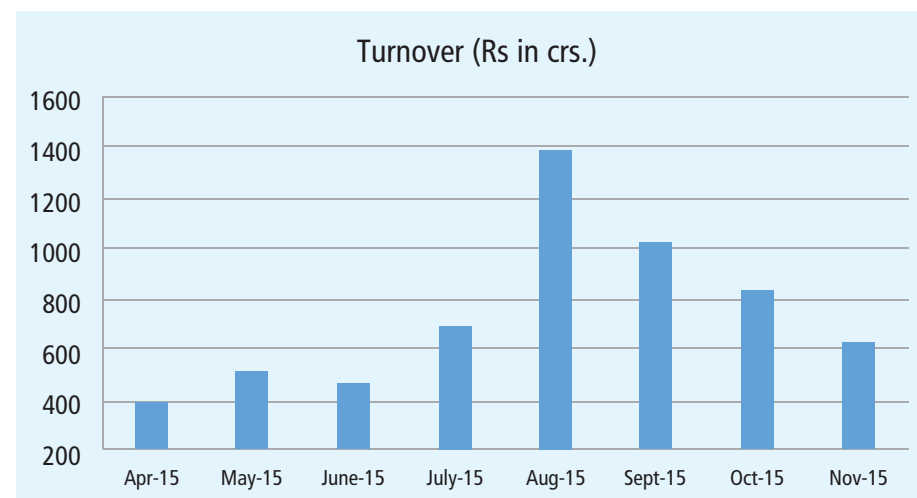


ETF - Products and Performance

- ✓ Exchange traded fund is a security that tracks an index, a commodity or a sector like an index fund or a sectoral fund but trades like a stock on an exchange.
- ✓ It is similar to a close ended mutual fund listed on stock exchanges
- ✓ BSE in its effort to bring greater participation for retail investors in the Indian landscape has tied up with market makers for ETF's

Our Top 10 ETFs		
Sr. No	Name	Underlying
1	LIQIDBEES	LIQUID
2	GOLDBEES	GOLD
3	REL GOLD ETF	GOLD
4	IDBIGOLD	GOLD
5	CPSE ETF	EQUITY
6	KOTAK SENSEX	EQUITY
7	NIFTY BEES	EQUITY
8	SBI GOLD ETS	GOLD
9	N100	EQUITY
10	HDFCFMGETF	GOLD

Turnover in FY 15-16*



*till November 2015

ETF - Competitive Advantage

Turnover Slab	BSE	NSE	Save cost @ BSE
Up to 1250 Crs	275	325	15.38%
>1250 Crs < 2500 Crs	275	320	14.06%
>2500 Crs < 5000 Crs	275	315	12.70%
>5000 Crs < 10000 Crs	275	310	11.29%
>10000 Crs < 15000 Crs	275	305	9.84%
>15000 Crs	275	300	8.33%

- ✓ BSE Charges FLAT Rs.275/- per cr. while NSE charges as per the Turnover (On incremental volume)
- ✓ Exchange transaction Fees (Rs .per cr.)

SME Platform

- ✓ BSE is the first stock exchange in India to receive approval from SEBI for a SME Platform and launch of the SME IPO Index on 14th December, 2012 aimed at tracking the companies listed on SME platform .
- ✓ BSE SME Platform facilitates capital raising to small and medium enterprises including start-up companies which are in their early stages of growth. It also provides easier entry and exit options for informed investors like angel investors, VCFs and PEs etc. and equity financing which lowers the debt burden leading to lower financing cost and healthier balance sheet.

Number of Companies Listed

117

Companies migrated to main Board

10

Total funds raised

Rs. 866 Crs.

Total Market Capitalization

Rs. 6943 crs.

Number of Market Makers

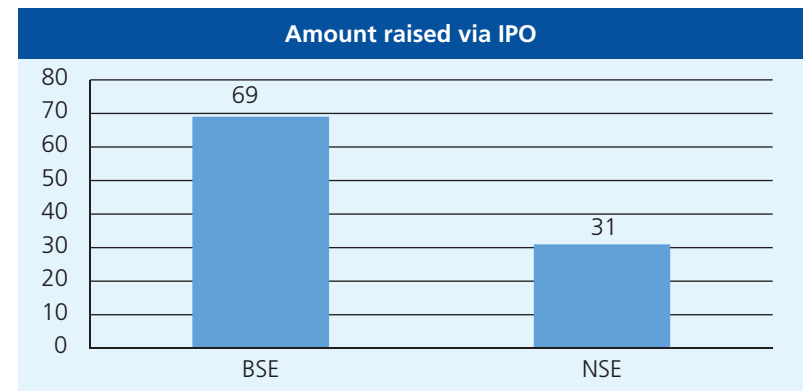
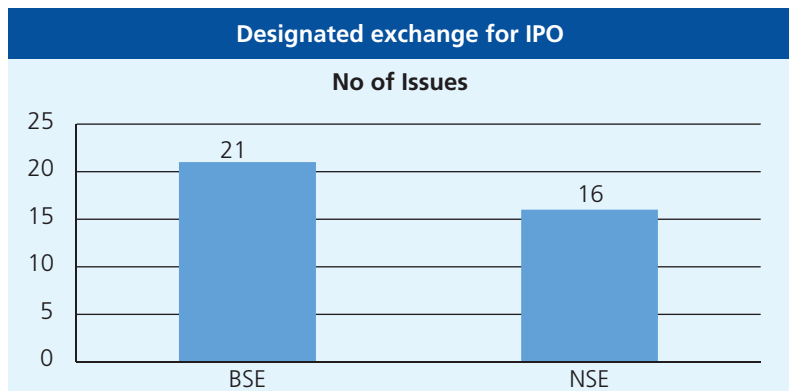
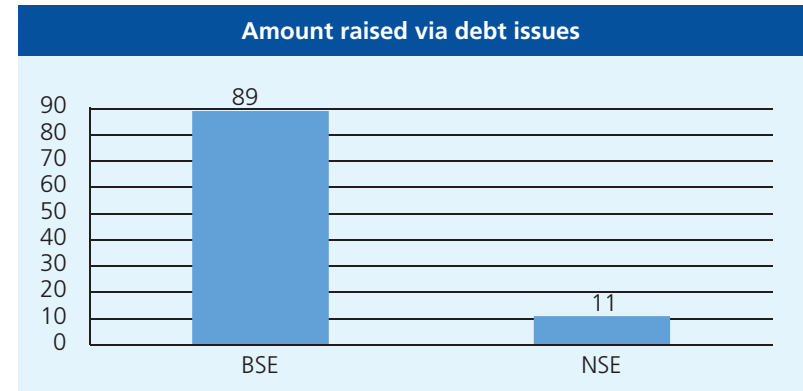
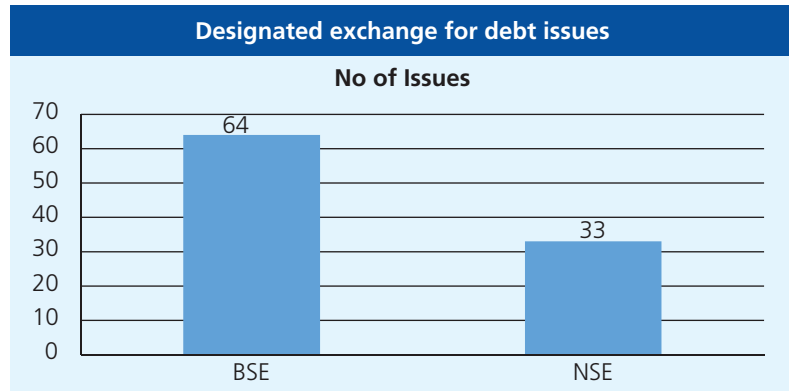
93

Average Investors per Issue

200

Primary Debt Market and IPO - Performance

- ✓ BSE is the preferred choice for listing Privately Placed Debt Instruments (PPDI). In FY14-15, BSE has listed 1575 Instruments vis-a-vis 1,301 on other Exchange. In FY15-16 till November 2015, BSE has listed 1110 Instruments vis-à-vis 975 on other Exchange.
- ✓ Out of 33 Debt Public Issues, BSE has been appointed as Designated Stock Exchange in 32 issues during the FY 15-16.
- ✓ Amongst all public debt issues over 97% of the average bids are garnered through the BSE IBBS Platform in FY15-16



As at November 2015

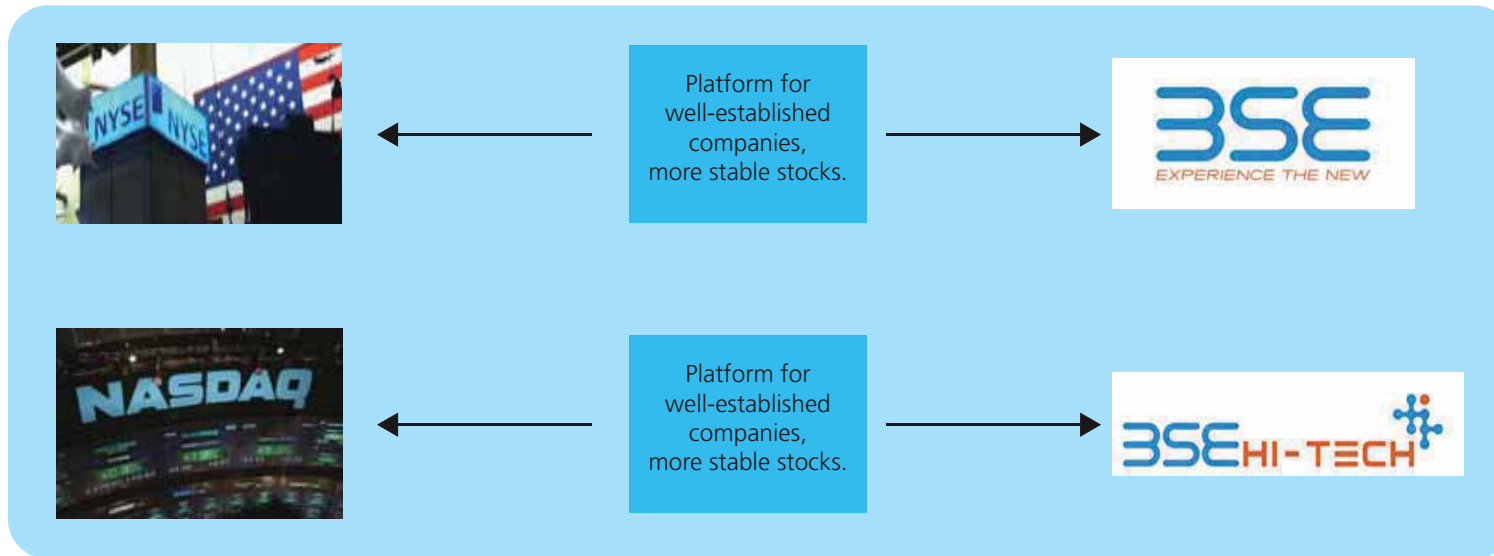
BSE Hi-Tech



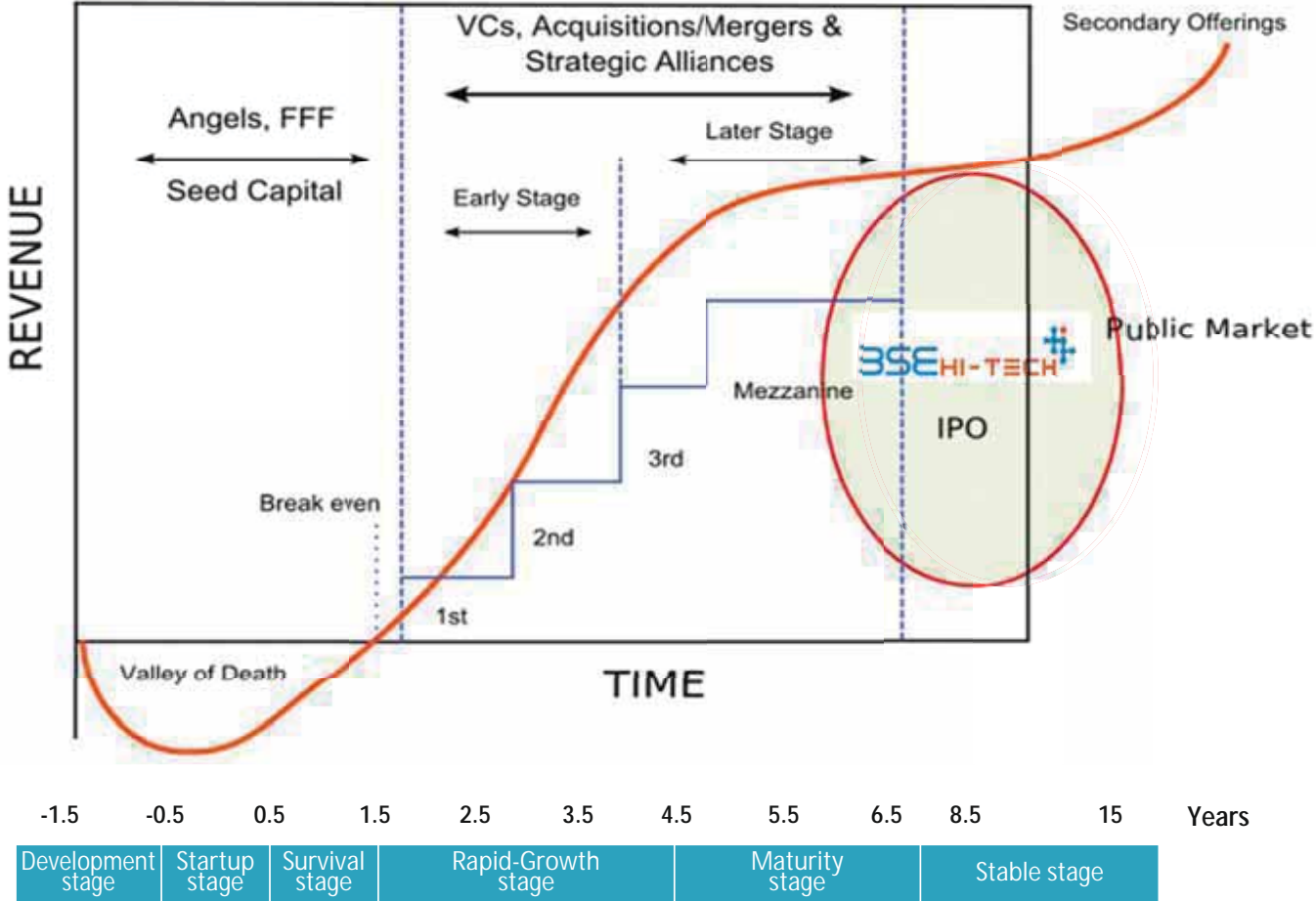
A platform for young fast growing companies requiring funds to fuel growth



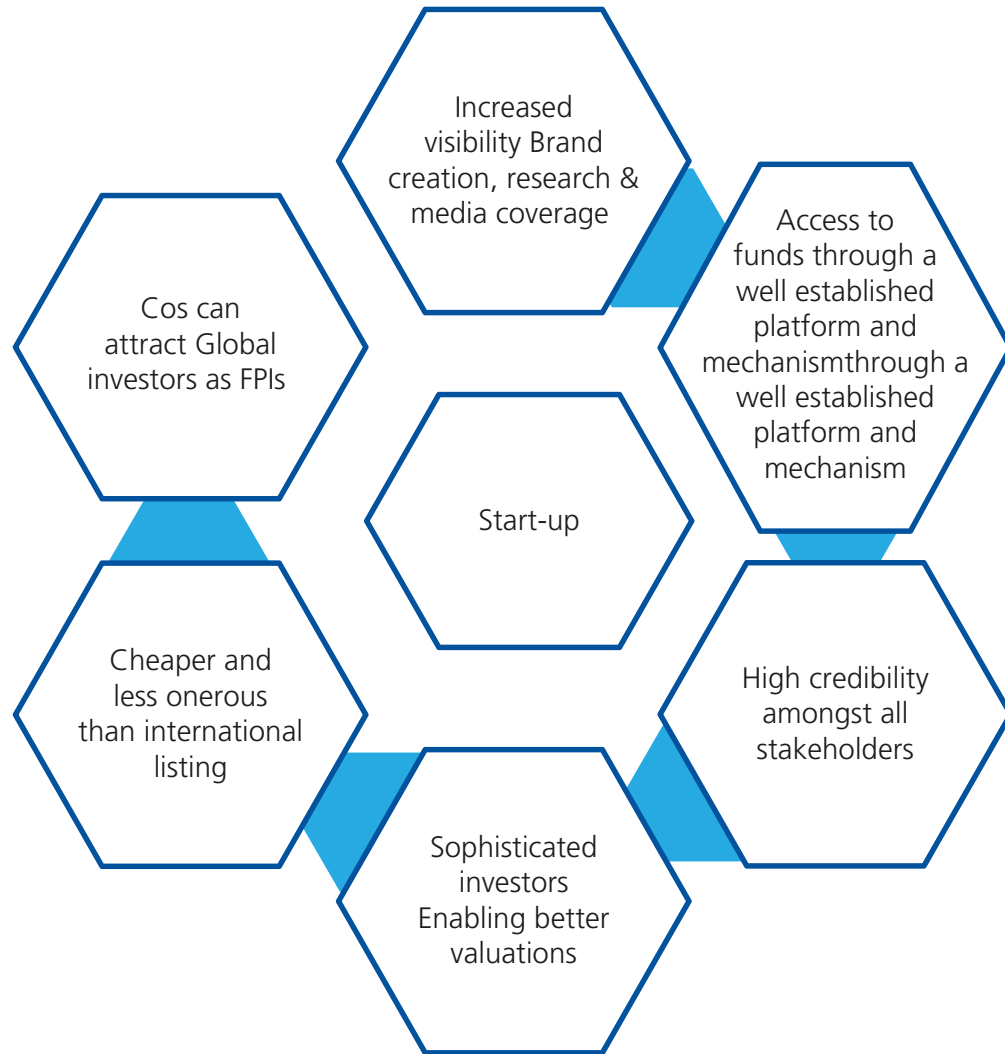
A credible exit avenue for early investors which will enable VC/PE investors to churn their portfolio and enhance liquidity for investors



Startup Financing Cycle



BSE Hi-Tech - Benefits



Employees

- ✓ ESOPS become meaningful
- ✓ Deeper engagement

Early stage investors

- ✓ Efficient exit route
- ✓ M&As made easier and swifter

Other investors

- ✓ New asset class - Opportunity to invest in fast growing companies

Trading Business



Secondary Debt Markets

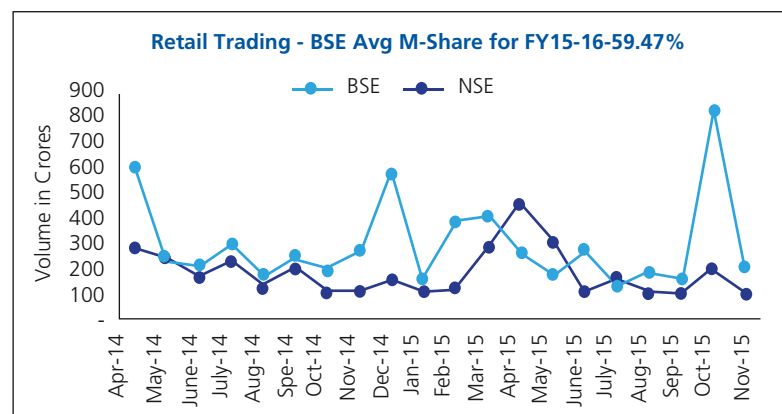
- ✓ BSE has managed to gain market share in Retail trading of Corporate Bonds from 55% in FY 13-14 to more than 63% in FY14-15. In November 2015, BSE market-share was 67%.
- ✓ Market share in Reporting volumes in Wholesale Debt Market of Government Bonds in November 2015 is 36%. In FY 14-15 volumes in this segment have exponentially increased to Rs. 2,21,233 crs vis a vis Rs.48,952 crs in FY 13-14.
- ✓ Settlement volumes of Corporate bonds for FY 15-16 (Till November, 2015) is Rs. 36,816 Cr.

Retail trading - Corporate Bonds (F group)	FY 14-15	FY 15-16
Turnover*	3,757	2,245
Members/participants**	1,353	1,358

Wholesale Segment Government Bonds	FY 14-15	FY 15-16
Turnover*	2,21,233	1,54,608
Members/participants**	130	130

Wholesale Segment - Corporate Bonds (ICDM)	FY 14-15	FY 15-16
Turnover*	2,03,387	1,47,745
Members/participants**	1,155	1,279

Settlement of Corporate Bonds and CP / CD (E-Settle)	FY 14-15	FY 15-16
Settlement of CPs / CDs.*	1,90,407	2,60,392
Members/participants**	1,155	1,279



Equity Derivatives Product Features

- ✓ Index Derivatives on
 - Investable and Broad Indices – S&P BSE SENSEX and S&P BSE 100
 - Sector Indices – S&P BSE TECK , S&P BSE BANKEX , S&P BSE OIL AND GAS.
- ✓ Maturities available:
 - Index & Stock Futures: Near, Mid, Far Month
 - Index Options: Weekly, Monthly & Long Dated – Only Exchange in India offering weekly expiring Options
 - ◆ 5 Weekly, 3 Monthly and 12 Long Dated (4 quarterly and 8 semiannual)
 - Stock Options: Weekly and Monthly
 - ◆ 5 Weekly / 3 Monthly
- ✓ Number of Strikes to be made available on daily basis - 1 In the money, 1 At the money, 1 Out of the money
- ✓ Ongoing Liquidity Enhancement Programme (LEIPS) to create lasting liquidity in BSE derivatives. Market-Makers incentivized to maintain tight spreads and deep quotes
- ✓ Lower transaction costs for all participants:
 - As Liquidity provider, you pay Zero
 - As Liquidity taker, you pay 0.05 bps of Futures contract value and 0.05 bps of Options Premium value
 - For Options, this is almost 200 times lower transaction fees compared to the other exchange

Equity Derivatives - Specifications

Products	Tick Size (INR)	Settlement Mechanism	Lot size	Contract Value*		Expiry
				INR	USD	
S&P BSE SENSEX Futures	1.00	Cash	20	5,22,913	7,861**	Last Thursday
S&P BSE -100 Futures	0.05	Cash	60	4,84,921	7,290**	Last Thursday
S&P BSE SENSEX Options	0.05	Cash	20	5,22,913	7,861**	Last Thursday-European
S&P BSE BSE -100 Options	0.05	Cash	60	4,84,921	7,290**	Last Thursday-European
Stock Futures	0.05	Cash	Based on underlying	NA	NA	Last Thursday
Stock Options	0.05	Cash	Based on underlying	NA	NA	Last Thursday-European

Equity Derivatives - Competitive Advantage

Futures	Trade at BSE	Trade at Competing Exchange A	Trade at Competing Exchange A
	bps	bps	bps
Sell Futures			
STT	-1.0	-1.0	-1.0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	-0.05*	-0.19	-0.12
Buy Futures to Square off			
STT	0	0	0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	0*	-0.19	-0.12
Net outflow	-1.09	-1.42	-1.28

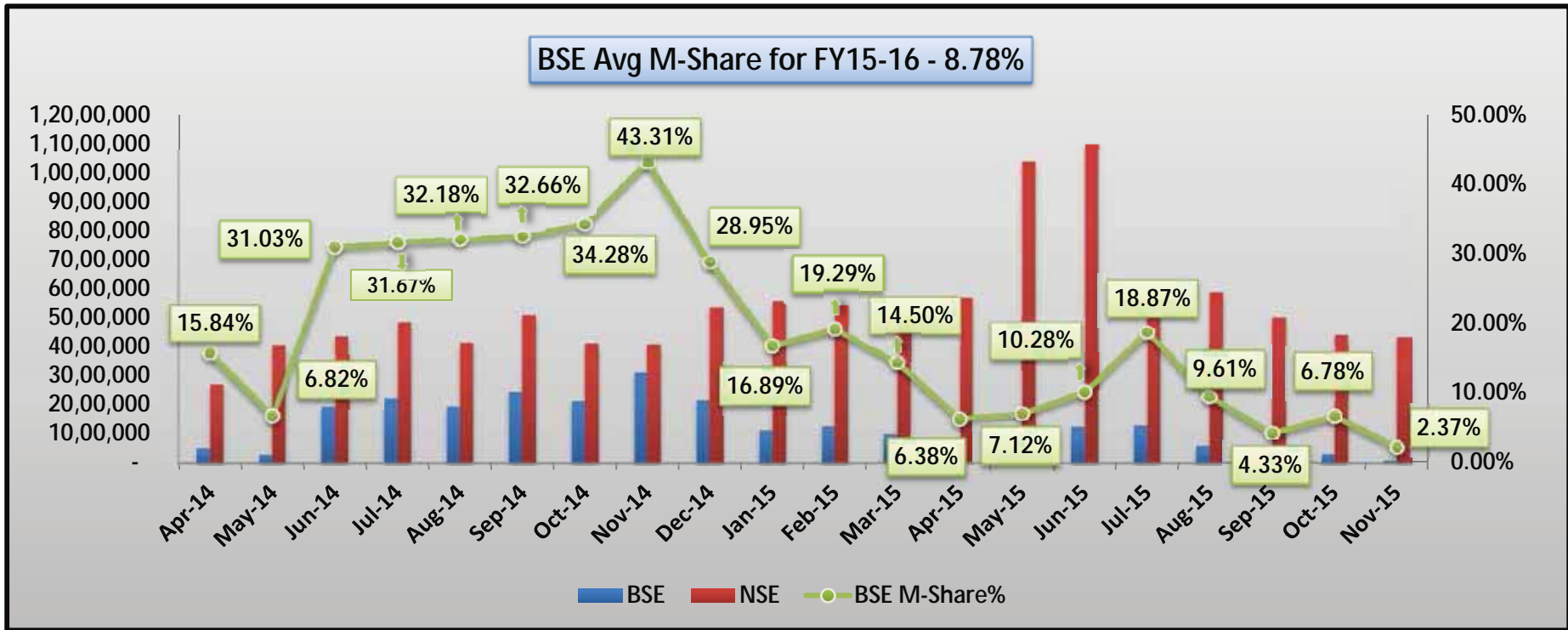
**Save 20%
of your cost!**

Options	Trade at BSE	Trade at Competing Exchange A	Trade at Competing Exchange A
	bps	bps	bps
Sell Options			
STT	-1.70	-1.70	-1.70
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	-0.05*	-5.00	-2.50
Buy Futures to Square off			
STT	0	0	0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	0*	-5.00	-2.50
Net outflow	-1.79	-11.74	-6.74

**Save 10
bps!**

* Assuming one active and one passive trade

Equity Derivatives - Market Share



Equity Derivatives - Performance

Registered for LEIPS - broker-members (till date)

564

Members who have traded*

343

Average Daily Turnover*

Futures: 110 crs

Options: 32,752 crs

Average num of contracts traded daily*

Futures: 2,791

Options: 7,84,545

Average num of contracts Open Daily*

Futures: 6,301

Options: 17,643

LEIPS – Derivatives Incentive Initiative

- ✓ BSE LEIPS was initiated in September 2011, in order to create lasting liquidity in BSE's equity derivatives segment
- ✓ The current focus of the on-going phase is to bring liquidity in index products such as S&P BSE SENSEX and S&P BSE 100
- ✓ The programme invites participants to empanel either as a Market-Maker (MM) or a General Market Participant (GMP)
- ✓ MMs have obligations to quote and maintain spreads, whereas GMPs have no obligations
- ✓ MMs avail a higher incentive, on achieving obligations. GMPs receive trading incentives
- ✓ The transaction charge for all participants, has been made zero for passive orders and 0.05bps for active orders
- ✓ Incentives are paid on a daily basis. An annual budget of USD 3.2 million + for incentives is set aside
- ✓ Co-location racks, servers and algorithmic software provided free of cost (refer last slide details)
- ✓ Additional Incentive provided for Retail Client Trades

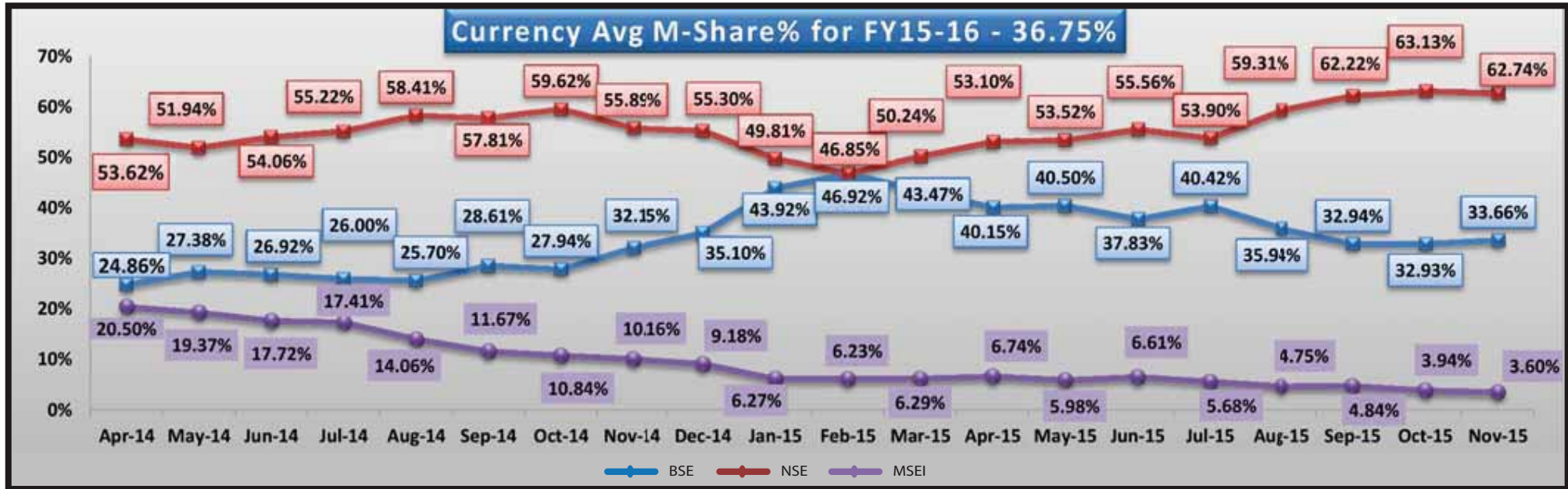
Non - LEIPS Products

- ✓ BSE introduced Maker Taker pricing for Non- LEIPS Products with effect from 10th February 2014.
- ✓ **Passive Orders:** Passive orders are defined as the orders that already exist in the order book at the time of matching (trade taking place).
- ✓ **Active Orders:** Active orders are defined as those orders that match with passive orders that already exist in the order book at the time of matching (during trade).
- ✓ Transaction charges on Index and Stock options which are part of Non- LEIPS contracts are as follows:
 - **Passive order** (price maker) to receive Rs.2,400 per cr. of premium value
 - **Active order** (price taker) to pay Rs.2,500 per cr. of Premium Value (inclusive of IPF and TGF charges)

Currency Derivatives - Competitive Advantage

Currency Futures			
	BSE	NSE	MSEI
For Turnover	ANY	2500 Cr. - 7500 Cr. Per Month	0 - 300 Crore Per Day
Exchange Transaction Fees (Rs. / Per Crore)	10	110	105
Discount		20833	-
Save your cost @ BSE upto			90.67%
	BSE	NSE	MSEI
For Turnover	ANY	7500 Cr. - 12500 Cr. Per Month	300 Cr - 600 Cr Per Day
Exchange Transaction Fees (Rs. / Per Crore)	10	110	105
Discount		20833	50%
		31250	
Save your cost @ BSE upto			90.55%
Note:			
BSE - Transaction charges on the active side of transaction only, the passive side of the transaction shall be exempted for transaction charges.			
MSEI - Discount on Daily Turnover on current month only.			
NSE - Discount on Monthly Turnover in currency futures and discount criteria as mentioned below-			
Monthly Turnover in currency futures (Rs crores)	Points earned for compliance of each of the condition		
Turnover between Rs 2,500 Crs to Rs 7,500 Crs	1 Point for each compliance for every Rs 24 Crs of turnover between Rs 2,500 Crs to Rs 7,500 Crs		
Turnover between Rs 7,500 Crs to Rs 12,500 Crs	1 Point for each compliance for every Rs 16 Crs of turnover between Rs 7,500 Crs to Rs 12,500 Crs		
Turnover above Rs 12,500 Crs	1 Point for each compliance for every Rs 8 Crs of turnover above Rs 12,500 Crs.		
Each point will be valued at Rs. 100/-			
Currency Options			
	BSE	NSE	MSEI*
For Average Daily Premium Value 0- 12.5 Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	10	4000	3000
Save your cost @ BSE upto			99.75%
For Average Daily Premium Value 12.5 - 25 Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	10	3500	3000
Save your cost @ BSE upto			99.71%
For Average Daily Premium Value 25+ Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	10	3000	3000
Save your cost @ BSE upto			99.67%
*on the active side of transaction. The passive side of the transaction shall be exempted for transaction charges.			

Currency Derivatives - Market Share



Members who have traded (till date)
284

Average num of contracts traded daily*
Futures: 10,77,397 Options: 7,35,901

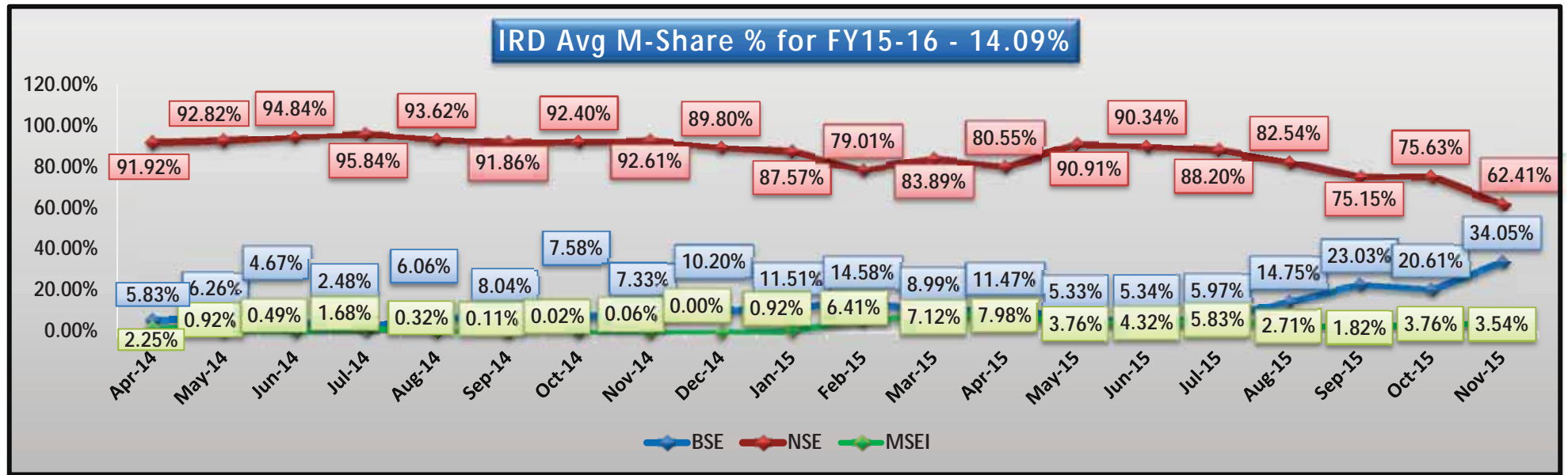
Average Daily Turnover *
Futures: 6,925 Crs Options: 4,667 Crs

Average num of contracts Open Daily*
Futures: 7,05,613 Options: 2,80,959



*Jan-15 to Nov-15

Interest Rate Derivatives - Market Share and Performance



Total Turnover*

1,07,750 crs

Average num of contracts Open Daily**

48,609

- ✓ Launched Interest Rate Futures (IRF) on 10 Year GOI Bonds on Jan 28, 2014
- ✓ Underlying Assets: Interest Rate Derivatives offers trading in following four products:
 - 91-Day T-Bill Futures | 6-year G-sec Futures | 10-year G-sec Futures | 13-Year G-sec Futures

Business Benefits to Members

- ✓ Membership at no cost and no deposit, At present 120 + registered members
- ✓ Clearing & Settlement by ICCL and Uniform Risk Management & Margin framework



*28 Jan 2014 to Nov-15. ** Avg No. of Contracts Open Daily period from Jan-15 to Nov-15

Interest Rate Derivatives - Competitive advantage

Interest Rate Derivatives			
	BSE*	NSE	MSEI
Exchange Transaction Fees (Rs. / Per Cr)	2	10	10
Save your cost @ BSE up to	80%		

Mutual Fund Distribution Platform

BSE StAR MF

MODE OF SETTLEMENT

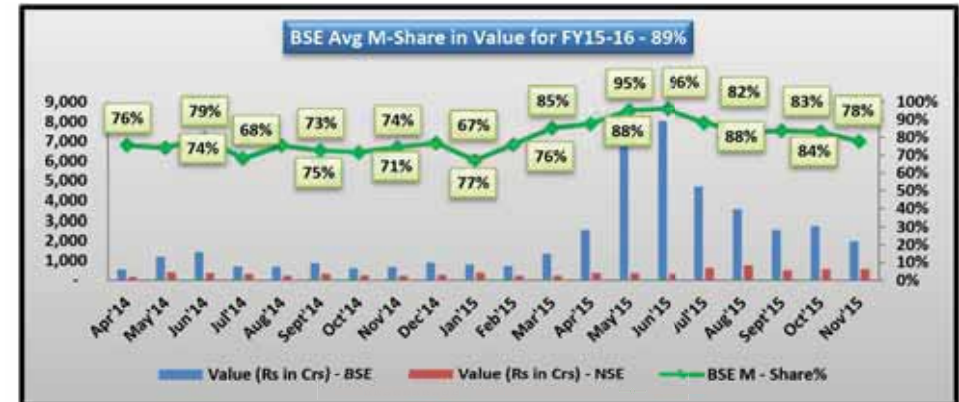
- ✓ Settlement of Funds and units through member POOL Account and MFDs / IFAs via Direct Settlement
- ✓ Majority of National Distributors (NDs) and Broker members prefer pool mode
- ✓ Pool Mode is available only with BSE. Neither NSE-NMF II nor AMFI-MFU have this model for non-demat transactions

CONNECTIVITY & DIGITIZATION

- ✓ Multi mode of Platform access
- ✓ Web-browser
- ✓ APIs over leased Lines-IML
- ✓ WEB Services over Internet
- ✓ 100% digital transaction mode, eliminating paper work from MF segment

UNIQUE PRODUCT OFFERINGS

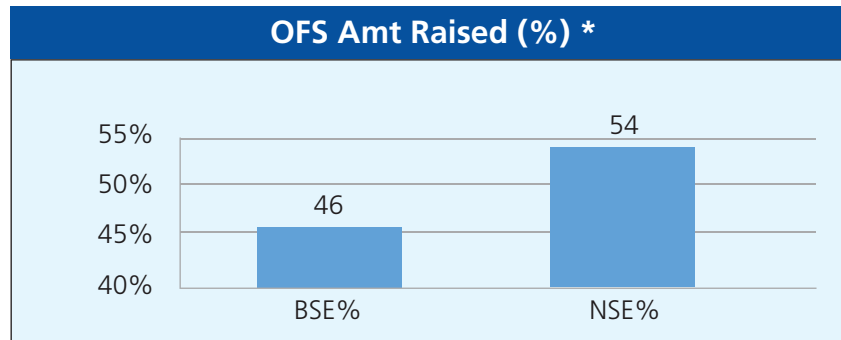
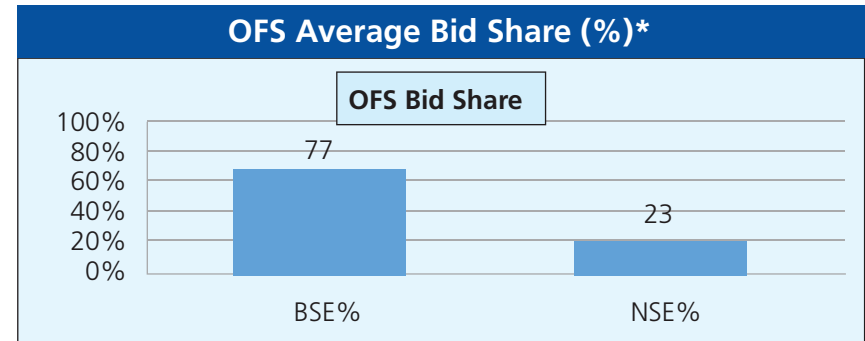
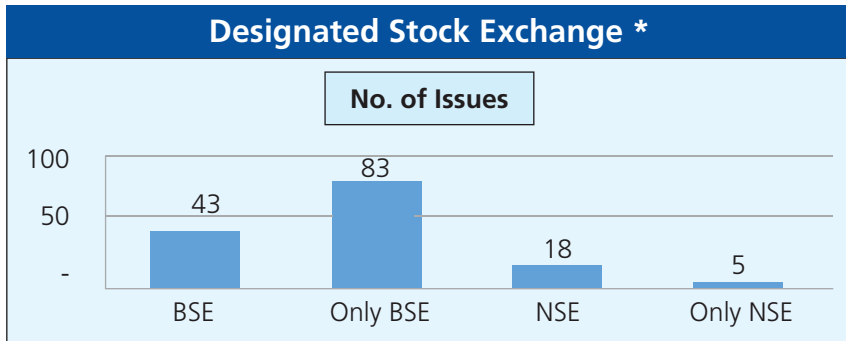
- ✓ X-SIP Facility with First order today flexibility, enabling BSE StAR MF members to start systematic investment plans (SIP) within couple of minutes instead of waiting for a month!
- ✓ Overnight Investments framework: an alternative investment avenue for idle monies by investing in MF Liquid Schemes for better returns



For Registration Process, refer: <http://ir.bseindia.com/mfdforms/members/LoginMF.aspx?expandable=0>

Offer For Sale

- ✓ BSE launched the Offer For Sale (OFS) module on iBBS (Internet based book building System) platform on 24th February, 2012.
- ✓ 149 companies have OFS issues of which BSE was appointed the Designated Stock Exchange in 126 (43 are BSE designated and 83 only BSE OFS issues). Over 500 members have participated in OFS via BSE platform.
- ✓ The process has helped the Government to raise over Rs.37,520 crs through divestment of holdings in PSUs.



*Till date Nov, 2015

Technology Initiatives



New Trading Architecture – BOLT PLUS

Bolt Plus Live

- ✓ Products available for trading
 - Currency Derivatives – 29th November, 2013
 - Interest Rates Futures - 28th January,2014
 - Equity Derivatives - 10th February,2014
 - Equity – 7th April,2014

Member Access

- ✓ API based access
 - Through existing IML API
 - Advanced High performance APIs (ETI, MDI/EMDI)

Peripheral Systems connecting to BOLT Plus

- ✓ Reference Data, Risk Management, Surveillance, Clearing & Settlement, Data Warehouse

Performance Testing & Benchmarking

- ✓ Latency : < 6 μ s (Gateway in to Gateway out)
- ✓ Network Latency for Colo Users: 18 μ s
- ✓ Throughput Capacity: 5 lacs order per second
- ✓ Scalability: Horizontally scalable by adding partitions

**Till date Nov, 2015*



Technology Programme - Colocation Facilities

Fastest Co-location

- ✓ BSE is the fastest Exchange in the world with a speed of 6 microseconds.
- ✓ BSE provides the fastest Colocation service in India with round trip network latency of less than 20 microseconds.
- ✓ At BSE Colocation, Exchange response for an order has round trip latency of less than 30 microseconds.
- ✓ Market access across Equity, Equity Derivatives and Currency Derivatives segments.
- ✓ Extension of Precision Time Protocol (PTP) from BSE's Grandmaster clock to the Colocation enables members to synchronize with the Exchange clock.
- ✓ Equitable distribution of market data to all members by usage of same length cables for all members.
- ✓ Full order book (EOBI) broadcast is provided to Colocation members.
- ✓ State-of-the-art Data Centre services from NTT – Netmagic
- ✓ Low latency 10 Gbps Solarflare NIC cards (Model No. : SFN7322F) will be provided to members by BSE.

BSE Co-location : NTT Netmagic Data Centre

BSE Co-location is entirely managed by a third party service provider - NTT Netmagic. Key technical highlights are:

- ✓ 10 Gbps Fibre optic cable connection with BSE trading system with full redundancy
- ✓ 24 X 7 operations support
- ✓ 24 X 7 High security zone
- ✓ Uninterrupted Power Supply with DG back up
 - ITIL and ISO 27001 compliant
- ✓ FM200 Fire suppression facility
- ✓ Global Exchanges' feed from Thomson Reuters Electron network
- ✓ 99.999% uptim



*Till date Nov, 2015

Technology Programme - Software and Hardware

For services opted by member, BSE bears the cost on behalf of the member for;

- ✓ The software license cost for ALGO trading and market access
- ✓ The infrastructure cost on Co-location rack space
- ✓ The ALGO trading servers at Co-location
- ✓ The internet connectivity between BSE Co-location and member's office

ALGO Trading

Algo Trading software is available from following vendors for quoting and market making in Eq. Derivatives including auto hedging capabilities across Exchanges and Segments:

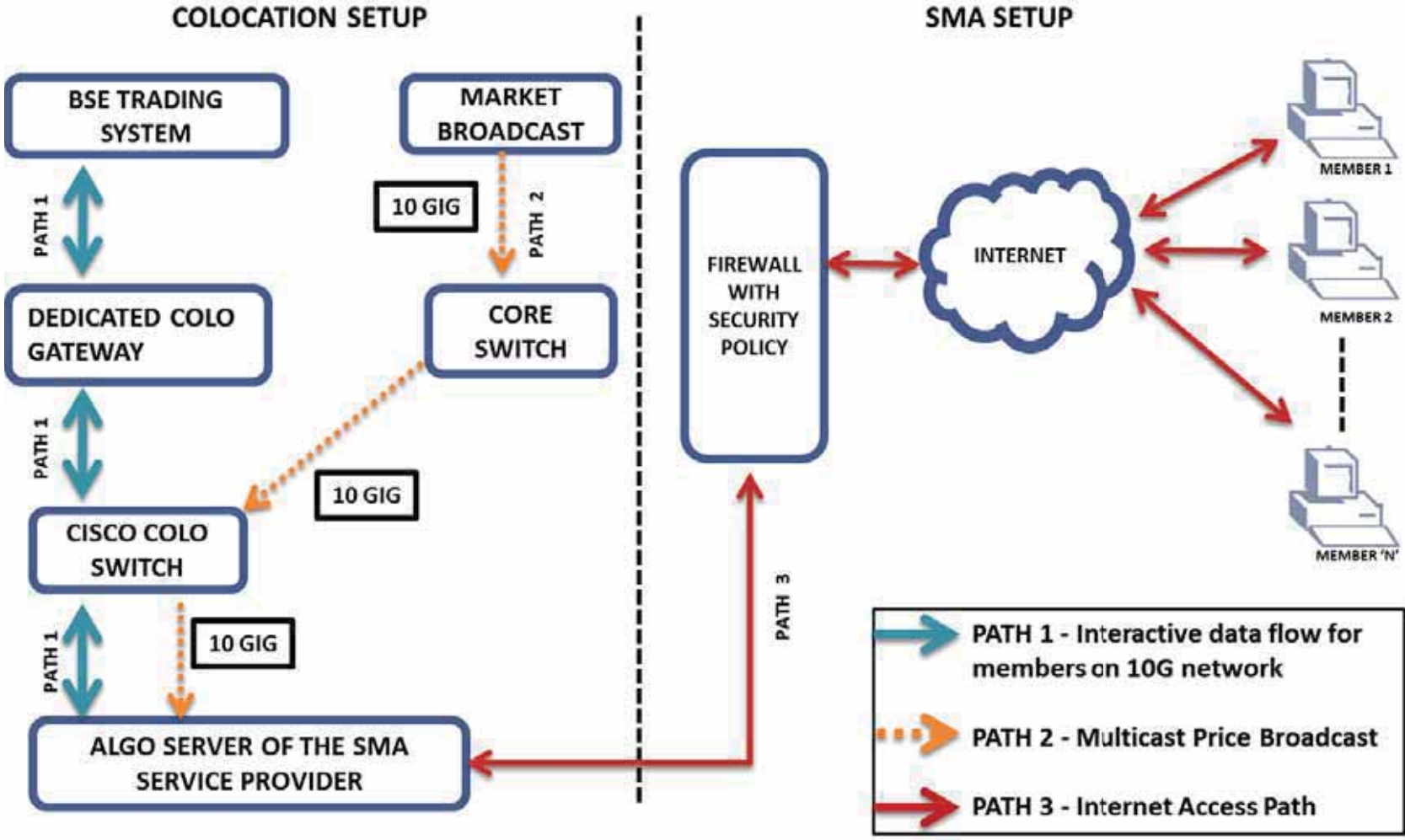
- ✓ Greeksoft Technologies Pvt. Ltd
- ✓ uTrade Solutions Pvt. Ltd
- ✓ Omnesys Technologies Pvt. Ltd
- ✓ Symphony Fintech Solutions Pvt. Ltd.

Cost Comparison

Service	BSE	Other Exchange
Colocation Network Bandwidth	10 Gbps fiber optic network	10 Gbps fiber optic network
10 G Go-live Month	September 2014	October 2014
Roundtrip Latency (in μ sec) : Exchange Response Time	6	500 #
Roundtrip Latency (in μ sec) : Colo Network*	20	500 #
Roundtrip Latency (in μ sec): Exchange Response Time + Colo Network Latency	26	1000 #
10G Switch at Member Rack	Not Mandatory	Mandatory
10G NIC Card from Exchange per member	2 Solarflare Cards (SFN7322F)	NIL
Additional cost to member for 10G migration	NIL	INR 10 – 20 Lakhs
Full Racks	Free	One Time Cost : Rs. 1 Lakh plus AMC : Rs.12 Lakhs
Half Racks	Free	One Time Cost : Rs. 50,000 plus AMC : Rs.6 Lakhs
Quarter Racks	Free	Not Available
Servers	Free	Not Available
Algo software	Free	Not Available
Interactive and Market data connectivity cost	Unlimited order throughput and market data feed at no cost	Interactive Connectivity : Annual Cost per connection Rs.10 Lakhs for 400 messages/sec
		TBT Market Data Feed : Annual Cost per feed Full Rack : Rs.1.00 Lakh / Half Rack:Rs.0.50 Lakh

*10G network with Solarflare card SFN7322F # Based on market feedback

Sponsored Market Access - New Facility at Colocation



Sponsored Market Access

Implementation of 'Sponsored Market Access' (SMA) at Colocation

- ✓ SMA is a software distribution model in which applications are hosted by a service provider and made available to customers over a network. The live operations started in December, 2014.
- ✓ Free of cost rack space is allocated by BSE to the SMA service providers to install their algo trading application server in BSE Colocation. The members can connect to this SMA algo server at Colocation via Internet.
- ✓ The algo strategy parameters can be triggered from the member front-end application and sent to the SMA algo server at Colocation.
- ✓ The corresponding algos will generate orders to be sent to BSE trading system through Colocation network.
- ✓ The algo orders will be sent to the BSE Trading system via the high speed Colocation gateway for minimum latency.
- ✓ Members can execute orders over high speed Colocation network without installation of any infrastructure at Colocation by the members.

Advantages

✓ For Members

- Zero capital expenditure on infrastructure at Colocation.
- The algo orders will be generated at Colocation and sent to the BSE Trading system via the high speed 10G Colocation network for minimum latency.

✓ For Vendors

- Free of cost rack space is allocated by BSE to SMA service providers to install their algo trading application server in BSE Colocation.
- Vendor can service multiple clients with a centralized algo server installed at Colocation. Hence, vendor's cost of maintenance is low.



For more details, kindly e-mail to tech.prog@bseindia.co

Bloomberg Ticker	Category	Type
SENSEX Index CT	S&P BSE SENSEX Index futures	Futures contract
BSE100 Index CT	S&P BSE 100 index futures	Futures contract
SENSEX Index OMON	S&P BSE SENSEX Index options	Options contract
BSE100 Index OMON	S&P BSE 100 Index Options	Options contract
LUSA Currency OMON	S&P BSE Currency Options	Options Contract
LUSA Curncy	S&P BSE Currency USDINR Futures	Futures Contract
LERA Curncy	S&P BSE Currency EURINR Futures	Futures Contract
LGBA Curncy	S&P BSE Currency GBPINR Futures	Futures Contract
LJPA Curncy	S&P BSE Currency JPYINR Futures	Futures Contract
TBBA Comdty	T-Bill	Futures Contract
IISA Comdty	Gov Bond 8.4%	Futures Contract
IIPA Comdty	Gov Bond 7.72%	Futures Contract

Thompson Reuters Symbols	Category	Type
0#BIF	S&P BSE SENSEX Equity Index	Futures contract
0#BHI	S&P BSE 100 Index futures	Futures contract
0#BIF*.BO	S&P BSE SENSEX Equity Index	Options contract
0#BHI*.BO	S&P BSE 100 Index Options	Options contract
0#BIR	Currency USD/INR	Futures contract
0#BEU	Currency EUR/INR	Futures contract
0#BGB	Currency GBP/INR	Futures contract
0#BJP	Currency JPY/INR	Futures contract
0#BIR	Currency USD/INR	Currency Futures Spread Contract
0#BEU	Currency EUR/INR	Currency Futures Spread Contract
0#BGB	Currency GBP/INR	Currency Futures Spread Contract
0#BJP	Currency JPY/INR	Currency Futures Spread Contract
0#BSE91	Treasury Bill	Futures contract
0#B883	10 Yr G-Sec	Futures contract
0#B716	10 Yr G-Sec	Futures contract



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