

UPDATE APRIL 2019

BSE
EXPERIENCE THE NEW



LIQUIDITY • LOWER COSTS • TIGHT SPREADS • LARGE PARTICIPANT BASE

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About BSE



Evolution of the Exchange



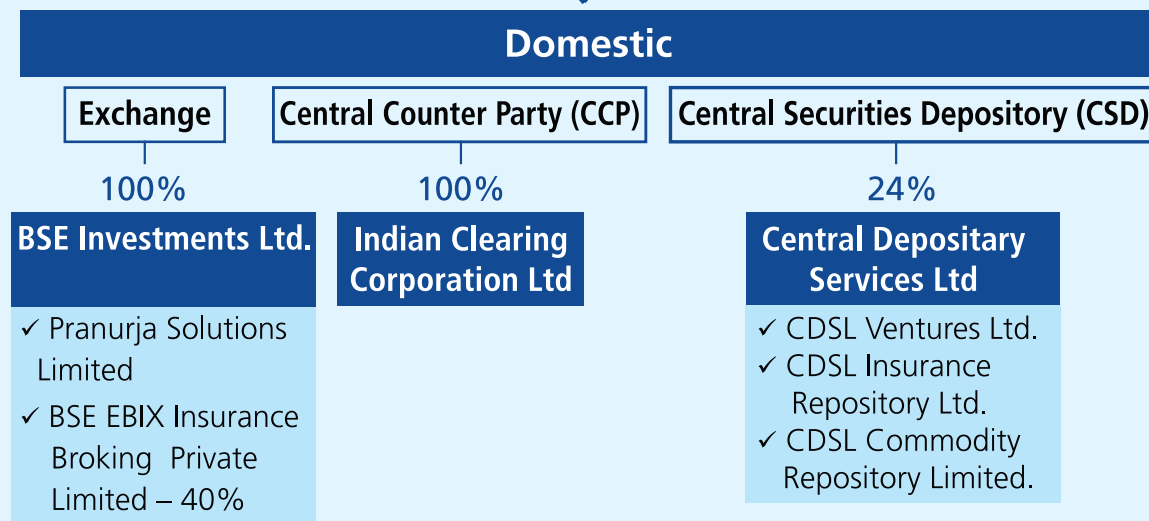
Key Milestones

Date	Milestones
1 st Oct, 2018	BSE launches its commodity derivatives segment making it India's 1st Universal Exchange
1 st Aug, 2018	BSE launches 'chatbot', "Ask Motabhai", for faster, more convenient access to stock market information
17 th July, 2018	BSE building received trademark
15 th Nov, 2017	BSE's 100% subsidiary, Marketplace Tech Infra Services, goes live with hosted trading platform BEST(BSE Electronic Smart Trader)
26 th Oct, 2017	India's Premier Stock Exchange BSE and World's largest Insurance Exchange Ebix, Inc. Sign MOU to Launch Joint Venture Company, for Setting up Pioneering Insurance Distribution Network in India
3 rd Feb, 2017	BSE becomes India's 1st listed Stock Exchange
16 th Jan, 2017	Commencement of Trading at India INX
9 th Jan, 2017	Hon'ble Prime Minister of India, Shri Narendra Modi inaugurated India International Exchange (IFSC) Ltd, India's 1st International Exchange
9 th July, 2016	Shri Arun Jaitley, Hon'ble Minister of Finance Unveiled the Commemorative Postage Stamp Celebrating 140 glorious years of BSE
2 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)
9 th July, 1875	The Native Share & Stock Broker's Association formed

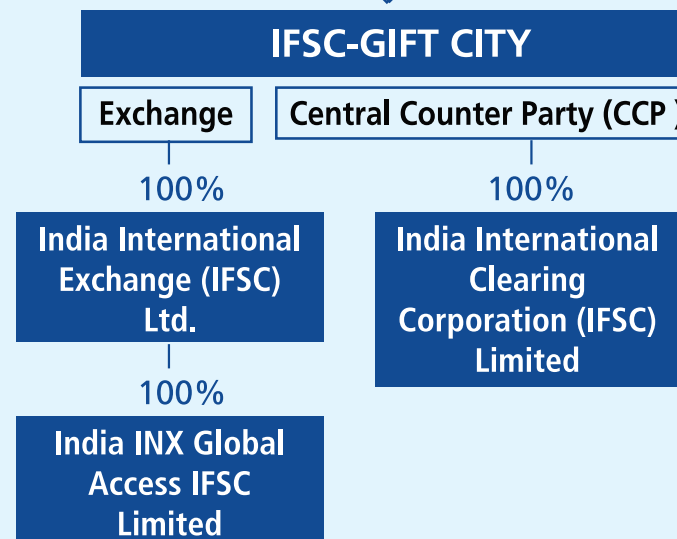
BSE Group

BSE*

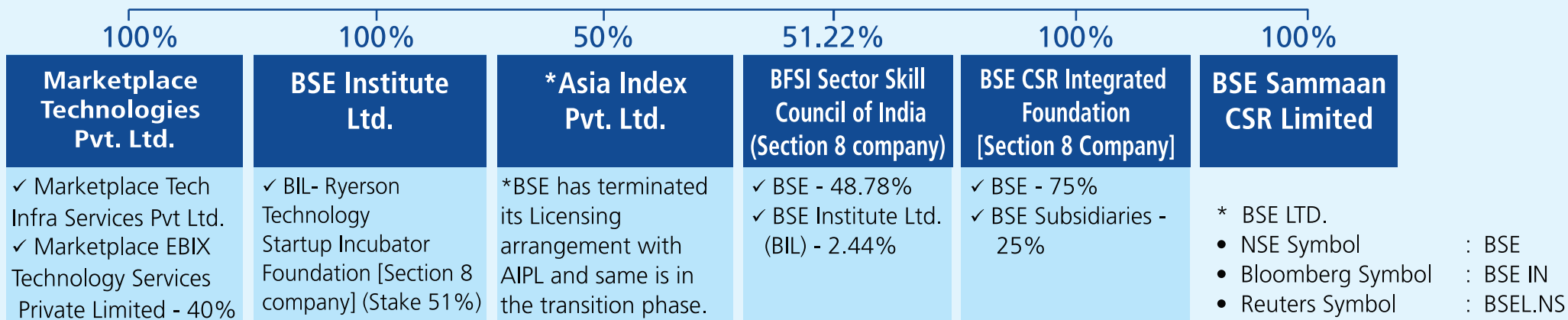
Domestic



IFSC-GIFT CITY



SERVICES



BSE Shareholding Pattern


BSE & Its Partners

As on 31st March 2019

Category	%
Trading Members & Associates of trading Members	32.44%
Promoter & Promoter Group	0
Public	67.56%
Non Promoter- Non Public	0
Share Underlying DRs	0
Shares held by Employee Trusts	0
TOTAL	100%



- Eurex T7 trading architecture




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




INSURANCE DISTRIBUTION

- BSE EBIX Insurance Broking Private Ltd JV with EBIX to deploy an insurance distribution exchange platform



- 4.88% investment in BSE as on 31.3.2019 as key user and supporter of platform
- Board Presence



- 2.42% investment in BSE by State Bank of India as on 31.3.2019 as key user and supporter of platform

Global Ranking



Source: World Federation of Exchanges




Data as of February 2019

Key Highlights





- 1** Strong Distribution Network
- 2** Diversified Business Model
- 3** Alliance with Global Exchanges
- 4** State –of-the -Art Infrastructure and Technology
- 5** Active Relationship with Market Participants
- 6** Financial Strength




Board of Directors

	NAME / TITLE	PROFILE
	<p>Shri Ashishkumar Chauhan Managing Director & CEO</p>	<ul style="list-style-type: none"> ■ Shri Ashishkumar Chauhan is the MD and CEO of BSE (formerly Bombay Stock Exchange), the oldest exchange in Asia and the fastest exchange in the world with 6 Micro seconds response time. BSE is also the World's largest exchange with more than 5,000 companies listed on it. He is credited with reviving BSE and completing the listing of its shares which was oversubscribed more than 51 times. He was also instrumental in setting up India International Exchange, India's first International exchange which was inaugurated by India's Prime Minister Shri Narendra Modi in January 2017. ■ Prior to joining BSE from 2000 to 2012, Ashish worked at Reliance Industries limited, India's largest business house as President and Group CIO, Head of Corporate communications and CEO of Cricket team Mumbai Indians in its formative years. From 1993 to 2000, he worked on setting up India's National Stock Exchange (NSE). He set up the initial technology, Screen based trading system, satellite communications network, equities and derivatives businesses and Nifty index for NSE amongst his many responsibilities. He is considered the father of modern financial derivatives in India due to his work at NSE. ■ He has received several Indian and International awards including Distinguished Alumnus Awards from both his Alma Mater IIT Bombay and IIM Kolkata, a rare achievement. He has also been ranked amongst the top CEOs in financial markets by Asian Banker and amongst top 50 CIOs in the world by Information Week US. He is also a member of several committees of Government, regulators and international associations. He is currently the chairman of the 23 member-country organization - South Asia Federation of Exchanges. He is also on the Board of Directors of IIM Raipur, NIFM and acts as Chairman of NIT Manipur. He recently co-authored a book on the history of the BSE titled "The Temple of Wealth Creation". He is also a distinguished visiting faculty at Ryerson University in Toronto, Canada and Honorary Professor at the Nottingham University Business School.
	<p>Shri Sumit Bose IAS (Retd.) Former Union Finance Secretary Public Interest Director</p>	<ul style="list-style-type: none"> ■ Shri Sumit Bose is Director on the Board of Coromandal International Limited, Tata AIG General Insurance Company Ltd, Foundation to educate girls globally, HDFC Standard Life Insurance Company Limited, Oil and Natural Gas Corporation Ltd. Vice Chairman, National Institute of Public Finance and Policy, New Delhi, Chairman, Board of Directors of Vidhi Centre for Legal Policy, New Delhi,, Board of Governors of The Doon School, Dehradun, a Member, Governing Body, Parivaar Education Society, Kolkata, Director, Jal Seva Charitable Foundation.
	<p>Justice Vikramajit Sen Former Supreme Court Judge and Chief Justice, High Court of Karnataka Public Interest Director</p>	<ul style="list-style-type: none"> ■ Justice Vikramajit Sen retired from the Supreme Court of India on 31st December 2015. Prior thereto practised mainly commercial law in the Courts in Delhi. Presently on the Board of several Corporations. In addition, conducting Arbitrations and giving legal opinion on complicated questions of law. He was appointed as acting Chief Justice and Chief Justice of the High Court of Karnataka. ■ Studied in St. Xavier's School in Delhi, followed by a BA (Honours) degree after attending St. Stephen's College, Delhi University. Received Law Degree from the Faculty of Law, Delhi University in 1974. ■ He is a Director on the Board of DCM Shriram Limited



Board of Directors

	NAME / TITLE	PROFILE
	<p>Shri S. S. Mundra Public Interest Director</p>	<ul style="list-style-type: none"> ■ Shri S.S. Mundra, recently retired as Deputy Governor of Reserve Bank of India on 30th July 2017 after completing a stint of three years. Prior to that, the last position held by him was as Chairman and Managing Director of Bank of Baroda from where he superannuated in July 2014. In a banking career spanning over four decades, Shri Mundra held several important positions including that of Executive Director of Union Bank of India, Chief Executive of Bank of Baroda (European Operations) amongst others. He also served as RBI's nominee on the Financial Stability Board (G20 Forum) and its various committees. Shri Mundra was also the Vice-chair of OECD's International Network on Financial Education (INFE). ■ Prior to joining RBI, Shri Mundra also served on Boards of several multi-dimensional companies like the Clearing Corporation of India Ltd (CCIL), Central Depository Services (India) Ltd. (CDSL), BOB Asset Management Company, India Infrastructure Finance Corporation (UK) Ltd. (IIFCL), India First Life Insurance Company Ltd., Star Union Dai-ichi Life Insurance Company Ltd., National Payments Corporation of India Ltd., etc. The experience gained in guiding these entities has bestowed him with wide leadership skills and keen insights in best practices in Corporate Governance. ■ Shri Mundra has been a regular presence as a Speaker on various Forums. He has delivered more than 60 speeches/presentations on diverse issues viz. banking, financial inclusion & literacy, MSME financing, audit, Fraud Risk Management, Cyber security, Consumer Protection, Human Resource Management etc. at both domestic and international forums. Many of these speeches have been published on the websites of Reserve Bank of India and that of the Bank for International Settlements. ■ Amity University has conferred the Degree of Doctor of Philosophy (D.Phil.), Honoris Causa, upon Shri Mundra, in recognition of his services in the field of banking and related areas. ■ Appointed as a Independent Director on the Board of Indiabulls Housing Finance Ltd.
	<p>Shri David Wright Public Interest Director</p>	<ul style="list-style-type: none"> ■ Shri David Wright, has worked for nearly 34 years in the European Commission from 1977-2011, after graduating from Worcester college, Oxford in 1974 in politics economics and philosophy (PPE). He held a variety of posts including at the beginning of his career responsibility for oil and gas data in the Statistical Office, Luxembourg (1977-1981) during the second oil crisis; energy policy coordination and modelling in the Directorate General for Energy, Brussels (1982-1987); and then industrial trade policy negotiations during the Uruguay multilateral trade round (1987-1989). ■ From 1989-1992 he was a member of President Delors' "Think Tank" called the "Cellule de Perspectives" where he worked on industrial policy and wrote the first Commission document on sustainable development. In this period he co-authored a book with Professor Alexis Jacquemin on the post-1992 EU political and economic agenda called "Shaping factors, shaping actors". From 1993-1994 he was a member of Sir Leon Brittans' Cabinet and worked on various aspects of trade and industrial policy, including completion of the Uruguay Round in 1994. In 1995 he became an Adviser to President Jacques Santer in his Cabinet – covering competitiveness, industrial and telecom policies, political relations with the UK and Ireland, financial services, risk capital and various other trade and foreign policy briefs. ■ From March 2000 – October 2010 he was first Director, then Deputy Director-General for securities and financial markets, then for all financial services policy in DG Internal Market and Services. He helped design and drive forward the Financial Services Action Plans to integrate the EU's capital and financial services markets. He was the rapporteur for both the Lamfalussy (2000/1) and De LaRosière Committees (2008/9), chaired the Securities and Banking Committees and represented the Commission in the Financial Services Committee and in various FSB/G20 fora. He also played a leading role in the EU-US financial markets dialogue in this period. ■ He was the EU Visiting Fellow at St Antony's College, Oxford until July 2011 and was a Member of the European Commission's Task force on Greece until the end of January 2012. ■ David Wright's appointment as Secretary General of the International Organization of Securities Commissions (IOSCO) commenced on 15 March 2012.





Board of Directors

	NAME / TITLE	PROFILE
	<p>Shri Umakant Jayaram Public Interest Director</p>	<ul style="list-style-type: none"> ▪ Shri Umakant Jayaram has 27 yrs Cross functional experience in Global Investment Banking, Finance Planning & Analysis ,Risk Consulting / Business transformation. ▪ Shri Umakant Jayaram has successfully led the Global Finance Planning and Analysis services function for JP Morgan Chase Investment Bank and delivered key breakthroughs in finance technology architecture change, in the area of Analytics and Business intelligence. He has also directed the Global Markets Structuring function in Deutsche Bank CIB centre in India. He has directed the Global Markets Operations strategy for ABN AMRO Investment Bank Operations across Equities, Fixed Income and Derivatives Clearing and Settlements. He is well versed with emerging markets products pricing, risk, regulatory and compliance issues relating to financial markets.
	<p>Smt. Usha Sangwan Former MD, Life Insurance Corporation of India Shareholder Director</p>	<ul style="list-style-type: none"> ▪ Smt. Usha Sangwan, was the first ever woman Managing Director of Life Insurance Corporation of India since its inception. ▪ She was the whole time Director of LIC of India, Board Member of General Insurance Corporation of India, , LIC Housing Finance Ltd., Axis Bank and Ambuja Cements Ltd. Director on the board of LIC Cards Services Ltd., Associate Director LIC Mutual Fund Trustee Private Ltd. Member of Governing Council of National Insurance Academy, a Trustee of LIC Golden Jubilee Foundation, Chairman of Trust - LIC of India (Regular Part-time employees) Pension Fund and a Member of Policyholder Protection Committee, Executive Committee, Risk Management Committee and Investment Committee of LIC of India She is on the Board of Grasim Industries Limited and Axis Bank Limited
	<p>Smt. Rajeshree Sabnavis Fellow Member of ICAI, Company Secretary Shareholder Director</p>	<ul style="list-style-type: none"> ▪ Smt. Rajeshree Sabnavis is part of the Direct Taxation Committee with the Bombay Chamber of Commerce where she is a Co-Chairperson. She is also a member of the EU Chamber of Commerce and a Director on the Board of BOB Capital Markets Ltd.

Management Team

	NAME / TITLE	PROFILE
	<p>Shri Ashishkumar Chauhan Managing Director & Chief Executive Officer</p>	<ul style="list-style-type: none"> ■ Shri Ashishkumar Chauhan is the MD and CEO of BSE (formerly Bombay Stock Exchange), the oldest exchange in Asia and the fastest exchange in the world with 6 Micro seconds response time. BSE is also the World's largest exchange with more than 5,000 companies listed on it. He is credited with reviving BSE and completing the listing of its shares which was oversubscribed more than 51 times. He was also instrumental in setting up India International Exchange, India's first International exchange which was inaugurated by India's Prime Minister Shri Narendra Modi in January 2017. ■ Prior to joining BSE from 2000 to 2012, Ashish worked at Reliance Industries limited, India's largest business house as President and Group CIO, Head of Corporate communications and CEO of Cricket team Mumbai Indians in its formative years. From 1993 to 2000, he worked on setting up India's National Stock Exchange (NSE). He set up the initial technology, Screen based trading system, satellite communications network, equities and derivatives businesses and Nifty index for NSE amongst his many responsibilities. He is considered the father of modern financial derivatives in India due to his work at NSE. ■ He has received several Indian and International awards including Distinguished Alumnus Awards from both his Alma Mater IIT Bombay and IIM Kolkata, a rare achievement. He has also been ranked amongst the top CEOs in financial markets by Asian Banker and amongst top 50 CIOs in the world by Information Week US. He is also a member of several committees of Government, regulators and international associations. He is currently the chairman of the 23 member-country organization - South Asia Federation of Exchanges. He is also on the Board of Directors of IIM Raipur, NIFM and acts as Chairman of NIT Manipur. He recently co-authored a book on the history of the BSE titled "The Temple of Wealth Creation". He is also a distinguished visiting faculty at Ryerson University in Toronto, Canada and Honorary Professor at the Nottingham University Business School.
	<p>Shri V Balasubramaniam Managing Director & Chief Executive Officer .(INX)</p>	<ul style="list-style-type: none"> ■ Shri V Bala is the founding Managing Director and Chief Executive Officer of India International Exchange IFSC Ltd. (India INX) the first International Exchange from India in GIFT City International Financial Services Centre Special Economic Zone which started its operations from JAN, 2017 and a wholly owned subsidiary of BSE (Asia's first stock exchange). He also holds board position in the following organisations – 1) India INX Global Access (IFSC) Ltd., 2) BSE Institute Limited – Education business, 3) BSE Sammaan – CSR Exchange and 4) India International Clearing Corporation IFSC Limited. ■ Prior to this, he was the Chief Business Officer of BSE heading the business development encompassing all business segments viz. Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform and SME platform. In addition to the markets business, he was also responsible for the listings and data business of BSE and managing the entire trading operations and membership operations. ■ He has over 25 years of experience in the Capital Markets industry and has previously worked with Reliance Group as Vice President and was also as co-founder of Marketplace Technologies Limited which was acquired by BSE. ■ He was also part of the core team involved in setting up the National Stock Exchange of India. He was instrumental in creating the Capital Market segment, Nifty Index creation, setup of NSCCL as the first clearing corporation in India, NCFM certification creation and the Futures and Options segment inter-alia. ■ He has Masters in Commerce from the University of Mumbai, Rank holder from the Institute of Cost Accountants of India, Diploma from Institute of Chartered Financial Analysts of India and is a Certified Information Systems Auditor.

Management Team

	NAME / TITLE	PROFILE
	Shri Nehal Vora Chief Regulatory Officer	<ul style="list-style-type: none"> ■ Shri 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 ■ 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 ■ 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
	Shri Nayan Mehta Chief Financial Officer	<ul style="list-style-type: none"> ■ Shri Nayan Mehta currently heads all finance, accounting, treasury and taxation functions of the Exchange. He represents BSE as the Senior Vice Chairman on the Executive Board of the South Asian Federation of Exchanges. He represents BSE on the Boards of group companies and joint ventures of BSE and as a member of the Qualified Audit Review Committee of SEBI. ■ He has previously worked at Credit Analysis & Research Ltd. as Joint General Manager (Accounts), CFO at Multi Commodity Exchange of India Limited and has also worked at the National Stock Exchange ■ He holds a Bachelors in Commerce degree from University of Mumbai. He is a qualified Chartered Accountant as well as a qualified Cost and Management Accountant.
	Shri Kersi Tavadia Chief Information Officer	<ul style="list-style-type: none"> ■ Shri 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 ■ 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.
	Shri Neeraj Kulshrestha Chief of Business Operations	<ul style="list-style-type: none"> ■ Shri Neeraj Kulshrestha is responsible for Business Development for Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform and SME platform. He is also responsible for Trading Operations and Development, Listing Sales and Operations 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.

Lines of Business

Listing Business		Market Business				Data Business
Primary Market	Secondary Market	BSE Star Mutual Funds platform	New Debt Segment	Membership	Post Trade	Information Products
<ul style="list-style-type: none"> ▪ IPO ➢ EQUITY ➢ SME & Startups ➢ BOND ▪ FPO ▪ BSE Hi-Tech ▪ Sovereign Gold Bonds ▪ Mutual Fund-NFO ▪ Non-Competitive Bidding in G-Sec & T- Bills 	<ul style="list-style-type: none"> ▪ Equity Cash ➢ Small & Medium Enterprises ➢ Offer to Buy ➢ Offer for Sale ➢ Close Ended Mutual Funds ➢ Corporate Bonds ➢ Government Securities and Sovereign Gold Bonds ▪ Equity Derivatives ▪ Currency Derivatives ▪ Commodity Derivatives ▪ Interest Rate Futures ▪ Securities lending & borrowing (through ICCL) ▪ ETF 	<ul style="list-style-type: none"> ▪ Order placement platform 	<ul style="list-style-type: none"> ▪ OTC Corporate Bond Reporting CP/CD ▪ Trade Repository 	<ul style="list-style-type: none"> ▪ Trading Members ▪ Clearing Members ▪ Self-clearing Members 	<ul style="list-style-type: none"> ▪ Clearing and Settlement Services through ICCL ▪ Depository Services through CDSL 	<ul style="list-style-type: none"> ▪ Market Data ▪ Corporate Data ▪ Corporate Action through SWIFT ▪ End of Day Products ▪ Historical Data ▪ Macro economic Indices

Supporting Business

Technology	Index Products	Training	Corporate Social Responsibility
<ul style="list-style-type: none"> ▪ IT services & solutions 	<ul style="list-style-type: none"> ▪ S&P BSE SENSEX ▪ Sectoral Indices ▪ Sustainability Indices ▪ Thematic Indices ▪ Fixed Income Indices 	<ul style="list-style-type: none"> ▪ Training ▪ Certification ▪ Skill Development ▪ Technology Incubator & Accelerator Program 	<ul style="list-style-type: none"> ▪ BSE CSR Samman



Listing Business

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Total Fund Mobilization through Public Offer (Equity and Debt)

- Total Rs. 2,20,663 crs (\$ 34.67 billion*) have been raised in Indian Markets through Stock Exchanges in India since April 2016
- Rs. 1,39,347 crs (\$ 22 billion*) have been raised at BSE since April 2016
- BSE is the market leader with 63% of total funds raised
- BSE has the largest number of listed companies in world

4689
Companies listed
with Equities

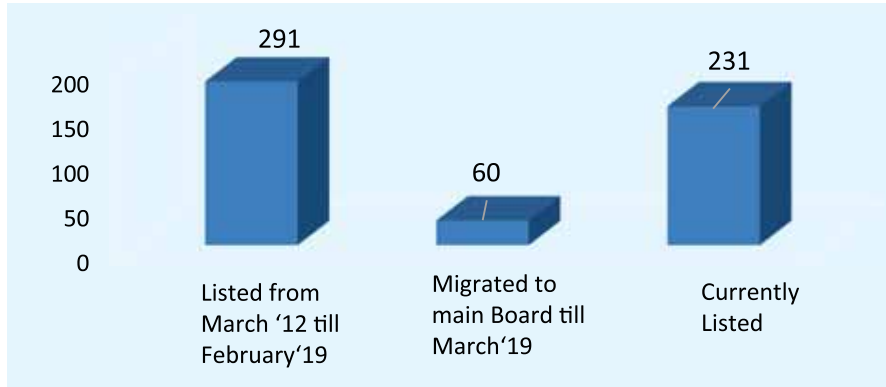
Leadership in Debt Market

- BSE is the preferred choice for listing Privately Placed Debt Instruments (PPDI). In FY17-18, BSE has listed 1996 Instruments with an amount totalling to Rs. 4,28,905 crore vis-a-vis 894 instruments on other Exchange. .
- In F.Y. 2018-19 Exchange has listed 1,880 instruments with an amount totalling Rs. 4,34,466 crores vis a vis 655 instruments on the other Exchange.
- In F.Y 2017-18, 8 Debt Public issues have tapped the market . BSE is the Designated Stock Exchange for all the public issues with 5 issues listed only on BSE.
- In F.Y 2018-19, 25 Debt Public issues have tapped the market, BSE is the Designated Stock Exchange for 24 public issues and 14 issues were listed only on BSE.

* Figures does not include Amount Raised in SME segment at BSE and NSE

BSE SME – India’s Biggest SME platform

Companies on BSE-SME Platform



SME IPO INDEX



Calendar Year

- BSE is the first stock exchange in India to receive approval from SEBI on 26th September 2011 to launch SME Platform.
- SME IPO Index with a Base value of 100 as on 16th August, 2012 is aimed at tracking the companies listed on SME platform was launched on 14th December 2012. As on 31st March, 2019 its value was 1,757.83.
- The Platform facilitates capital raising by 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.
- Total Market Capitalization of 231 companies –Rs.11,625.44 Crs
- Total Market Capitalization of 60 companies Migrated to main Board – Rs.6571.66 Crs

60% of Market Share in terms of number of SMEs listed

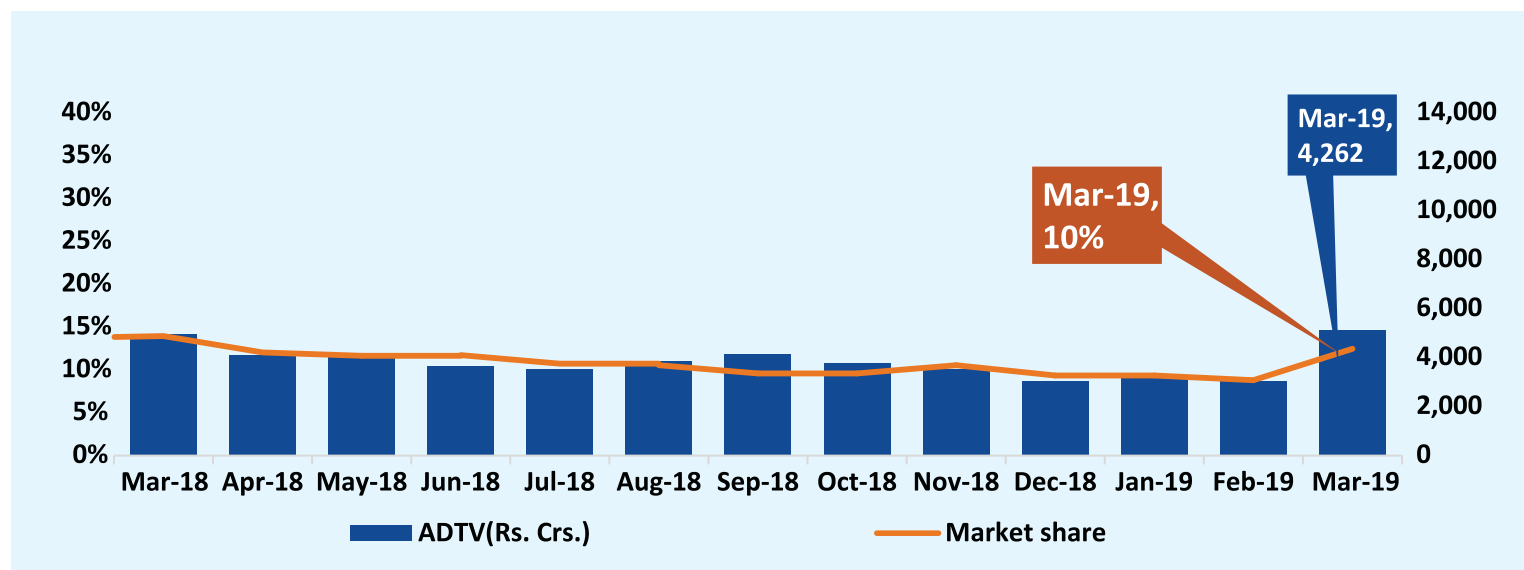


**Market
Business**

3SE
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Equity Cash Market

Turnover & Market Share%



Revision in transaction charges of equity segment w.e.f August 01, 2018

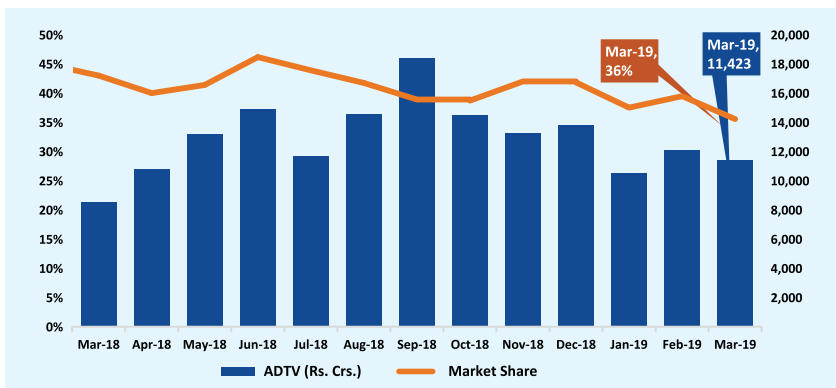
Monthly Turnover in Rs. Crs in calendar month	Rate (in Rs.) per Crore on incremental turnover.
Upto 750	300
Above 750 and Upto 1500	290
Above 1500 and Upto 2500	280
Above 2500 and Upto 5000	270
Above 5000 and Upto 7500	260
Above 7500	250

<https://www.bseindia.com/markets/MarketInfo/DispNewNoticesCirculars.aspx?page=20180719-36>

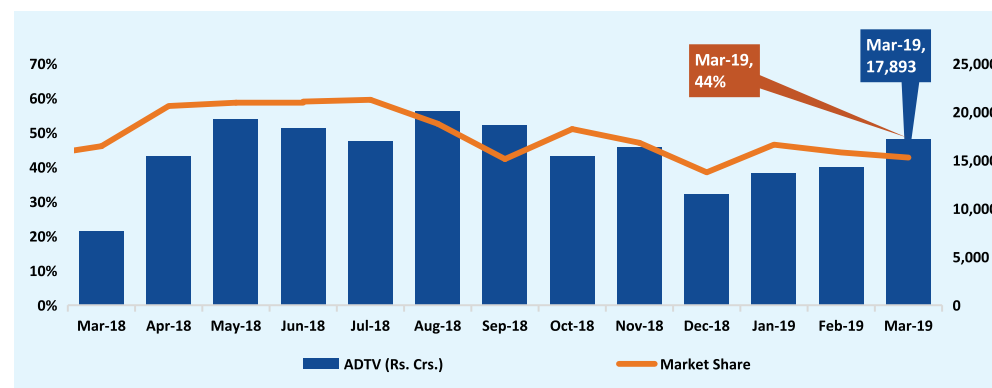
Data as of March 2019

Currency Derivatives

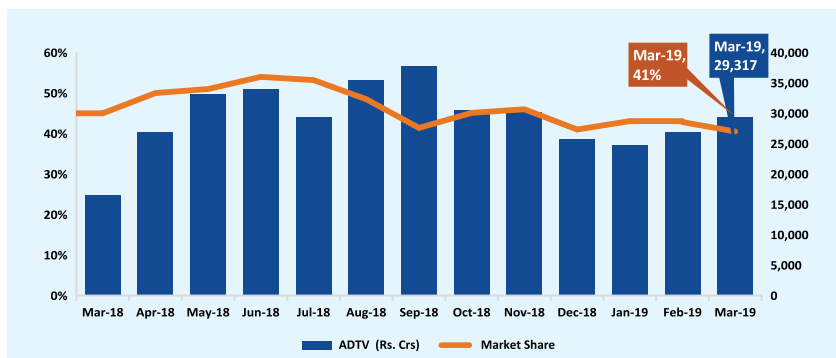
Currency Futures



Currency Options



Combined Turnover & Market Share

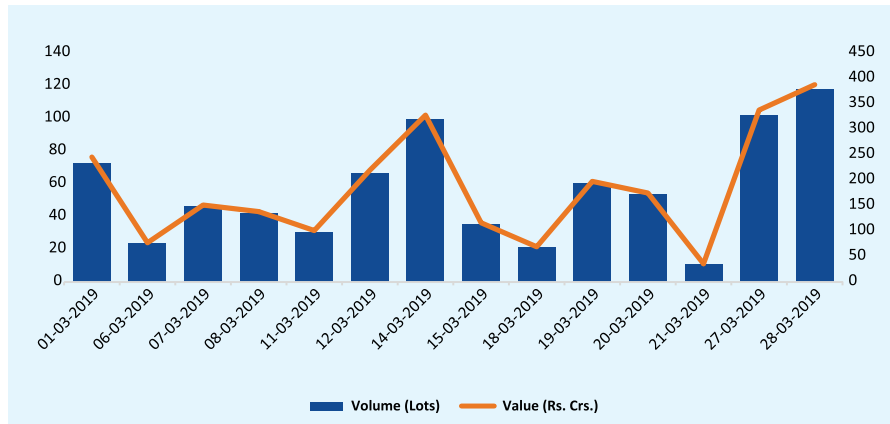


Revision in Transaction charges in Currency Derivative Segment w.e.f 1st Jan 2018

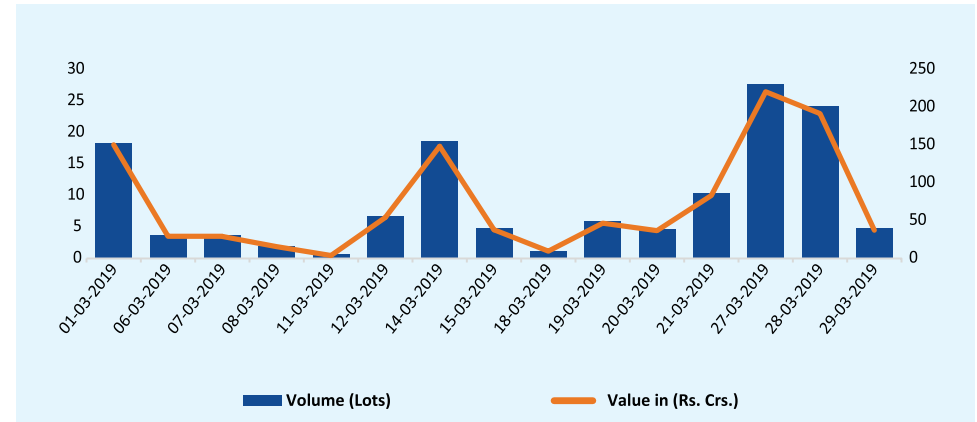
Sr. No.	Currency Options - Charges Applicable per crore on premium Value (on both active and passive side)	
1	Rs.100/-	
Sr. No.	Incremental Monthly Turnover in Currency Futures (Rs. Crore)	Currency Futures - Charges Applicable per crore (on both active and passive side)
1	Turnover < Rs.5,000 Crores	Rs.22
2	Turnover => Rs.5,000 Crores & < Rs.10,000 Crores	Discount of 25% on Rs.22 (i.e. Rs.16.50)
3	Turnover => Rs.10,000 Crores & < Rs.20,000 Crores	Discount of 50% on Rs.22 (i.e. Rs.11)
4	Turnover => Rs.20,000 Crore	No Transaction charges

Commodity Derivatives Daily Volume

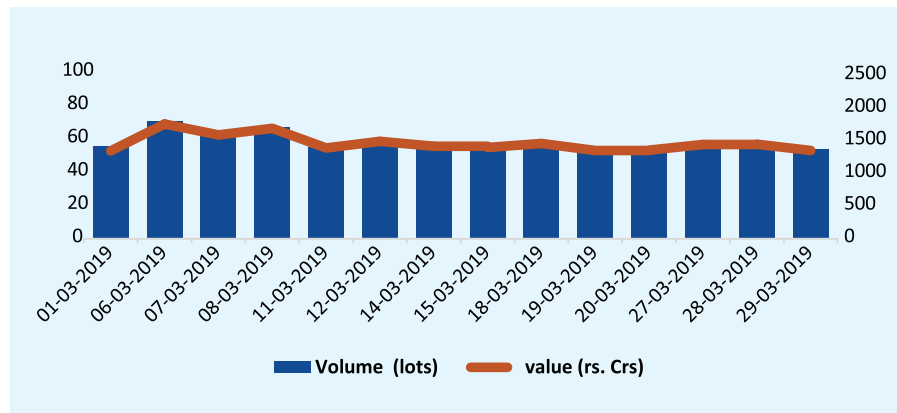
GOLD



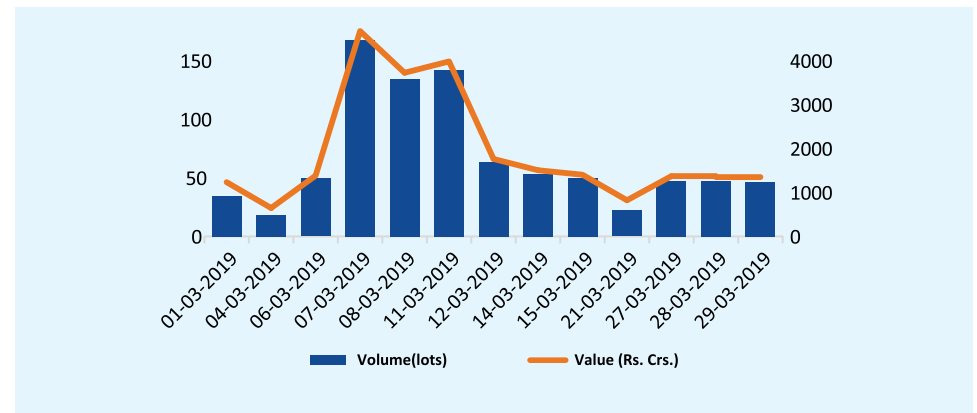
SILVER



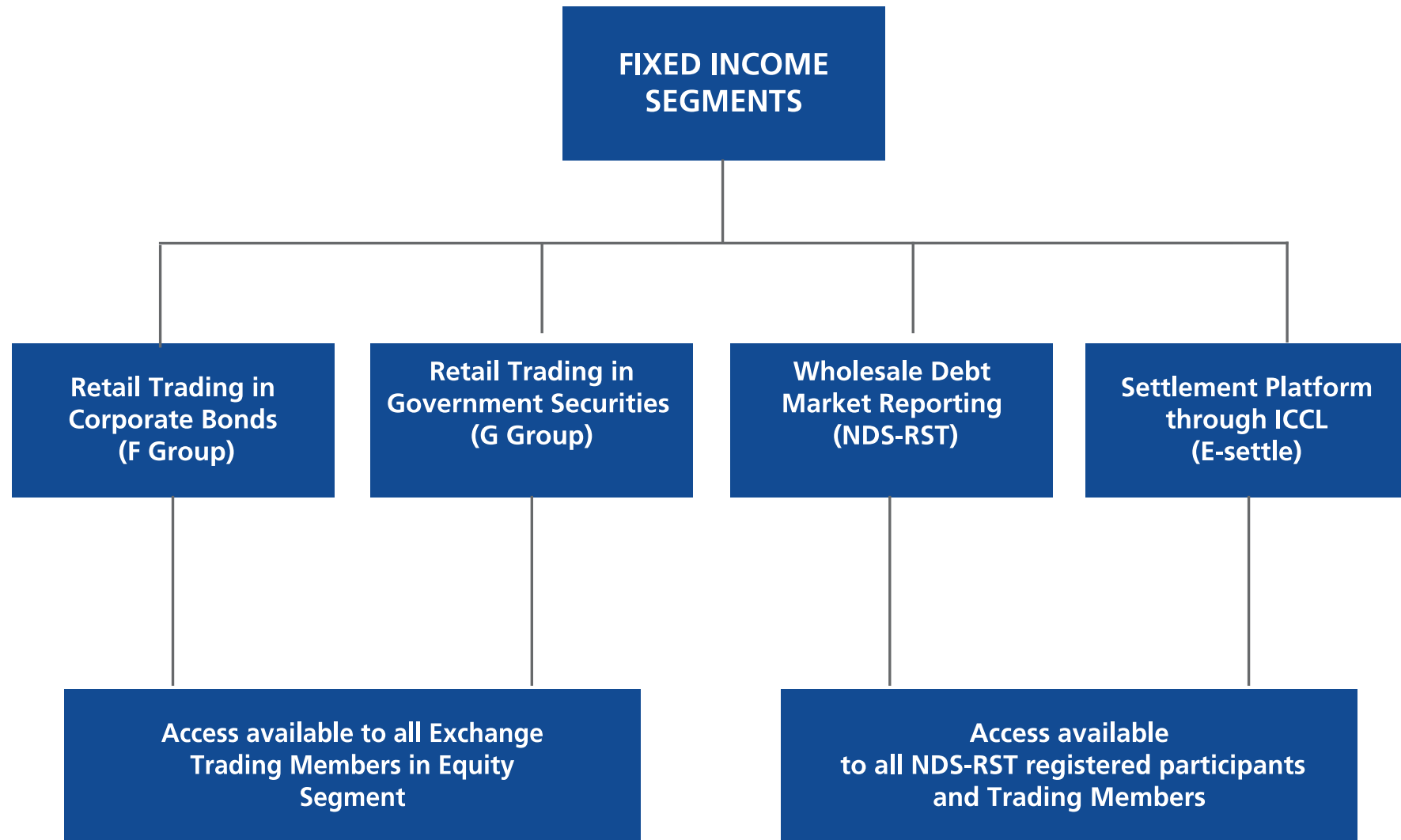
GUAR SEED



COTTON

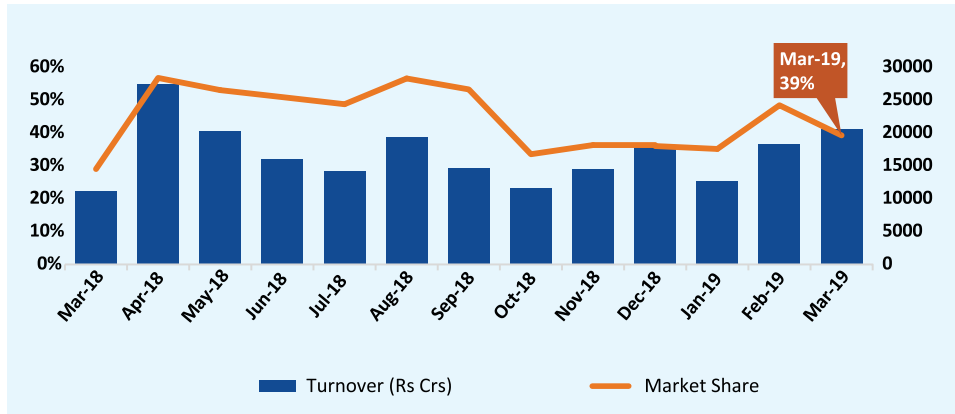


Fixed Income Segments Overview

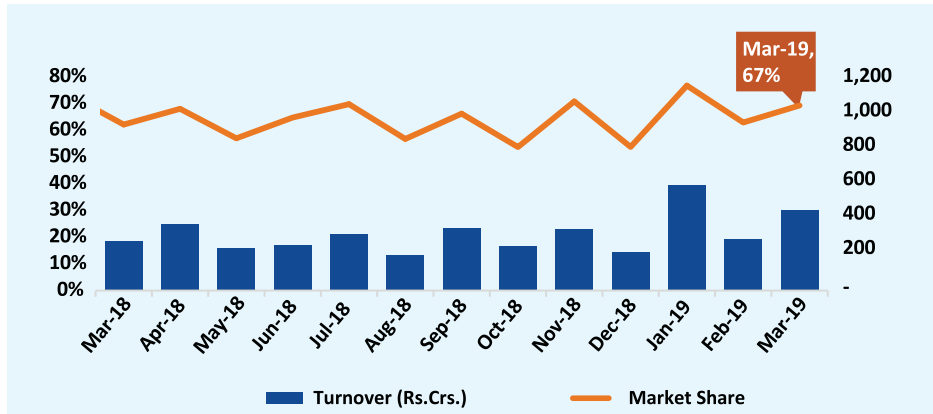


Fixed Income Segments

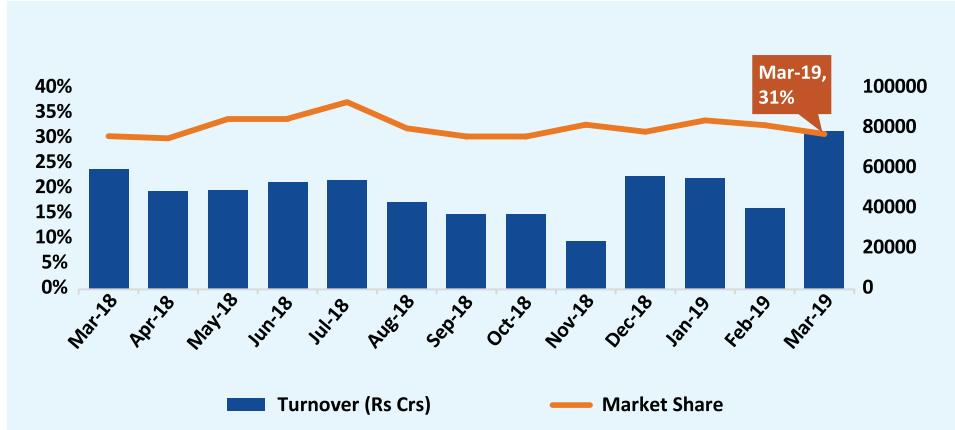
G-Sec Reporting



Retail Trading in Corporate Bonds



Corporate Bond Reporting

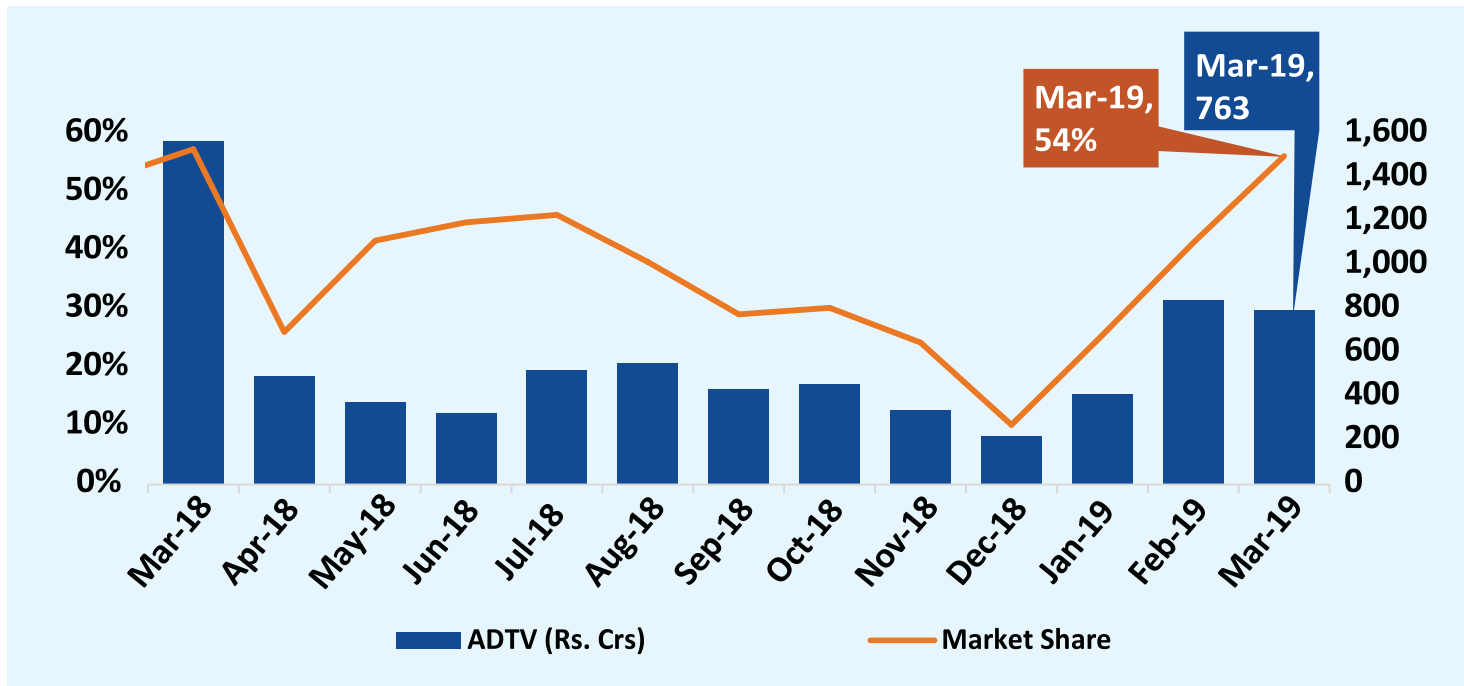


ICCL Settlement



Interest Rate Derivatives

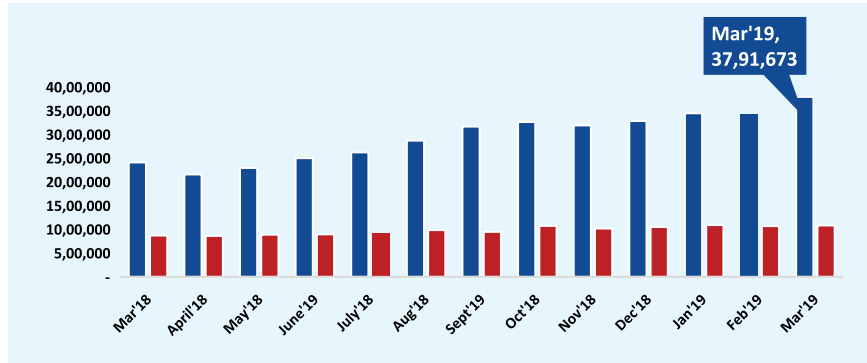
ADTV Turnover & Market Share %



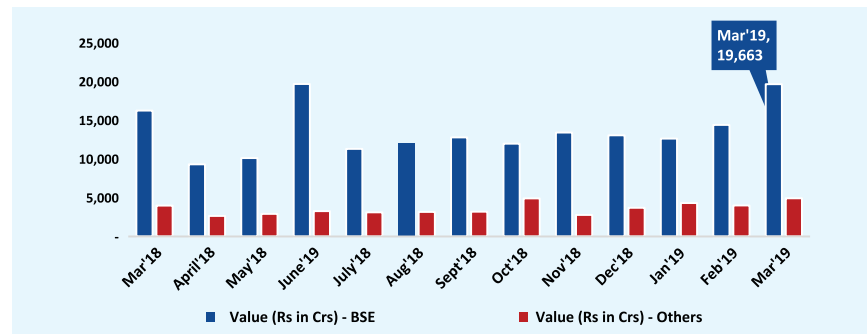
Transaction Charges Rs.10 per Crore

StAR MF-India's largest online MF Distribution platform

No. Of Orders



Value (Rs. Crs.)



BSE StAR MF is the largest digital platform in MF Industry



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

PLATFORM FEATURES

- Completely digital- Demat and Non Demat /Mutual Fund transactions, while facilitating the benefits of Physical mode
- 24x7 order acceptance
- SGB enabled for MFDs
- 6 day order holding facility
- Paperless SIP
- Any day STP and SWP
- Paperless bank Mandate Eg., ISIP

CONNECTIVITY & USPs

- Unique overnight investments framework
- Multi-mode of platform access
- Completely digital and REAL Time Investors registration / onboarding
- Widely accepted by NDs / Brokers / IFA Platform / New age Digital Distributors / IFAs/ RIAs
- E-submission and online MFD Registration

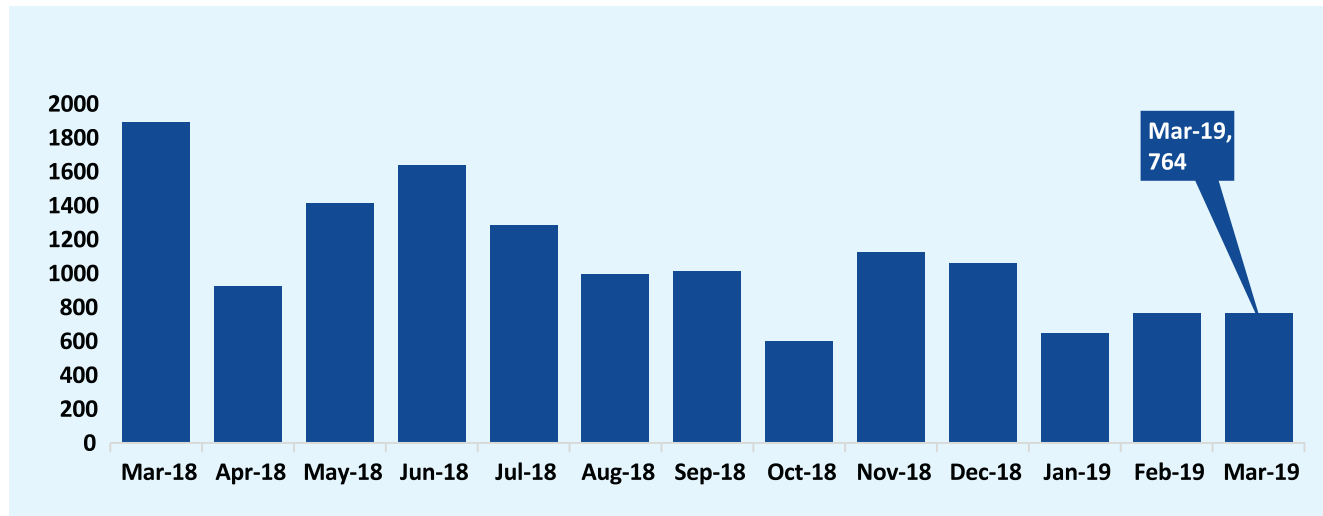
PLATFORM STATISTICS

- Processing over 37.91 lakh orders for the month of March 2019.
- Over 3.60 crore orders transitioned aggregating Rs.1.61 lakh Crore on BSE StAR MF Platform for FY 18-19
- Over 170 Lakh orders transitioned aggregating to Rs 1,17,824 Crs on BSE StAR MF Platform during FY 17-18
- Market share of 78%

Data as of March 2019

Exchange Traded Funds

Turnover (Rs Crs.)

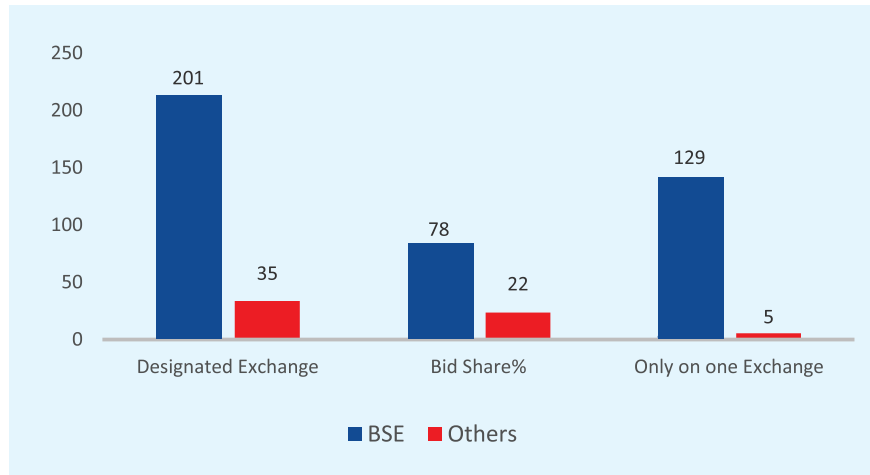


- Exchange traded fund is a security that tracks an index, a commodity or a sector like an index fund or a sectoral fund but trades like a stock on an exchange
- It is similar to a close ended mutual fund listed on stock exchanges
- BSE in its effort to bring greater participation for retail investors in the Indian landscape has tied up with market makers for ETF's
- 44 ETF listings on BSE as on February 2019*

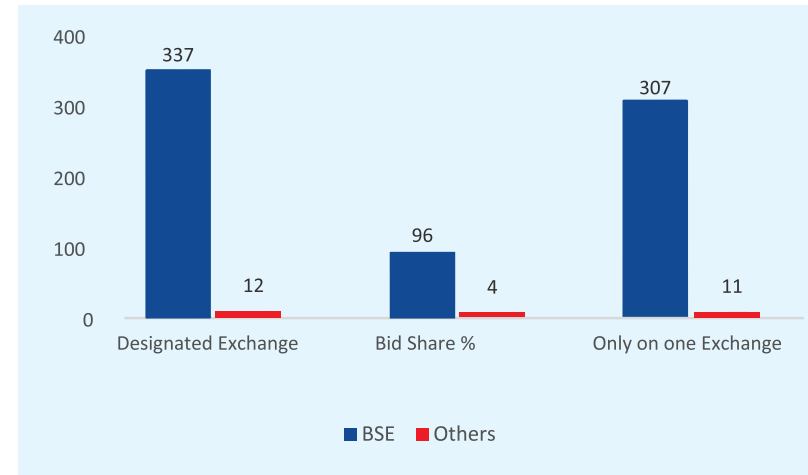
*Source: World Federation of Exchanges

Capital Raising Platforms - OFS/OTB/ BOND

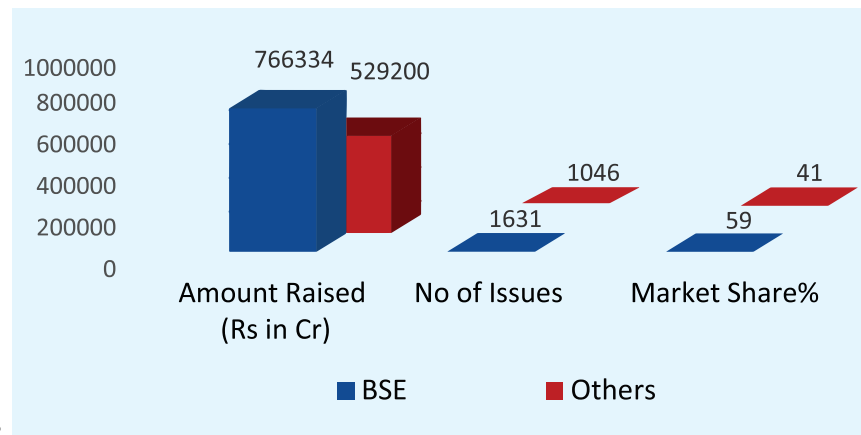
BSE's Leadership in OFS*



BSE's Leadership in OTB**



BSE's Leadership in BSE BOND***



* Since Feb 2012
 ** Since July 2015
 *** Since July 2016



**Data
Business**

3SE
EXPERIENCE THE NEW

Data Business Product

Market Data

- Equity Level 1 – Real-time & 1 minute Snapshots
- Equity Level 2 – Real-time
- Indices – Real-time & 1 minute Snapshots
- Derivatives (Equity , Index , Currency & Interest Rate Derivatives) – Real-time

Corporate Data

- Corporate Announcement
- Financial Results
- Shareholding Pattern
- Corporate Action - through SWIFT

End of day or Historical

- Quotation files
- Annual report
- Daily Bulletin
- Sector Classification
- Trade and Order book data



Technology Initiatives

BSE
EXPERIENCE THE NEW

BOW API – Build Your own Trading Front End

Single API Interface to Trade on Multi Exchange segments

BOW API- Overview

- **Supports :**
 - Exe
 - Browser
 - Mobile App.
- Connect to BOW OMS
- Real Time Market Data and RMS
- High Security – IP Locking.

Exchange Covered

- BSE
- NSE
- MCX
- NCDEX



Segment Support

- Equity
- Equity Derivatives
- Currency Derivatives
- Interest Rate Future
- Offer For Sale
- SLB
- Debt
- ITP
- Commodity Derivatives

Connectivity

- Internet
- Leased Line

Key Advantage & Offerings

Multi Fold Advantage:

- ❖ Encourage members/vendors to develop their OWN Front-End.
- ❖ Members Can use Hosted BOW's Robust OMS and RMS
- ❖ Member is free from any exchange API changes . BOW API will manage such changes
- ❖ No IT infrastructure / Connectivity cost to the Member.

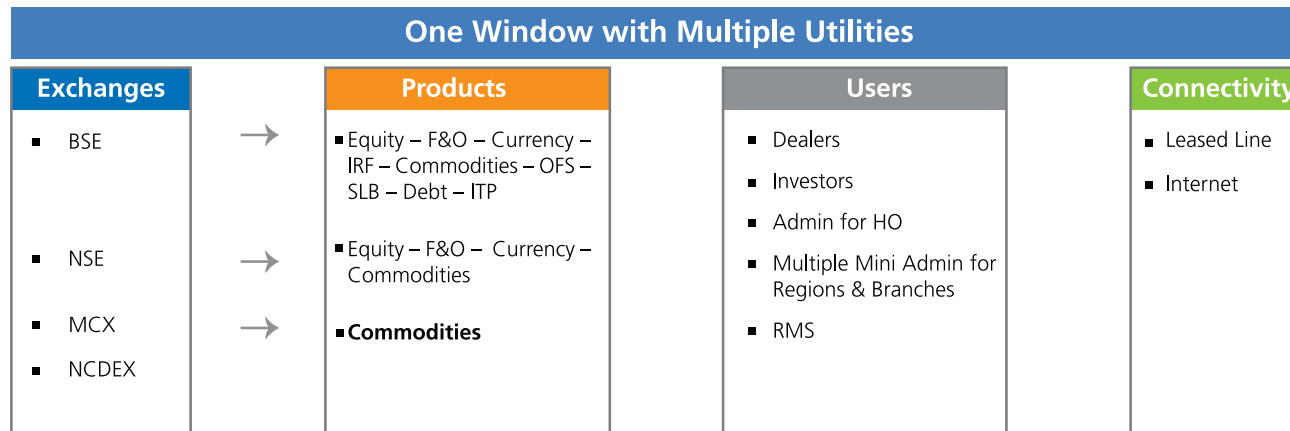
Key Offerings:

- ❖ Real Time market data to display in innovative ways.
- ❖ Order & Trade Management
- ❖ User Management
- ❖ Risk Management through BOW Admin interface
- ❖ Payment Gateway interface
- ❖ Report Management

BOW API- Free of cost for all Members



Bolt plus - Member Trading interface



Application for Desktop and Mobile

- Single window for Multi Exchange Segments with all Asset Class.
- Combined Market Depth.
- Facility of After Market Orders (AMO).
- Real Time Margining and Risk Monitoring.
- MTM Based Single Click Auto square Off. Timer Based Square off.
- Top Gainers / Top Losers - Most Active by VOLUME / VALUE.
- Corporate Action Information.
- Customized short cut keys - predefined Key Mapping Styles .
- NEWS Plus with RSS feeds and Twitter.
- Customized Add on of Web links.

- No IT infrastructure cost to the Member.
- Completely Hosted Application.
- Single Application for all Users Types .
- Trade commencement in one day.
- Real time support services.

Payment Gateway Integrated with Bill Desk

Bolt+on web (BOW)- Free of cost for all Members



BEST (BSE Electronic Smart Trader)- Features

Hosted Trading and Risk Management Application

One Window with Multiple Utilities

Exchanges/Segments

- BSE (Equity, Equity Derivatives, Currency Derivatives, Commodity Derivatives, MF)
- NSE (Equity, Equity Derivatives, Currency Derivatives, Commodity Derivatives)
- MCX
- NCDEX

Users

- Admin
- Multiple Parallel Admin
- Branch Admin
- Dealer
- Offline Client
- Online Client

Features

- Real time Risk Management
- User Management
- Multi Exchange/Segment trading

Roles & Functionalities

Admin

User Management

- User Creation
- Creation & assigning roles
- Manage Users
- Reporting & MIS
- Send Message

Risk Management

- Comprehensive Risk Rules
- Real time Margin & MTM calculation
- Managing different Risk levels
- Multiple Trading Products
- Admin Square off
- MIS Auto Square off

Users

Dealers

- Multiple Exchange & Segments for Trading
- Real time broadcast
- Basket Order, Spread Order, After Market
- Order, Cover Order functionality
- Online IV's for Option Traders
- Payment Gateway

Online Client

- Common login for EXE, WEB & Mobile platform
- Real time broadcast
- Payment gateway
- Order & Trade reports
- Historical reports

BEST- Free of cost for all Members

BSE's -World Class Trading Infrastructure



- Products available for trading
 - Currency Derivatives – 29th November, 2013
 - Interest Rates Futures - 28th January, 2014
 - Equity Derivatives - 10th February, 2014
 - Equity – 7th April, 2014
 - Commodity Derivatives – 01st October, 2018

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

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

- Latency : < 6 μ s (Gateway in to Gateway out)
- Network latency for Colo users – 10 μ s
- Throughput Capacity: 5 lacs order per second
- Scalability: Horizontally scalable by adding partitions



Technology Programme –Co-location facilities

Fastest Co-location

- BSE is the fastest Exchange in the world with a speed of 6 microseconds.
- BSE provides the fastest Co-location service in India with round trip network latency of less than 10 microseconds.
- At BSE Co-location, response for an order has round trip latency of about 16 microseconds (including 10 microseconds of Co-location network latency).
- Market access across Equity, Equity Derivatives and Currency Derivatives segments.
- Extension of Precision Time Protocol (PTP) from BSE's Grandmaster clock to the Co-location 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 multicast (EOBI) is provided to Co-location members at no cost.
- State-of-the-art Data Centre services from NTT – Netmagic.

BSE Co-location Data Centre

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
- Market Data feed from Thomson Reuters Electron network
- 99.999% uptime

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 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
- Thomson Reuters International Services Pvt Ltd.
- Resolute Softech

Cost Comparison

Service	BSE	Other Exchange
Co-location Network Bandwidth	10 Gbps fiber optic network	10 Gbps fiber optic network
Roundtrip Latency (in μ sec): Exchange Response Time	6	500 #
Roundtrip Latency (in μ sec): Colo Network*	10	500 #
Roundtrip Latency (in μ sec): Exchange Response Time + Colo Network Latency	16	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 connectivity cost	Free	Annual Cost per connection Rs.10 Lakhs for 400 messages/sec
Market data connectivity cost	Free Market Data since November 2010. Free EOBI feed since June 2015.	Free Tick By Tick Data since July 2018.

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

Sponsored Market Access

Implementation of 'Sponsored Market Access' (SMA) at Co-location

- 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 Co-location. The members can connect to this SMA algo server at Co-location via Internet.
- The algo strategy parameters can be triggered from the member front-end application and sent to the SMA algo server at Co-location.
- The corresponding algos will generate orders to be sent to BSE trading system through Co-location network.
- The algo orders will be sent to the BSE Trading system via the high speed Co-location gateway for minimum latency.
- Members can execute orders over high speed Co-location network without installation of any infrastructure at Co-location by the members.

Advantages

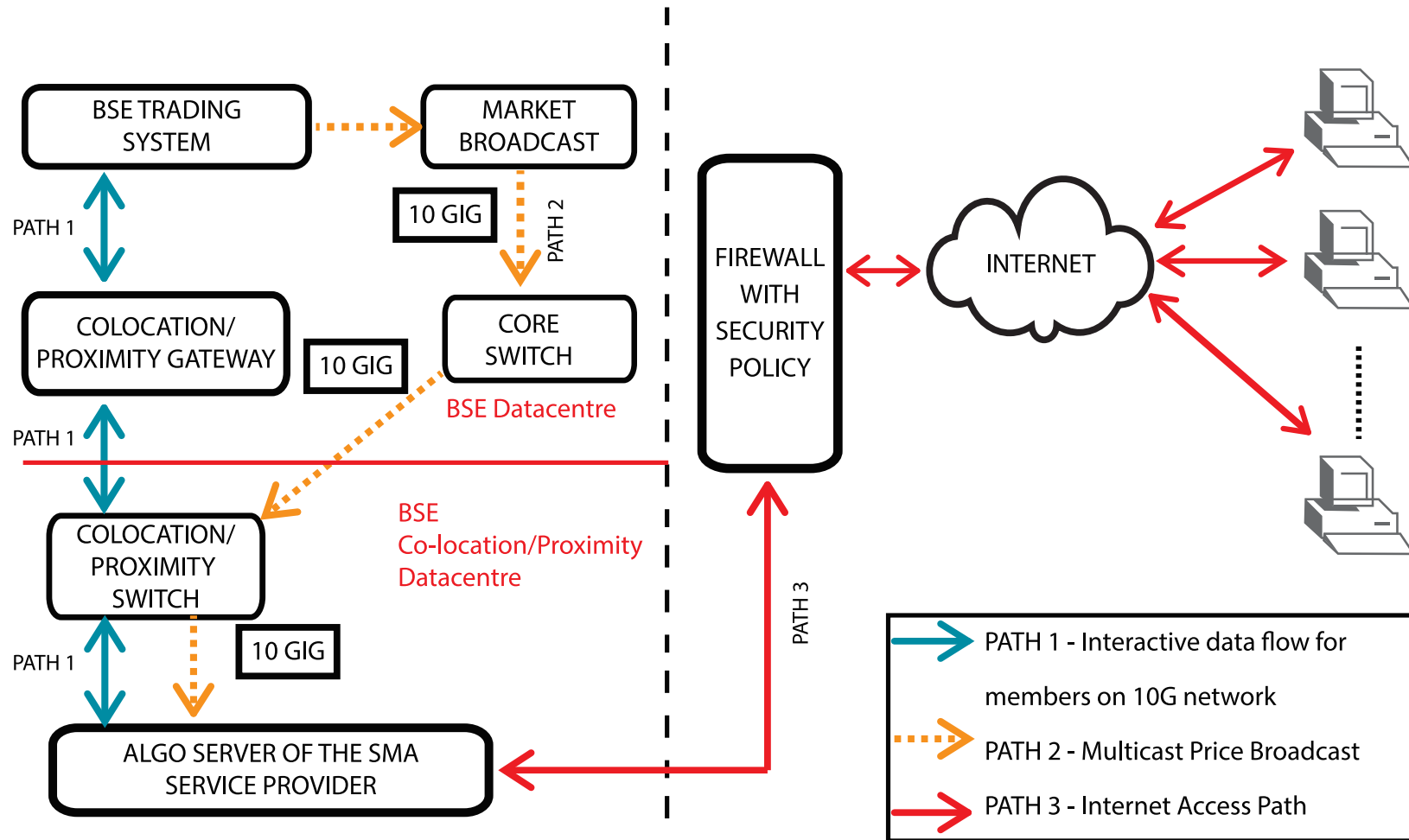
For Members

- Zero capital expenditure on infrastructure at Co-location.
- The algo orders will be generated at Co-location and sent to the BSE Trading system via the high speed 10G Co-location 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 Co-location.
- Vendor can service multiple clients with a centralized algo server installed at Co-location. Hence, vendor's cost of maintenance is low.

Sponsored Market Access New Facility at Co-location



Contract Symbols

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	Currency USDINR Futures	Futures Contract
LERA Curncy	Currency EURINR Futures	Futures Contract
LGBA Curncy	Currency GBPINR Futures	Futures Contract
LJPA Curncy	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#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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