

# APRIL UPDATE 2015



India's fastest exchange with a response time of 200 microseconds and India's largest currency derivatives exchange.  
**LIQUIDITY • LOWER COSTS • MARKET MAKERS • TIGHT SPREADS • LARGE DEPTH • LARGE PARTICIPANT BASE**

# BSE UPDATE – Apr 2015



# Corporate Presentation: Outline



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# Credentials

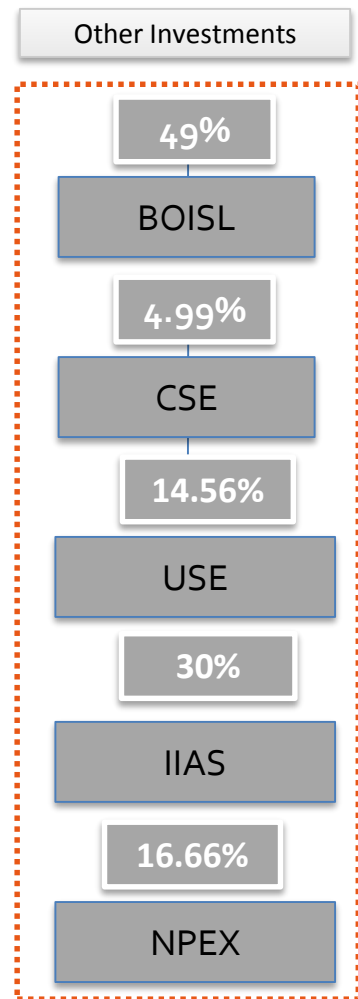
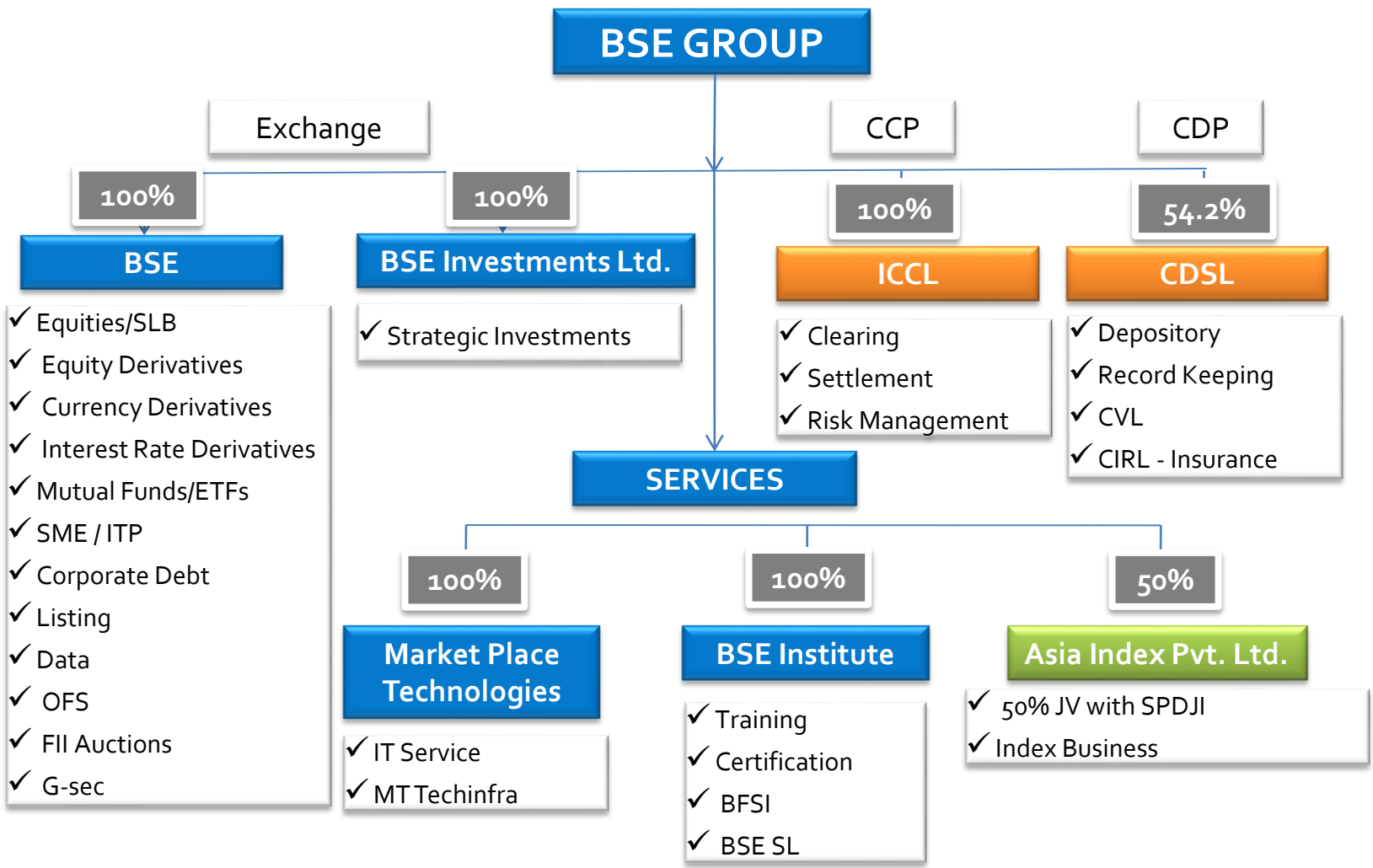
- Largest number of listed companies in the world – **5624 as of 31 Mar'15**
- 10th Largest exchange Globally in terms of market capitalization - Over USD 1.70 Trillion \*
- 5<sup>th</sup> most liquid exchange globally for Index Options \*
- 9th largest exchange in the world in terms of number of trades in Equity Shares \*
- Largest Exchange in the World in terms of number of currency options contracts traded.\*
- 3<sup>rd</sup> largest in the world in terms of number of currency futures contracts traded. \*
- Full bouquet of products including Equity, Equity Derivatives, Currency Derivatives, Interest Rate Derivatives, Debt Products, Security Lending & Borrowing Platform, IPO, SME Platform, Mutual Funds, ETFs and Offer for Sale (OFS).
- Partnership with S&P Dow Jones Indices on Index Products
- Exchange Technology from Deutsche Boerse Group (Eurex Platform)
- Cross listing of benchmark index S&P BSE SENSEX in BRICS countries



# BSE Group



A complete securities eco –system



As of 31<sup>st</sup> Dec 2014

# Continuous Evolution



First Wave (1995)

Migration from open out-cry to online screen-based order driven trading system

Second Wave

Corporatization & Demutualization from an Association of Persons (AOP)

Third Wave (2010)

Transformation to Integrated transaction processing company in the Financial Infrastructure Space

# A Distinguished Board Of Directors



Mr. S. Ramadorai

- Chairman
- Public Interest Director



Mr. Ashishkumar Chauhan

- Managing Director & CEO



Mr. Sudhakar Rao

- Public Interest Director
- Retd. IAS



Dr. Sanjiv Misra

- Public Interest Director
- Retd. IAS



Mr. S. H. Kapadia

- Retd. Chief Justice of India



Mr. Thomas Bendixen

- Shareholder Director



Mr. Dhirendra Swarup

- Public Interest Director



Dr. Krishnaswamy Kasturirangan

- Public Interest Director

# AN EXPERIENCED MANAGEMENT TEAM



**Ashishkumar Chauhan**

Managing Director & Chief Executive Officer

- Ashishkumar Chauhan - Managing Director and CEO of the Exchange. He is present on the board of group companies including Central Depository Services Limited (CDSL), Indian Clearing Corporation Limited (ICCL), BSE Institute Limited, BSE Investments Limited, Marketplace Technologies Private Limited, and is a member of the Board of Governors of Indian Institute of Information and Technology (IIIT), Jabalpur. He was also ranked amongst the top 50 Chief Information Officer (CIO) by several magazines and institutions between 2005 and 2009 including CIO Magazine US, Information Week, US etc. Prior to joining BSE, Ashish was serving as the President and Group Chief Information Officer (CIO) of Reliance Industries Limited and CEO of India win Sports (owner of Mumbai Indians). He was also one of the key personnel involved in the setting up of National Stock Exchange of India (NSE) and was responsible for setting up the Equity and Derivatives Markets in addition to VSAT technologies for the 1st time in India.
- He has completed his Bachelor's in Engineering from Indian Institute of Technology, Bombay and Post Graduate studies in business from Indian Institute of Management Calcutta



**V Balasubramanian**

Chief Business Officer

- V Bala - Chief Business Officer heading the business development and operations, comprising Markets, Listings and Market Data division. He is a board member for BSE Institute Ltd., Central Depository Services Limited (CDSL), BOI Shareholding Ltd., Asia Index Private Ltd., CDSL Ventures Ltd. & Futures Industry Association - ASIA. He has close to 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 currently heads all the regulatory functions of the exchange which include membership compliance, surveillance, inspection, investigation, regulatory communication, investor services, listing compliance and regulatory legal.
- He has more than 15 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 post which he was a Director, Law & Compliance at DSP Merrill Lynch Ltd heading Broking and Investment banking Compliance
- He has completed his Bachelors in Commerce from Mumbai University and a Master of Management Studies from Narsee Monjee Institute of Management Studies, University of Mumbai.



**Nayan Mehta**  
Chief Financial Officer

- Nayan - CFO at BSE.
- He 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



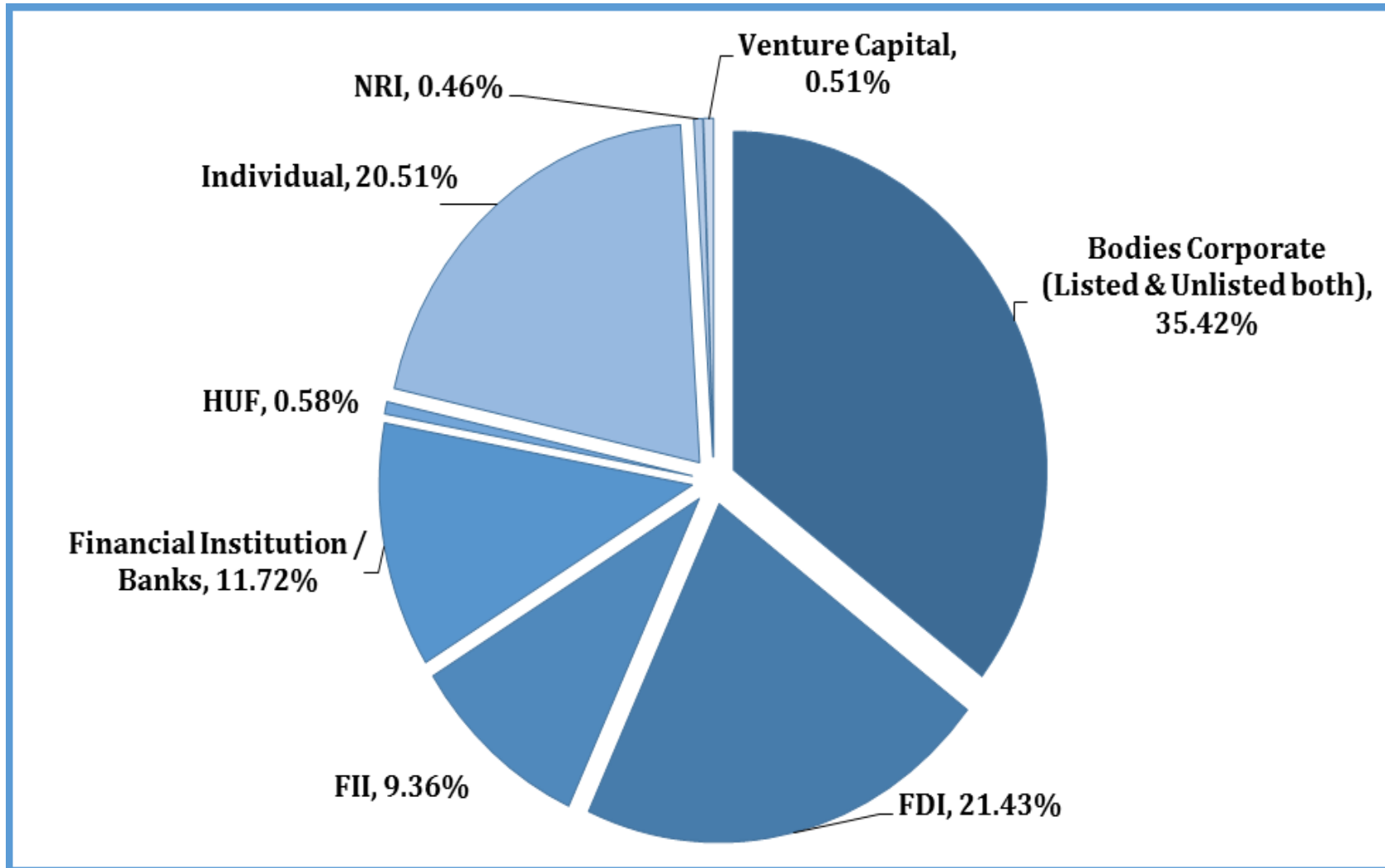
**Kersi Tavadia**  
Chief Information Officer

- Kersi - CIO and is responsible for application systems & IT infrastructure development and management.
- He has over 27 years of experience in the area of Applications / IT development and management and has previously worked with HSBC InvestDirect, Motilal Oswal, IL&FS and most recently as CEO of Marketplace Technologies
- He is a physics graduate from University of Mumbai and has completed his diploma in Computer Science from Data Matrix. He has also completed Masters in Financial Management from Narsee Monjee Institute of Management Studies (NMIMS)



# Share Holding Pattern as on December 31,2014

Paid up Capital Rs. 10.38 crores | Face Value per share 1/- each



# BSE Products & Services Highlights



# Global Comparison – World federation of Exchanges



**Index Options - YTD 2015, BSE is the 5th most Liquid exchange Globally for Index Options. (Period: Jan 2015 to Feb 2015)**

INDEX OPTIONS		
Rank	Exchange	No of Contracts Traded YTD'15
1	National Stock Exchange India	348 602 085
2	EUREX	72 023 951
3	Korea Exchange	65 407 392
4	Chicago Board Options Exchange	57 587 567
5	<b>BSE India</b>	<b>55 493 753</b>
6	TAIFEX	22 907 070
7	CME Group	21 536 017
8	Tel Aviv SE	7 069 304
9	Osaka SE	5 765 308
10	OMX Nordic Exchange	4 893 168

**Equity Trades - YTD 2015, BSE is the 9th largest exchange Globally by Number of Equity Trades. (Period: Jan 2015 to Feb 2015)**

Equity Trades		
Rank	Exchange	No. of Equity trades YTD'15
1	Shanghai SE	426 966
2	Shenzhen SE	330 948
3	National Stock Exchange India	318 935
4	NASDAQ OMX	301 581
5	NYSE	274 739
6	Korea Exchange	224 526
7	The Nigerian Stock Exchange	165 534
8	Japan Exchange Group - Tokyo	117 238
9	<b>BSE India</b>	<b>71 196</b>
10	TMX Group	54 017

**Currency Options -YTD 2015, BSE is the largest Exchange Globally for Currency Options. (Period: Jan 2015 to Feb 2015)**

Currency Options		
Rank	Exchange	No. of Contracts Traded YTD'15
1	<b>BSE India</b>	<b>44 993 006</b>
2	National Stock Exchange India	27 640 806
3	CME Group	3 443 490
4	Tel Aviv SE	3 071 232
5	Moscow Exchange	2 275 921
6	BM&FBOVESPA	954 655
7	Johannesburg SE	802 525
8	ICE Futures US	3 150
9	Borsa Istanbul	188

**Currency Futures - YTD 2015, BSE is the 3rd largest Exchange Globally for Currency Futures. (Period: Jan 2015 to Feb 2015)**

Currency Futures		
Rank	Exchange	No. of Contracts Traded YTD'15
1	Moscow Exchange	101 078 017
2	National Stock Exchange India	64 701 218
3	<b>BSE India</b>	<b>42 134 781</b>
4	CME Group	30 724 076
5	BM&FBOVESPA	15 418 310
6	Korea Exchange	8 919 664
7	Johannesburg SE	3 465 392
8	ICE Futures US	1 749 239
9	Borsa Istanbul	219 815
10	Colombia SE	83 516

# Market Capitalization Comparison



For Feb 2015, BSE is the 10th largest Exchange Globally by Market Capitalization

World Federation of Exchanges

Market Capitalization		
Rank	Exchange	Market Capitalization Feb 2015 (USD Trillion)
1	NYSE	19.49
2	NASDAQ OMX	7.29
3	Japan Exchange Group - Tokyo	4.75
4	Shanghai SE	4.15
5	Euronext	3.54
6	Hong Kong Exchanges	3.38
7	Shenzhen SE	2.48
8	TMX Group	2.02
9	Deutsche Börse	1.86
<b>10</b>	<b>BSE India</b>	<b>1.70</b>

# Our Products



## Primary Market

- 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 / ITP
- Securities Lending and Borrowing

## Global Indices

Trade in rupee denominated futures

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

## ETFs

- Over 36 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

# Innovation – Our Key Differentiator



## Easy Market Access

- New Trading Architecture - Eurex T7 Platform.
- Co-location + HFT
- Direct Market Access (DMA)
- Smart Order Routing (SOR)
- Low Latency Feeds
- Point of Presence (PoP) (Coming Soon)
- New Membership Drive
- Internet-based exchange hosted trading platform (BOLT Plus on Web)
- Trading via mobile phone.

## Product Innovation

- Strategic Partnership with S&P Dow Jones Indices
- Weekly Options on S&P BSE SENSEX & S&P BSE 100 .
- IPO system accessible via APIs
- Liquidity Enhancement Incentives for equity derivatives
- Maker-Taker pricing
- Stock Lending & Borrowing
- Call Auction in pre-open session
- S&P BSE Realized Volatility Index .
- IDRs, Rupee-denominated global indices, ETFs
- Listed Mutual Funds – with historical NAV and Exchange SIP.
- Direct Access to MF Distributors
- Third-party warrants (In-progress).
- Self Trade Prevention Check (STPC) – launch of its functionality in Equity Segment vide notice no - 20150302-25 & Equity Derivatives & CDX vide notice no - 20150127-30.

## Enhanced Reach

- Revamped website - member & investor friendly features
- First Securities Market Infrastructure member of SWIFT in India.
- New indices – S&P BSE 500 SHARIAH, S&P BSE India 10 Year Sovereign Bond Index (Total Return), S&P BSE Infrastructure, S&P BSE SENSEX Futures Index, S&P BSE CPSE Index.
- BRICS Alliance – Inter-exchange alliance to develop world's largest emerging markets.
- High-quality research and world class analytical tools on MFs.
- SME Exchange – Platform for the emerging business community

# Equities

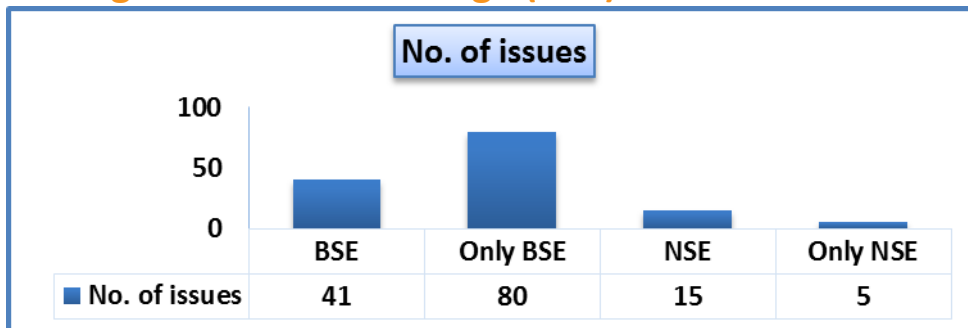


- **Access Range** : Over **5624** listed companies - Largest in the world
- **Best Execution** – out of these **5624** listed equities, over 1500 are dual listed on the other Indian Exchange – **Use SOR to realize a lower impact cost for your clients! *Savings of 6-8bps have been achieved by clients using SOR!!!***
- **Dedicated Block Trade window** in the morning
- **Call-Auction for Illiquid Scrips** : All illiquid stocks are traded by way of hourly call-auctions
- **Pre-open Session**: The opening for the S&P BSE SENSEX basket of stocks. BSE exclusively listed stocks and initial offerings is conducted via a Call Auction.
- **Stock Lending and Borrowing** – With early pay-in and recall facilities
- **Lowest Cost**: BSE is the lowest cost Indian Exchange for cash equities :
  - A Flat transaction cost of 0.275 bps
  - This is approx. 15% lower than transaction costs at the other Exchange
- **Limited Liability**: Limited liability for non-defaulting members is subject to a maximum cap of ₹ 1 million
- **Exposure towards CCP**: ICCL has decided to currently keep the Clearing Members' contribution to Default Fund as "NIL"

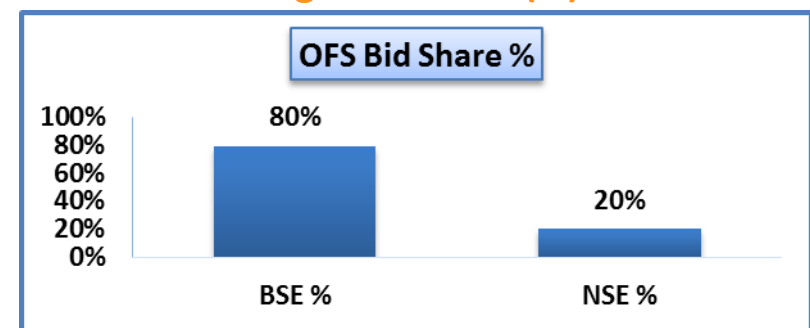
# Offer For Sale Platform

- An Offer For Sale is a new mechanism for increasing the public share holding as mandated under listing agreement.
- BSE launched the Offer For Sale (OFS) module on iBBS (Internet based book building System) platform on 24th February, 2012.
- As on Mar'15 , 141 companies have completed their OFS issues of which BSE was appointed the Designated Stock Exchange in 121 (~86%) 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 (USD 6.00 Billion) through divestment of holdings in PSUs.
- 80 OFS issues have been conducted exclusively only on BSE Platform.

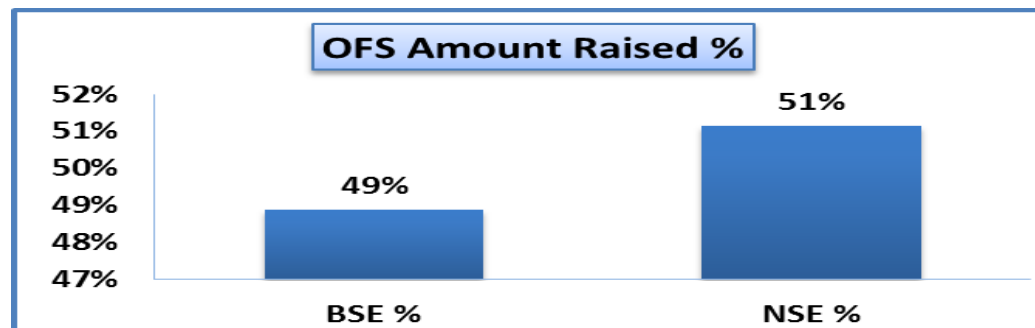
## Designated Stock Exchange (DSE) Statistics till date



## OFS Average Bid Share (%) – till date



## OFS Amt Raised (%) from FY12-13 till date (Mar 31, 2015)

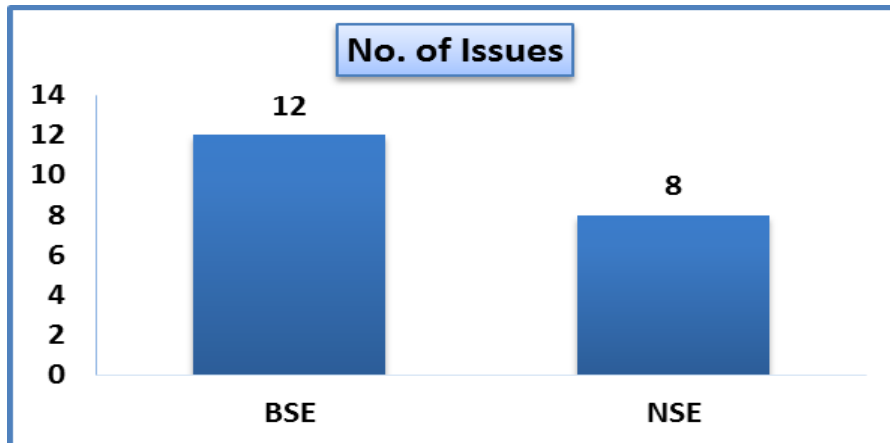




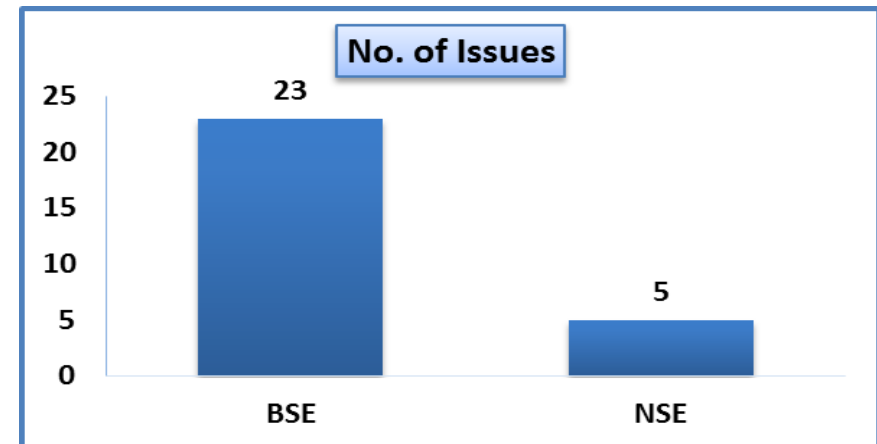
# Public Issues (Equity & Debt) – BSE Dominance



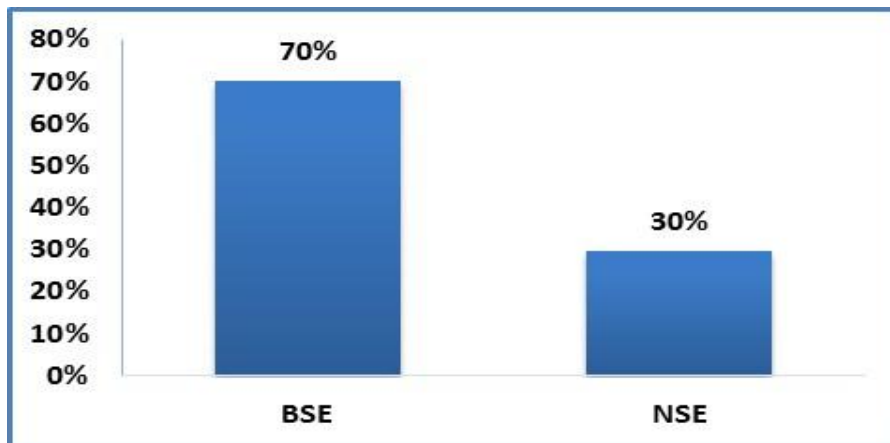
### IPO Segment DSE Statistics



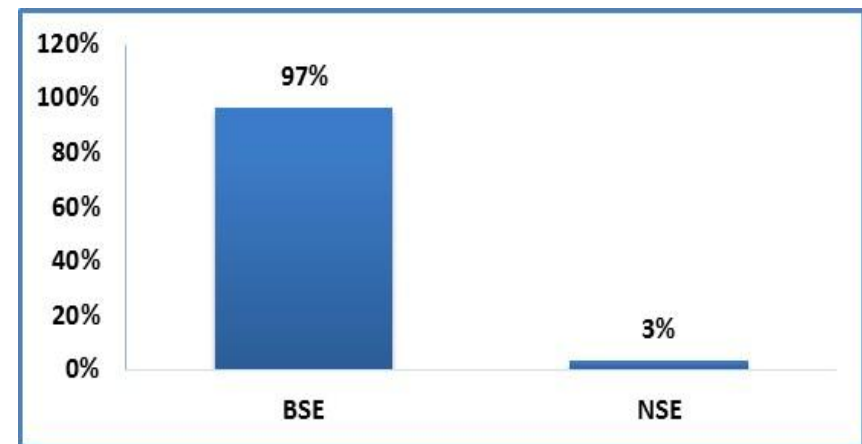
### Debt Segment DSE Statistics



### IPO Segment Bidding Statistics



### Debt Segment Bidding Statistics



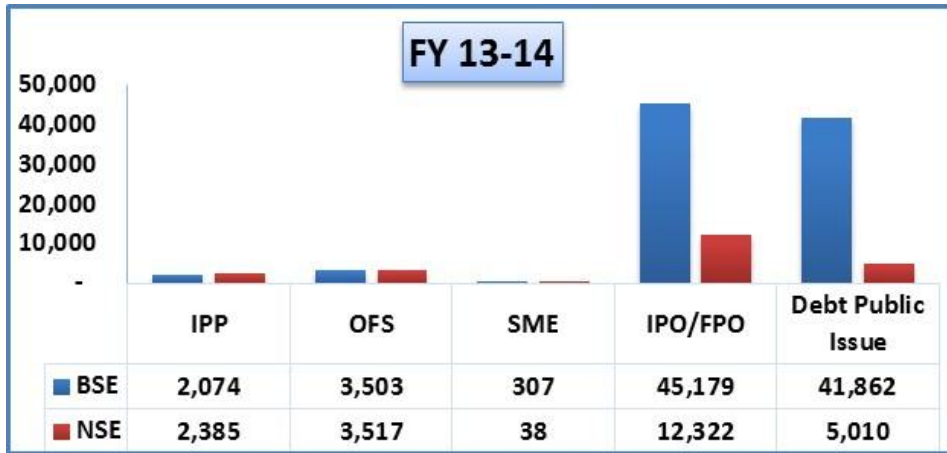
From FY12-13 till Mar 31, 2015

From April 2014 till Mar 31, 2015

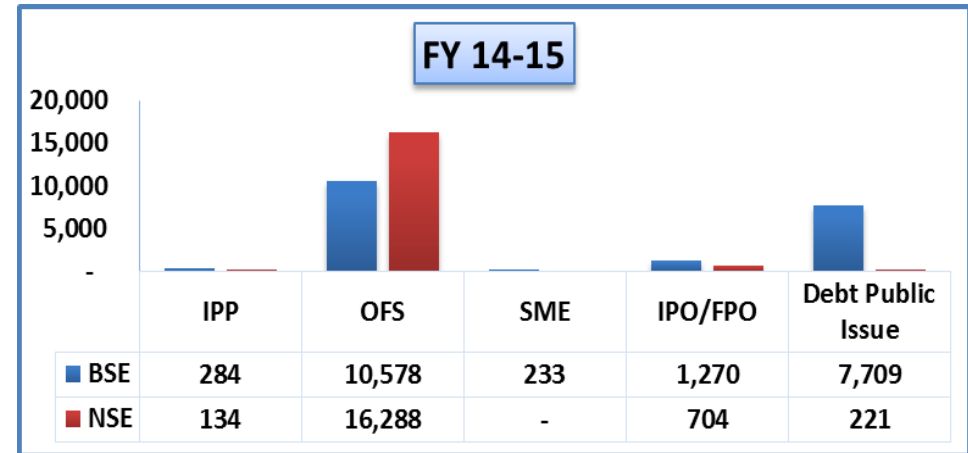
# Leadership In Fund Mobilization - Capital Formation



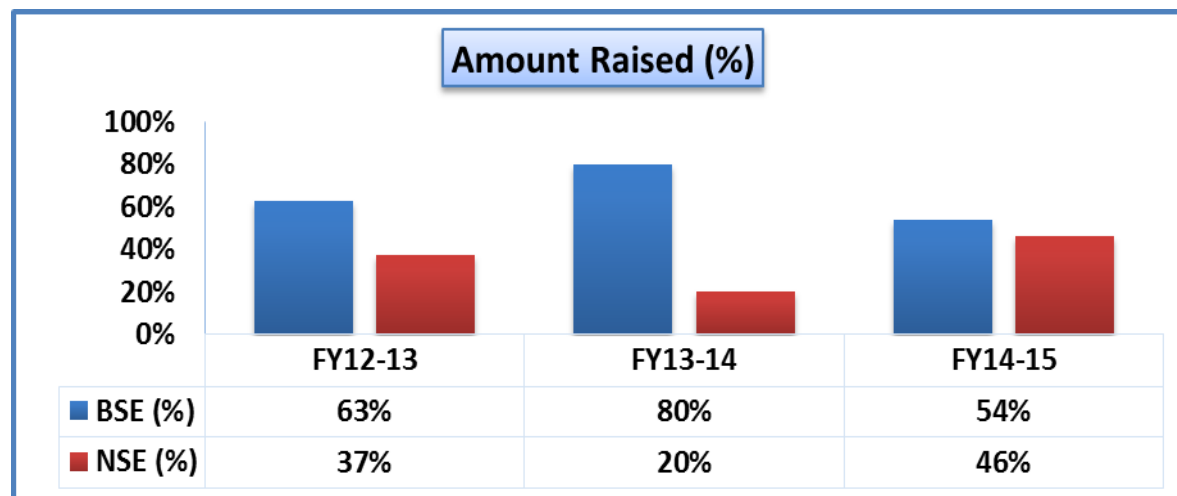
**FY13-14 Fund Mobilization (Cr.)**



**FY14-15 Fund Mobilization (Cr.)**



**All Segment Fund Mobilization Share (%)**



# Overall Fund Mobilized



BSE Amount Raised (Cr.)	FY13-14		FY14-15	
	No.s	Cr.	No.s	Cr.
Particulars				
IPP	11	2,074	1	284
OFS	67	3,503	21	10,578
SME	34	307	32	233
IPO/FPO**	1	45,179	3	1,270
PPDI	1,087	1,35,340	1,575	2,46,221
Public Debt (No. of Co.s)	35	42,700	27	11,405
<b>Total</b>		<b>2,29,104</b>		<b>2,69,992</b>

*Note\*\* Amt raised for OFS / IPO/FPOs / SME is based on bidding statistics & No. of Issues is based of the DSE.*

QIP	No. of Issues	Amt
<b>FY13-14</b>	7	9,715
<b>FY14-15</b>	72	47,416

Right Issues	No. of Issues	Amt
<b>FY13-14</b>	24	5,818
<b>FY14-15</b>	17	4,811

# Debt Markets

## Business Statistics (Secondary Markets)



Retail trading in Corporate Bonds (F group)	FY 2013-14	FY 2014-15
Turnover (Rs.Crores)	2,103	3,757
Number of members/participants	1,225	1,353

Wholesale Segment Reporting of Government Bonds	FY 2013-14	FY 2014-15
Turnover (Rs.Crores)	48,953	2,21,233
Number of members/participants	130	130

Wholesale Segment Reporting of Corporate Bonds (ICDM)	FY 2013-14	FY 2014-15
Turnover (Rs.Crores)	1,02,467	2,03,387
Number of members/participants	1,010	1,155

Settlement of Corporate Bonds and CP / CD (E-Settle)	FY 2013-14	FY 2014-15
Settlement of Corporate Bonds (Rs.Crores)	60,521	44,433
Settlement of CPs / CDs. (Rs.Crores)	2,08,477	1,90,407
Number of members/participants	1,010	1,155

# Growing Presence in Debt Segment

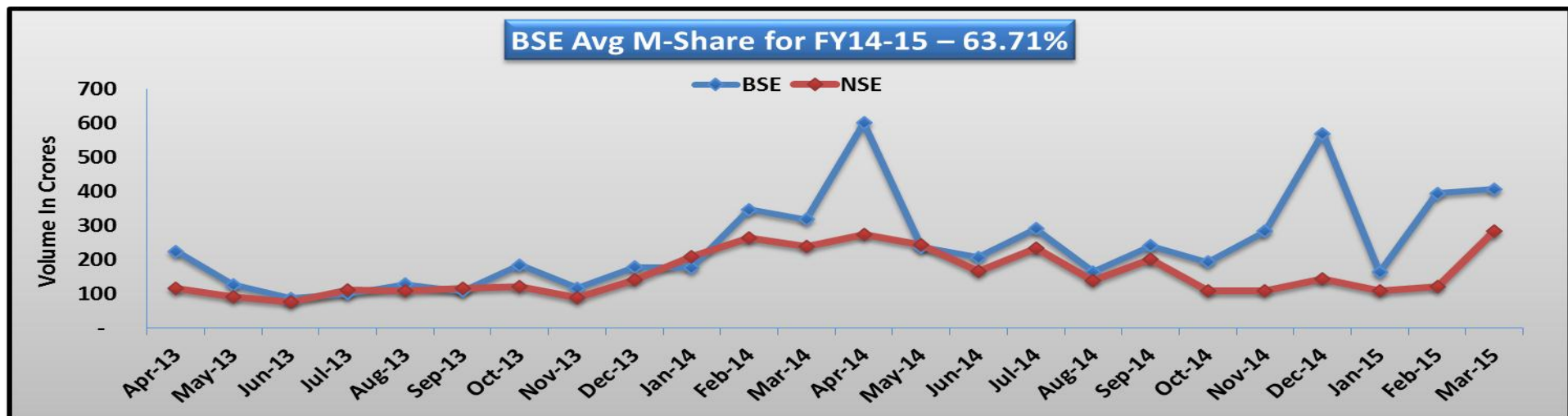


## Secondary Market updates

- BSE has managed to gain market share in retail trading of Corporate Bonds from 55% in financial year 2013-14 to more than 63% in financial year 2014-15. **In the month of Mar 2015, BSE market-share was 59%.**
- Market share in Reporting volumes in Wholesale Debt Market of Government Bonds for the month of **Mar'15 is 29%**. In **2014-15** volumes in this segment have exponentially increased to **Rs. 2,21,233 crs** vis a vis **Rs.48,952 crs** in the previous year 2013-14.
- The market share of BSE for corporate bond reporting in **Mar 2015 was around 18%**.
- Settlement volumes of Corporate bonds have reduced from Rs. 60,521 crores in 2013-14 to Rs. 44,433 crores in 2014-15, due to closure of the FTRAC platform, major FII participants preferred settlement through NSE systems as they were familiar with NSE/NSCCL system.

## Primary Market updates

- BSE is the preferred choice by issuers for listing Privately Placed Debt Instruments. In Financial Year 2014-15, BSE has listed **1,575** Instruments vis-a-vis **1,301** on other Exchange.
- Out of **25 Debt Public Issues, 24 times** BSE has been appointed as Designated Stock Exchange during the Financial year 2014-15.
- Over **97%** of the average bids amongst all public debt issues had been garnered through the BSE IBBS Platform in financial year 2014-15. In 2013-14, 89% of the average bids amongst all public debt issues was through the BSE IBBS Platform and amount mobilized was Rs.41,860 crores.



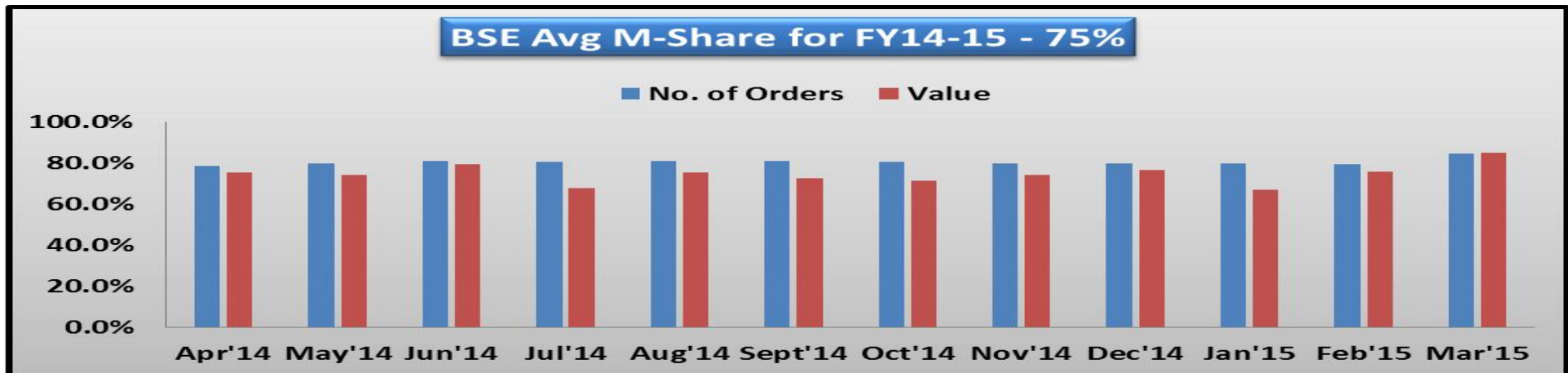
## India's leading mutual fund distribution platform

- BSE StAR MF is a web-based transaction processing system that can be accessed “anytime” and “anywhere”, and enabled for Intra AMC switches, DPC, NRI transactions, Minor Transactions and unique X-SIP on StAR MF
- **Number of Orders : M-Share 85% & Traded Value : M-Share 85.2% (March'15)**
- 40 AMCs with over 5000 schemes, accounting for 99% of MF Industry AAUM is available on BSE StAR MF Platform For FY 14-15; **15,91,586** orders aggregating to Rs. 10,413 Crs has been transacted in terms of value along with Over 1,60,000 SIPs / X-SIPs registered on BSE StAR MF Platform.

## Unique Features for Broker Members on BSE StAR MF Platform

- **OverNite Funds Management: liquid** – overnight investments which are synchronised with exchange settlement timings. Thus, creating a call money market equivalent product for liquid mutual funds on our platform to pool brokers own money and their clients. To be launched on 21st April 2015.
- **X-SIP Facility** : Single mandate can be used SIPs across all Schemes across all AMCs, complete SIP administration and the cost of administration is borne by BSE and monies is debited to Client Bank account instead of debiting Member POOL account.
- **DPC Facility** : Direct Pay-out of Units to Client accounts options to member broker

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



- BSE SME Platform offers an entrepreneur and investor friendly environment, which enables the listing of SMEs from the unorganized sector scattered throughout India, into a regulated and organized sector.
- **BSE is the first stock exchange in India to receive final approvals from SEBI for launch of the SME Platform.**
- **BSE launched SME Platform Index on 14th December, 2012 aimed at tracking primary market condition .**
- BSE SME will assist these SMEs to raise equity capital for their growth and expansion and thus help them blossom into full fledged companies. In due time enable them to migrate into the Main Board of BSE as per the existing rules and regulations.
- **As on Mar'15, 89 SME Companies listed on BSE vis-à-vis 7 companies on Other Exchanges.**
- **Out of 89 companies 3 companies have migrated to the main board of the Exchange.**
- Market Capitalisation of the companies listed on SME platform have crossed the 6800 Crores.
- Beneficial Aspects – Ensuring Transparency, Efficiency, Liquidity, Minimum regulations and compliance requirement, Lower cost of capital to the SMEs , Active participation of Associations, Merchant bankers & Credit rating Agencies (CRAs) etc.
- BSE SME Platform Intends to reach all categories of investors, including venture capitalists, Private Equity Funds, High Net worth Individuals, Qualified Institutional Buyers etc.

# Equity Derivatives: Highlights



- Underlying Assets: 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
- Ongoing Liquidity Enhancement Programme 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



# New Trading Architecture – BOLT PLUS



- **Bolt Plus Live**
  - Products available for trading
    - Currency Derivatives - 29 Nov 2013
    - Interest Rates Futures - 28 Jan 2014
    - Equity Derivatives - 10 Feb 2014
    - Equity - 7 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 : < 200  $\mu$ s (Gateway in to Gateway out)
  - Network Latency for Colo Users: 18  $\mu$ s
  - Throughput Capacity: 5 lacs order per second
  - Scalability: Horizontally scalable by adding partitions

# Equity Derivatives – Specifications



Products	Tick Size (INR)	Settlement Mechanism	Lot size	Contract Value as on 26 <sup>th</sup> Mar 2015		Expiry
				INR	USD	
S&P BSE SENSEX Futures	1.00	Cash	15	4,11,864	6,572*	Last Thursday
S&P BSE-100 Futures	0.05	Cash	50	4,23,359	6,755*	Last Thursday
S&P BSE SENSEX Options	0.05	Cash	15	4,11,864	6,572*	Last Thursday - European
S&P BSE BSE-100 Options	0.05	Cash	50	4,23,359	6,755*	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

\* Notional Value for ATM strike (USD rate of 62.67)

# BPS saving on trading Derivatives at BSE

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

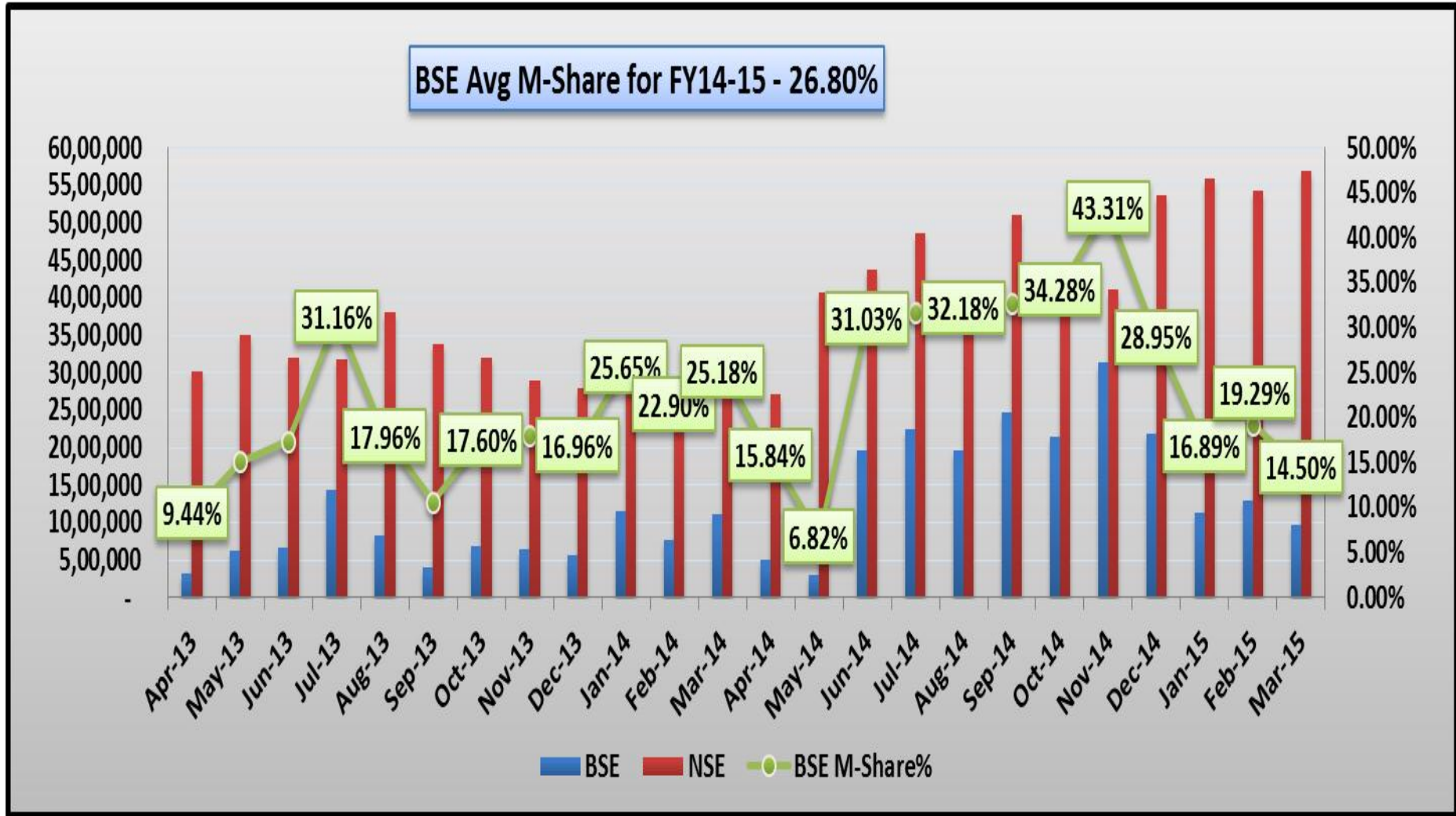
Save 20% of your cost!

Options	Trade at BSE	Trade at Competing Exchange A	Trade at Competing Exchange B
	bps	bps	bps
<b>Sell Options</b>			
STT	-1.70	-1.70	-1.70
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	-0.05 *	-5.00	-2.50
<b>Buy Options to Square off</b>			
STT	0.00	0.00	0.00
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	0 *	-5.00	-2.50
<b>Net outflow</b>	<b>-1.79</b>	-11.74	-6.74

Save 10 bps!

\* Assuming one active and one passive trade

# Market-share comparison (Equity Derivatives)%



# Snapshot

## Derivatives Segment Performance- 2015



Registered for LEIPS - broker-members (till date)

**555**

Members who have traded (till date)

**476**

Average Daily Turnover for YTD 2015

**Futures:** USD 32 Million

**Options:** USD 8,729 Million

Average num of contracts traded daily YTD 2015

**Futures:** 4,377

**Options:** 12,96,630

Average num of contracts Open Daily YTD 2015

**Futures:** 12,884

**Options:** 32,442

*Above Figures are from Jan-15 to Mar-15*

# Introduction to LEIPS



## BSE DERIVATIVES INCENTIVE PROGRAMME

- BSE LEIPS was initiated in September 2011, in order to create lasting liquidity in BSE's equity derivatives segment
- 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
- For all participants, the transaction charge has been made zero for passive orders and 0.05bps for active orders
- Incentives are paid on a daily basis. Annual budget of USD 8 million + for incentives
- Co-location racks, servers and algorithmic software provided free of cost (refer last slide details)
- Additional Incentive provided for Retail Client Trades

# Introduction to Maker- Taker Pricing



## EQUITY DERIVATIVES

- Effective from 10th Feb 2014, BSE introduced Maker Taker pricing for Non- LEIPS Products.
- Transaction charges on Index and Stock options which are part of Non- LEIPS contracts will be as follows:
- **Passive order** (price maker) to receive Rs.2,400 per crore of premium value
- **Active order** (price taker) to pay Rs.2,500 per crore of Premium Value (inclusive of IPF and TGF charges)
- **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 (trade taking place).

# BPS saving on trading Currency Derivatives at BSE



Currency Futures			
	BSE	NSE	MCX-SX
For Turnover of	ANY	0 - 300 Cr	0 - 300 Cr
Exchange Transaction Fees (Rs. / Per Cr)	6	110	105
<b>Save your cost @ BSE upto</b>	<b>94.55%</b>		
	BSE	NSE	MCX-SX
Discount		25% # \$	50% # *
For Turnover of	ANY	(300 Cr - 350 Cr)	(300 Cr - 350 Cr)
Exchange Transaction Fees (Rs. / Per Cr)	6	82.5	52.5
<b>Save your cost @ BSE upto</b>	<b>92.73%</b>		
	BSE	NSE	MCX-SX
Discount		35% # \$	50% # *
For Turnover of	ANY	(350 Cr - 450 Cr)	(350 Cr - 450 Cr)
Exchange Transaction Fees (Rs. / Per Cr)	6	71.5	52.5
<b>Save your cost @ BSE upto</b>	<b>91.61%</b>		
	BSE	NSE	MCX-SX
Discount		45% # \$	50% # *
For Turnover of	ANY	(450 Cr - 550 Cr)	(450 Cr - 550 Cr)
Exchange Transaction Fees (Rs. / Per Cr)	6	60.5	52.5
<b>Save your cost @ BSE upto</b>	<b>90.08%</b>		
	BSE	NSE	MCX-SX
Discount		55% # \$	50% # *
For Turnover of	ANY	(550 Cr - 600 Cr)	(550 Cr - 600 Cr)
Exchange Transaction Fees (Rs. / Per Cr)	6	49.5	52.5
<b>Save your cost @ BSE upto</b>	<b>87.88%</b>		
	BSE	NSE	MCX-SX
Discount		59% # \$	60% # *
For Turnover of	ANY	(600 Cr & Above)	600+ Crore
Exchange Transaction Fees (Rs. / Per Cr)	6	45.1	42
<b>Save your cost @ BSE upto</b>	<b>86.70%</b>		

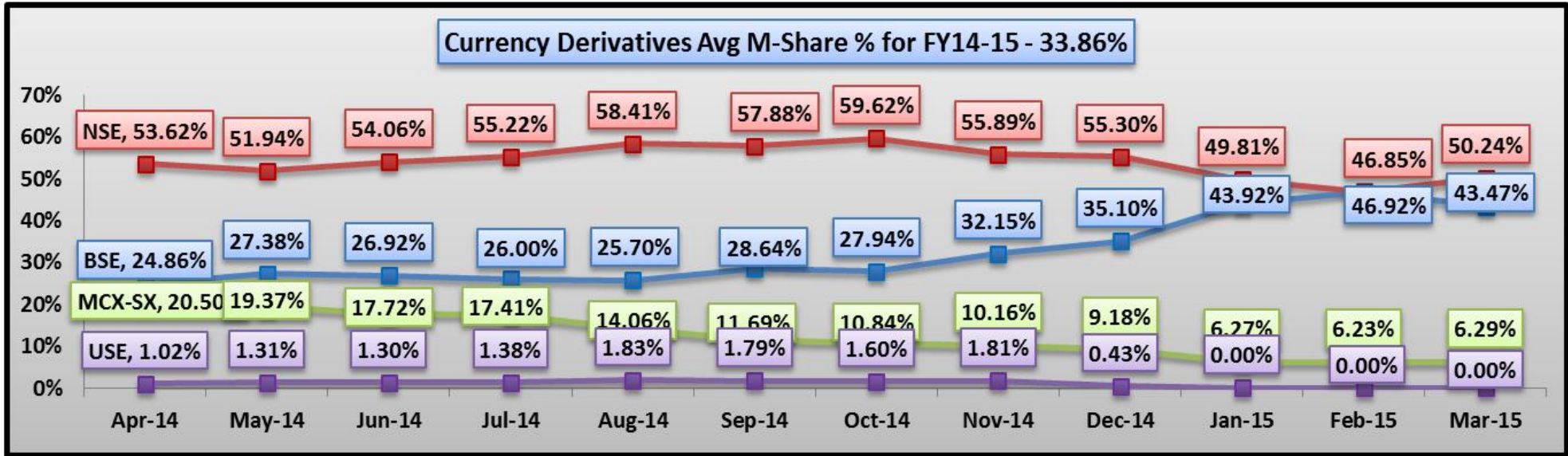
Currency Options			
	BSE	NSE	MCX-SX*
For Average Daily Premium Value 0- 12.5 Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	6	4000	3000
<b>Save your cost @ BSE upto</b>	<b>99.85%</b>		
	BSE	NSE	MCX-SX*
For Average Daily Premium Value 12.5 - 25 Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	6	3500	3000
<b>Save your cost @ BSE upto</b>	<b>99.83%</b>		
	BSE	NSE	MCX-SX*
For Average Daily Premium Value 25+ Cr.			
Exchange Transaction Fees (Rs. / Per Crore)	6	3000	3000
<b>Save your cost @ BSE upto</b>	<b>99.80%</b>		

\*on the active side of transaction, the passive side of the transaction shall be exempted for transaction charges.

➤ # Discount on daily turnover / \$ on incremental turnover above Rs 300 Crores



# Market-share comparison (Currency Derivatives)



## Members who have traded (till date)

242

## Average Daily Turnover for YTD 2015

Futures: 6,672 Crores

Options: 7,239 Crores

## Average num of contracts traded daily YTD 2015

Futures: 10,66,776

Options: 11,61,788

## Average num of contracts Open Daily YTD 2015

Futures: 6,67,714

Options: 1,60,881

*Above Figures are from Jan-15 to Mar-15*

# Snapshot

## Interest Rate Derivatives Segment Performance- 2014



Total Turnover (Since Launch)

44,493 crore \*

Average num of contracts Open Daily YTD 2015

78,741

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

### Business Benefits to Members

- Membership at no cost and no deposit, At present 120 + registered members
- Low transaction charges : No Transaction charges for one year (w.e.f. January 28,2014)
- Clearing & Settlement by ICCL and Uniform Risk Management & Margin framework

*Note : Total Turnover since launch from 28 Jan 2014 till Mar-15. & Avg No. of Contracts Open Daily period from Jan-15 to Mar-15*

# Technology Programme

## Colocation facilities



### Fastest Co-location

- Fastest Co-location service by a Stock Exchange in India with roundtrip network latency of only 20 microseconds.
- BSE trading system with low latency (200 microseconds) coupled with high end ALGO servers provide full efficiency to the ALGO trader.
- Order execution round trip latency is only 220 microseconds.
- Market access across Equity, Equity Derivatives and Currency Derivatives segments.
- State-of-the-art Data Centre services from NTT – Netmagic.

### 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% uptime

### Recent Upgrades at Co-location

- Low latency switches deployed at Colocation.
- Dedicated Colocation gateways with minimum hops to route the algo orders to BSE Trading system for low round trip latency.
- Connectivity between members' Colo Racks and Colocation switches upgraded from 1 Gbps Copper to 10 Gbps Fibre network.
- Members' trading servers directly connected to Colocation low latency switches via 10 Gbps Fibre network for low latency trading.
- Low latency 10 Gbps Solarflare NIC cards (Model No. : SFN7322F) will be provided to members by BSE.

# 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

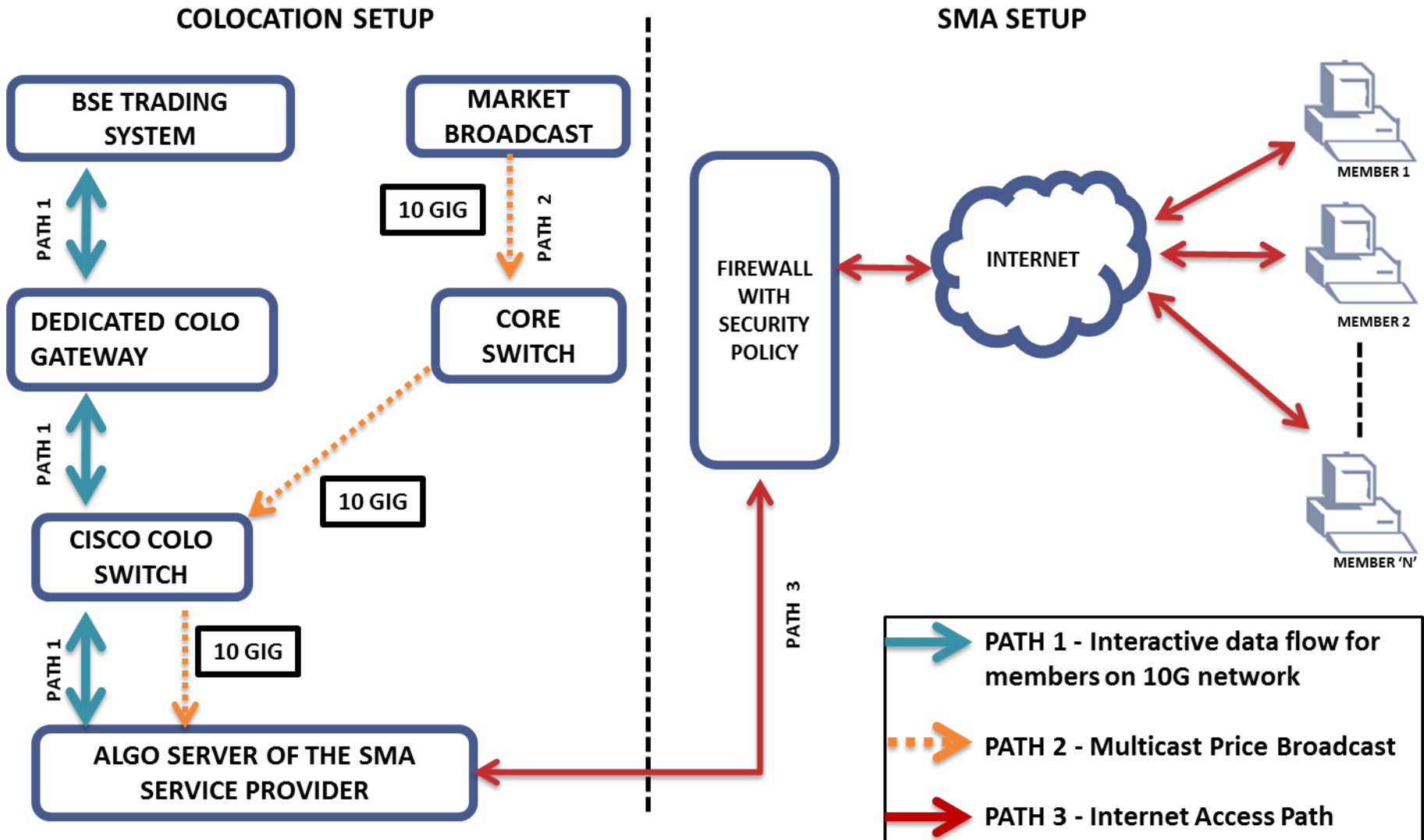
### Cost Comparison

Service	BSE			Other Exchange
Colocation Network Bandwidth	10 Gbps fiber optic network			10 Gbps fiber optic network
10G Go-live Month	Sept 2014			Oct 2014
Order Processing Roundtrip Latency (including colo network latency and processing time of Exchange Trading System)	220 µsec			1000 µsec #
Post migration drop in Roundtrip Latency (in µsec): Order Processing	1G	10G*	% drop	NIL #
	350	220	40%	
Post migration drop in Roundtrip Latency (in µsec): Colo Network	1G	10G*	% drop	
	150	20	90%	
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			<b>Interactive Connectivity : Annual Cost per connection</b> Rs.10 Lakhs for 400 messages/sec
				<b>TBT Market Data Feed : Annual Cost per feed</b> 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.
- 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

### 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.

### Advantages 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.

### Go-live status

- Live operations started in Dec, 2014.

***For more details kindly contact Mr. Vivek Garg, Email: [tech.prog@bseindia.com](mailto:tech.prog@bseindia.com), Mobile no: +91-75063 69722***

# Thank You

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

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

