



# UPDATE FEBRUARY 2018

LIQUIDITY • LOWER COSTS • TIGHT SPREADS • LARGE PARTICIPANT BASE

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# About BSE



## Evolution of the Exchange



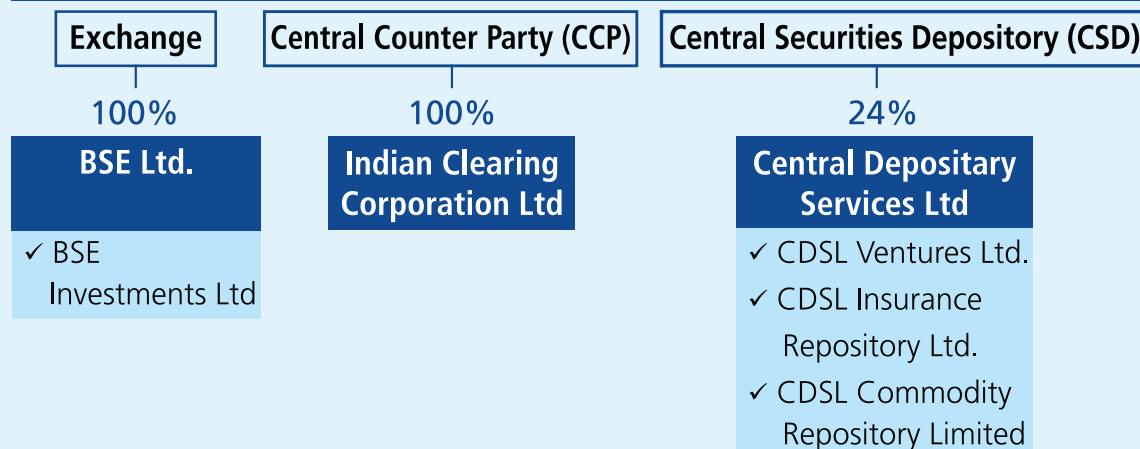
## Key Milestones

Date	Milestones
19th Jan 2018	BSE StAR Mutual Fund introduce e-mandate facility
11th Dec 2017	BSE's 100% subsidiary Marketplace Tech Infra Services hosted trading platform BEST enables trading segments of NSE
15th Nov 2017	BSE's 100% subsidiary, Marketplace Tech Infra Services, goes live with hosted trading platform BEST(BSE Electronic Smart Trader) powered by Thomson Reuters
26th 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
3rd Feb 2017	BSE becomes India's 1st listed Stock Exchange
16th Jan 2017	Commencement of Trading at India INX
9th Jan, 2017	Hon'ble Prime Minister of India, Shri Narendra Modi inaugurated India International Exchange (IFSC) Ltd, India's 1st International xchange
9th July, 2016	Shri Arun Jaitley, Hon'ble Minister of Finance Unveiled the Commemorative Postage Stamp Celebrating 140 glorious years of BSE
2nd Jan, 1986	S&P BSE SENSEX, country's first equity Index launched (Base Year: 1978-79 =100)
31st Aug, 1957	BSE granted permanent recognition under Securities Contracts (Regulation) Act (SCRA)
9th July 1875	The Native Share & Stock Broker's Association formed

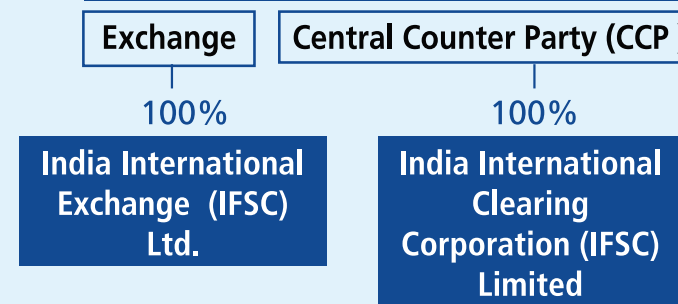
# BSE Group

## BSE\*

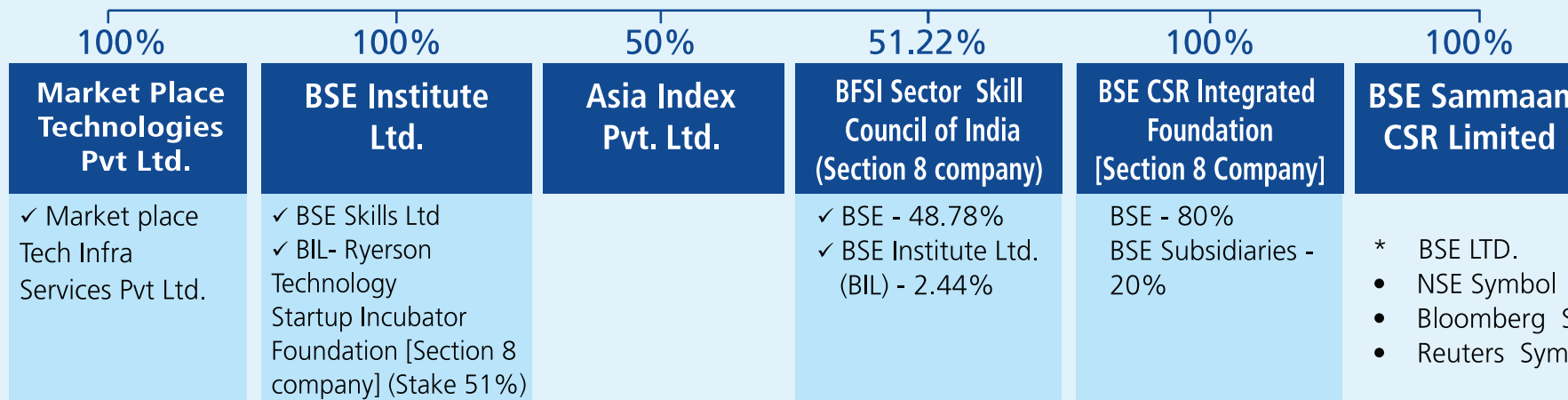
### Domestic



### IFSC-GIFT CITY



### SERVICES




## BSE Shareholding Pattern

## BSE & Its Partners

As on 31<sup>st</sup> December 2017

Category	%
Trading Members and Associates of trading members	37.13%
Promoter & Promoter Group	0
Public	62.87%
Non Promoter- Non Public	0
Shares underlying DRs	0
Shares held by Employee Trusts	0
<b>TOTAL</b>	<b>100%</b>



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



- Sensex Licensing to Korea Exchange





- Listing of Sensex



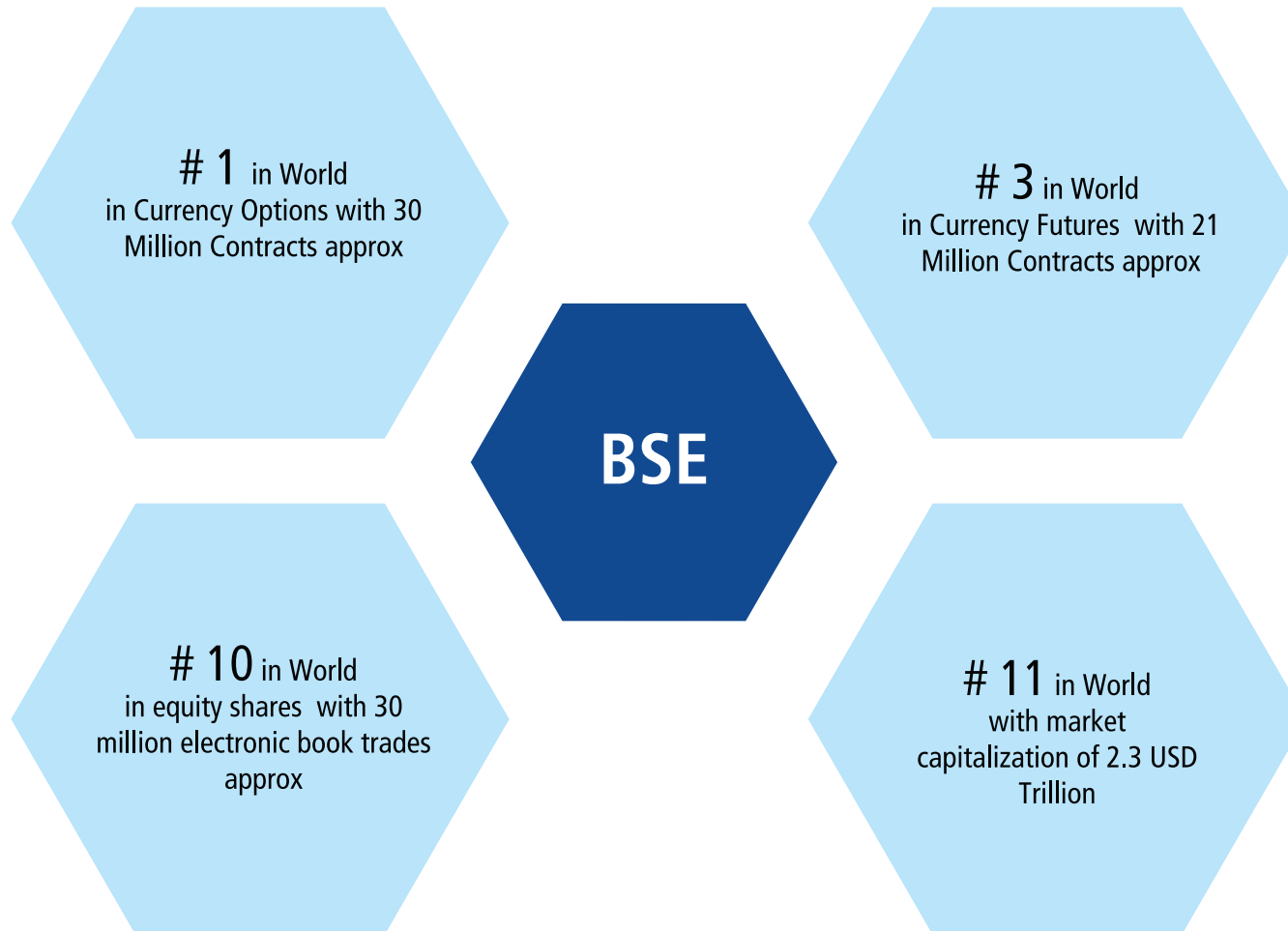
- Calculation & maintenance of all BSE Indices
- Index Product sales abroad
- Partnership on Index products

- 4.75% investment in BSE by State Bank of India as key user and supporter of platform
- 4.98% Investment in BSE by Smallcap World Fund, Inc.



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

# Global Ranking



Source: World Federation of Exchanges

Data as of December 2017



## 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	DESCRIPTION
	<p><b>Shri S. Ravi</b> Chairman &amp; Public Interest Director</p>	<ul style="list-style-type: none"> <li>■ <b>Shri S. Ravi</b> is the Managing Partner of Ravi Rajan &amp; Co., Chartered Accountants. He is an Independent Director on the boards of Star Union Dai-ichi Life Insurance Company Ltd. SMERA Ratings Limited, IDBI Bank Limited, Tourism Finance Corporation of India, BOI Merchant Bankers Limited and Aditya Birla Health Insurance Company Limited, to name a few.</li> <li>■ He is member of the working group, constituted by Ministry of Heavy Industries &amp; Public Enterprises, for suggesting possible modalities for creation of an institutional structure to be located in Department of Public Enterprises (DPE) on Corporate Social Responsibilities matters, member of the Takeover Panel of SEBI and, also, Mutual Funds Advisory Committee of SEBI and member of the Task Force of MOU (under DPE, Government of India) for the year 2015-16.</li> <li>■ He is a special invitee to ICAI's Committee on Banking, Insurance &amp; Pension for the year 2015-16 and a co-opted member to ICAI's Committee on Information Technology for the year 2015-16. He was a jury member for ICAI's Award for Excellence in Financial Reporting for the year 2012-13.</li> <li>■ A number of articles written by Shri S. Ravi have been published by various business dailies. He is regularly invited by professional institutes, educational institutions and regulatory bodies to deliver lectures, host panel discussions, etc.</li> </ul>
	<p><b>Shri Ashishkumar Chauhan</b> Managing Director &amp; CEO</p>	<ul style="list-style-type: none"> <li>■ <b>Shri Ashishkumar Chauhan</b> is the MD &amp; CEO of BSE (Bombay Stock Exchange), the first stock exchange of Asia. He is one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. He is best known as the father of modern financial derivatives in India due to his work at NSE. He was instrumental in setting up India's first fully automated screen based trading system and first commercial satellite communications network. He also created several path breaking frameworks including Nifty index, NSE certifications in financial markets, etc.</li> <li>■ From 2000 to 2009, he worked as the President and Chief Information Officer of Reliance group and was also the CEO of the cricket team Mumbai Indians in its formative years. He also handled additional responsibilities as the Head, Corporate Communications for Reliance Group from 2005 – 2006.</li> <li>■ He joined BSE as Deputy CEO in 2009 and was appointed as CEO in 2012. He is credited with reviving BSE including making it the fastest Exchange in the World with less than 6 microseconds response time, introduction of Mobile Trading first time in India, state of the art online real time surveillance system, introduction of several market leading products like SME, Currencies, Mutual Funds, Corporate Bonds distribution, Offer for Sale, Offer to buy, etc. He was also instrumental in setting up India's First International Exchange "India International Exchange", which was inaugurated by the Hon'ble Prime Minister of India Shri Narendra Modi in January 2017 at Gandhinagar, Gift City. He has successfully completed the IPO of BSE which was pending for over 10 years. BSE IPO was oversubscribed 51 times with close to 12 lakh applications in January 2017.</li> <li>■ Shri AshishKumar Chauhan has won several International and Indian awards including: Distinguished Fellow, Institute of Directors 2017, New Delhi Distinguished Alumnus Award 2016 - IIM Calcutta CEO of the Year, Diamond Sabre Awards 2015, Hong Kong Indian Business Leader of the Year, Horasis Interlaken/Switzerland 2015 RH Patil Award for Excellence in Financial Services, June 2015 Distinguished Alumnus Award, Indian Institute of Technology, Bombay, 2014 Best CEO in the Financial Markets in the Asia Pacific by the Asian Banker, 2014 Zee Business Awards- Special contribution in Commodities and Capital Market, 2013 TOP 50 CIOs, Information Week, US, 2009</li> </ul>



## Board of Directors

	NAME / TITLE	DESCRIPTION
		<ul style="list-style-type: none"> <li>■ He holds a B Tech in Mechanical Engineering from IIT Bombay and a PGDM from IIM Kolkata. He is a Distinguished Visiting professor at Ryerson University, Toronto, Canada.</li> <li>■ Due to his work in various fields spanning a quarter of a century, he is considered one of the foremost experts in the fields of Information Technology, Finance, Markets, Micro structure of markets, cricket, telecommunications, organized retail, Oil &amp; Gas refining and Indian social issues.</li> <li>■ He is the Chairperson on the Board of Governors (BoGs) of the National Institute of Technology (NIT) Manipur, member of the Board of Governors at IIM Raipur and an Independent Director of the ICSI Insolvency Professionals Agency, a 100% subsidiary company of The Institute of Company Secretaries of India. He is the Chairman of South Asian Federation of Exchanges (SAFE), a forum of 28 member entities from the SAARC region and neighbouring countries which aims to provide platform to share, exchange and promote the technologies, experiences for the rapid growth and development of capital markets and regional as well as global integration. He is a member of the Advisory Committee of Ministry of Micro Small and Medium Enterprises (MSME). He is an Advisor to the Technical Evaluation Committee set up by the Department of Posts for Postal Bank and also a part of several other committees of World Federation of Exchanges ("WFE"), Government of India ("GOI"), Reserve Bank of India ("RBI"), Securities and Exchange Board of India ("SEBI"), Central Board of Direct Taxes (CBDT), 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 a Member of the Advisory Committee of the proposed Mumbai University School of Economics and Public Policy. 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.</li> </ul>
	<p><b>Shri Sumit Bose</b> IAS (Retd.) Former Union Finance Secretary Public Interest Director</p>	<ul style="list-style-type: none"> <li>■ <b>Shri Sumit Bose</b> is Director on the Board of Coromandal International Limited, Tata AIG General Insurance Company Ltd. and Foundation to educate girls globally, UTI Asset Management Company Ltd, 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, an independent legal think tank, a Member, Board of Governors of The Doon School, Dehradun, a Member, Governing Body, Parivaar Education Society, Kolkata Director, Jal Seva Charitable Foundation.</li> </ul>
	<p><b>Justice Vikramajit Sen</b> Former Supreme Court Judge and Chief Justice, High Court of Karnataka Public Interest Director</p>	<ul style="list-style-type: none"> <li>■ <b>Justice Vikramajit Sen</b> 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.</li> <li>■ 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.</li> <li>■ He is a Director on the Board of DCM Shriram Limited</li> </ul>


## Board of Directors

	NAME / TITLE	DESCRIPTION
	<p><b>Shri S. S. Mundra</b> Public Interest Director</p>	<ul style="list-style-type: none"> <li>■ <b>Shri S.S. Mundra</b>, 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).</li> <li>■ 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), IndiaFirst 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.</li> <li>■ 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 &amp; 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.</li> <li>■ 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.</li> </ul>
	<p><b>Smt. Usha Sangwan</b> MD, Life Insurance Corporation of India Shareholder Director</p>	<ul style="list-style-type: none"> <li>■ <b>Smt. Usha Sangwan</b>, is the first ever woman Managing Director of Life Insurance Corporation of India since its inception.</li> <li>■ She is 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.</li> </ul>
	<p><b>Dr. Sriprakash Kothari</b> Gordon Y Billard Professor of Accounting and Finance Massachusetts Institute of Technology, Sloan School of Management Shareholder Director</p>	<ul style="list-style-type: none"> <li>■ <b>Dr. Sriprakash Kothari</b> is Gordon Y Billard Professor of Accounting and Finance at the Sloan School of Management, Massachusetts Institute of Technology. With close to two decades at this premier institute, Dr. Kothari recently completed a six-year stint as Deputy Dean at the Sloan School of Management. He is also faculty director of the MIT-India Program <a href="http://web.mit.edu/misti/mit-india/">http://web.mit.edu/misti/mit-india/</a> and an editor of the world-renowned academic publication "Journal of Accounting &amp; Economics". Recently, in the year 2014 Dr. Kothari was a recipient of the American Accounting Association's (AAA) Notable Contributions to the Accounting Literature award. His other awards include honorary doctorates, Doctor Honoris Causa, from the University of Technology, Sydney in May 2013 and University of Cyprus in 2016 and a Distinguished Alumnus Award from Birla Institute of Technology and Science, Pilani, in 2013.</li> </ul>




## Board of Directors

	NAME / TITLE	DESCRIPTION
		<ul style="list-style-type: none"> <li>Dr. Sriprakash Kothari holds a bachelor of engineering degree from the Birla Institute of Technology and Science, Pilani, and has also earned his MBA (PGDM) from one of India's finest institutes, the Indian Institute of Management, Ahmedabad. Dr. Kothari completed his PhD from University of Iowa, United States. His highly-cited research focuses on the US and international financial reporting practices, the pricing of financial information, investment analysis and valuation.</li> </ul>
	<p><b>Shri Roland Schwinn</b> Head of Eurex Asia Deutsche Boerse Group Shareholder Director</p>	<ul style="list-style-type: none"> <li><b>Shri Roland Schwinn</b> is the Head of Eurex Asia, the derivatives market of the Deutsche Boerse Group for Asia, Pacific and the Middle East. He joined Eurex in 2007 as Head of Business Research until he took over the business development role for the Asia Pacific region in July 2007.</li> <li>He is also the founding director of Deutsche Boerse Asia Holding and Eurex Clearing Asia and since July 2015 he acts as the Chief Executive Officer of Eurex Clearing Asia in Singapore. From 1994 to 2006 he worked as an Independent Business Consultant for Eurex and the Deutsche Boerse Group in several international projects and in the areas of Marketing &amp; Sales and Institutional Investor Business Development, specializing in Hedge Funds.</li> <li>He started his career at the DTB - Deutsche Terminboerse - (the predecessor of Eurex) in 1990 as a Product Development Manager and worked in several positions at DTB, including Strategic Marketing Manager and Client Services Manager until 1994.</li> <li>Shri Roland Schwinn studied at the University of Applied Sciences, Trier Germany and the University of Leicester, UK. He is holding a master degree in Business Administration and a Postgraduate Diploma in European Business Studies. Since November 2016, Roland is also a Fellow of Singapore Institute of Management University (UniSIM). Prior to that he was a Research Fellow of Singapore Management University (SMU).</li> </ul>
	<p><b>Smt. Rajeshree Sabnavis</b> Fellow Member of ICAI, Company Secretary Shareholder Director</p>	<ul style="list-style-type: none"> <li><b>Smt. Rajeshree Sabnavis</b> 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.</li> </ul>



# Management Team

	NAME / TITLE	DESCRIPTION
	<p><b>Shri Ashishkumar Chauhan</b> Managing Director &amp; Chief Executive Officer</p>	<ul style="list-style-type: none"> <li>■ <b>Shri Ashishkumar Chauhan</b> is the MD &amp; CEO of BSE (Bombay Stock Exchange), the first stock exchange of Asia. He is one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. He is best known as the father of modern financial derivatives in India due to his work at NSE. He was instrumental in setting up India's first fully automated screen based trading system and first commercial satellite communications network. He also created several path breaking frameworks including Nifty index, NSE certifications in financial markets ,etc.</li> <li>■ From 2000 to 2009, he worked as the President and Chief Information Officer of Reliance group and was also the CEO of the cricket team Mumbai Indians in its formative years. He also handled additional responsibilities as the Head, Corporate Communications for Reliance Group from 2005 – 2006.</li> <li>■ He joined BSE as Deputy CEO in 2009 and was appointed as CEO in 2012. He is credited with reviving BSE including making it the fastest Exchange in the World with less than 6 microseconds response time, introduction of Mobile Trading first time in India, state of the art online real time surveillance system, introduction of several market leading products like SME, Currencies, Mutual Funds, Corporate Bonds distribution, Offer for Sale, Offer to buy etc. He was also instrumental in setting up India's First International Exchange "India International Exchange", which was inaugurated by the Hon'ble Prime Minister of India Shri Narendra Modi in January 2017 at Gandhinagar, Gift City. He has successfully completed the IPO of BSE which was pending for over 10 years. BSE IPO was oversubscribed 51 times with close to 12 lakh applications in January 2017.</li> <li>■ Shri AshishKumar Chauhan has won several International and Indian awards including: <ul style="list-style-type: none"> <li>Distinguished Fellow, Institute of Directors 2017, New Delhi</li> <li>Distinguished Alumnus Award 2016 - IIM Calcutta</li> <li>CEO of the Year, Diamond Sabre Awards 2015, Hong Kong</li> <li>Indian Business Leader of the Year, Horasis Interlaken/Switzerland 2015</li> <li>RH Patil Award for Excellence in Financial Services, June 2015</li> <li>Distinguished Alumnus Award, Indian Institute of Technology, Bombay, 2014</li> <li>Best CEO in the Financial Markets in the Asia Pacific by the Asian Banker, 2014</li> <li>Zee Business Awards- Special contribution in Commodities and Capital Market, 2013</li> <li>TOP 50 CIOs, Information Week, US, 2009</li> </ul> </li> <li>■ He holds a B Tech in Mechanical Engineering from IIT Bombay and a PGDM from IIM Kolkata. He is a Distinguished Visiting professor at Ryerson University, Toronto, Canada.</li> <li>■ Due to his work in various fields spanning a quarter of a century, he is considered one of the foremost experts in the fields of Information Technology, Finance, Markets, Micro structure of markets, cricket, telecommunications, organized retail, Oil &amp; Gas refining and Indian social issues.</li> <li>■ He is the Chairperson on the Board of Governors (BoGs) of the National Institute of Technology (NIT) Manipur, member of the Board of Governors at IIM Raipur and an Independent Director of the ICSI Insolvency Professionals Agency, a 100% subsidiary company of The Institute of Company Secretaries of India. He is the Chairman of South Asian Federation of Exchanges (SAFE), a forum of 28 member entities from the SAARC region and neighbouring countries which aims to provide platform to share, exchange and promote the technologies, experiences for the rapid growth and development of capital markets and regional as well as global integration. He is a member of the Advisory Committee of Ministry of Micro Small and Medium Enterprises (MSME). He is an Advisor to the Technical Evaluation Committee set up by the Department of Posts for Postal Bank and also a part of several other committees of World Federation of Exchanges ("WFE"), Government of India ("GOI"), Reserve Bank of India ("RBI"), Securities and Exchange Board of India ("SEBI"), Central Board of Direct Taxes (CBDT), 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 a Member of the Advisory Committee of the proposed Mumbai University School of Economics and Public Policy. 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.</li> </ul>

# Management Team

	NAME / TITLE	DESCRIPTION
	<p><b>Shri V Balasubramaniam</b> Managing Director &amp; Chief Executive Officer .(INX)</p>	<ul style="list-style-type: none"> <li>■ <b>Shri V Bala</b> 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) Central Depository Services (India) Limited – Depository 2) BSE Institute Limited – Education business, 3) BSE Sammaan – CSR Exchange and 4) India International Clearing Corporation IFSC Limited.</li> <li>■ 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.</li> <li>■ 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.</li> <li>■ 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.</li> <li>■ 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.</li> </ul>
	<p><b>Shri Nehal Vora</b> Chief Regulatory Officer</p>	<ul style="list-style-type: none"> <li>■ <b>Shri Nehal Vora</b> 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</li> <li>■ 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 &amp; Compliance at DSP Merrill Lynch Ltd heading Broking and Investment Banking Compliance</li> <li>■ 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</li> </ul>
	<p><b>Shri Nayan Mehta</b> Chief Financial Officer</p>	<ul style="list-style-type: none"> <li>■ <b>Shri Nayan Mehta</b> 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.</li> <li>■ He has previously worked at Credit Analysis &amp; Research Ltd. as Joint General Manager (Accounts), CFO at Multi Commodity Exchange of India Limited and has also worked at the National Stock Exchange.</li> <li>■ 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.</li> </ul>

## Management Team (Contd...)

	NAME / TITLE	DESCRIPTION
	<b>Shri Kersi Tavadia</b> Chief Information Officer	<ul style="list-style-type: none"> <li>■ <b>Shri Kersi Tavadia</b> 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</li> <li>■ He is instrumental in promoting, adaption of Open Source technologies and has successfully deployed one of the largest Data Warehouse on Open source platform.</li> <li>■ He has provided technical leadership &amp; architectural vision in implementation of Mission Critical Applications across the organization including IT Infrastructure, Web portals, web based and non-web based customized solutions.</li> <li>■ He is amongst the Pioneers to implement single-window Multi-Exchange online trading systems to facilitate trading across multiple asset classes.</li> </ul>
	<b>Shri Neeraj Kulshrestha</b> Chief of Business Operations	<ul style="list-style-type: none"> <li>■ <b>Shri Neeraj Kulshrestha</b> 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</li> <li>■ He has about 27 year experience in Capital markets, which includes Securities Markets and General Insurance.</li> <li>■ 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..</li> <li>■ He has completed his Bachelors in Computer Science from Delhi University and a MBA (Finance) from Indore University.</li> </ul>

# 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"> <li>▪ IPO</li> <li>➢ EQUITY</li> <li>➢ SME</li> <li>➢ BOND</li> <li>▪ FPO</li> <li>▪ BSE Hi-Tech</li> <li>▪ Sovereign Gold Bonds</li> <li>▪ Mutual Fund-NFO</li> </ul>	<ul style="list-style-type: none"> <li>▪ Equity Cash</li> <li>➢ Small &amp; Medium Enterprises</li> <li>➢ Offer to Buy</li> <li>➢ Offer for Sale</li> <li>➢ Close Ended Mutual Funds</li> <li>➢ Corporate Bonds</li> <li>➢ Government Securities and Sovereign Gold Bonds</li> <li>▪ Equity Derivatives</li> <li>▪ Currency Derivatives</li> <li>▪ Interest Rate Futures</li> <li>▪ Securities lending &amp; borrowing (through ICCL)</li> <li>▪ ETF</li> </ul>	<ul style="list-style-type: none"> <li>▪ Order placement platform</li> </ul>	<ul style="list-style-type: none"> <li>▪ OTC Corporate Bond Reporting CP/CD</li> <li>▪ Trade Repository</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trading Members</li> <li>▪ Clearing Members</li> <li>▪ Self-clearing Members</li> </ul>	<ul style="list-style-type: none"> <li>▪ Clearing and Settlement Services through ICCL</li> <li>▪ Depository Services through CDSL</li> </ul>	<ul style="list-style-type: none"> <li>▪ Market Data</li> <li>▪ Corporate Data</li> <li>▪ Corporate Action through SWIFT</li> <li>▪ End of Day Products</li> <li>▪ Historical Data</li> <li>▪ Macro economic Indices</li> </ul>

## Supporting Business

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





# Listing Business

**BSE**  
EXPERIENCE THE NEW

## Total Fund Mobilization through Public Offer (Equity and Debt)

- Total Rs. 136,838 crs ( \$ 21.50 billion\* ) have been raised in Indian Markets through Stock Exchanges in India since April 2016
- Rs. 77,139 crs ( \$ 12.12 billion\* ) have been raised at BSE since April 2016
- BSE is the market leader with 56% of total funds raised
- BSE has the largest number of listed companies in world

5040  
Companies listed  
with Equities

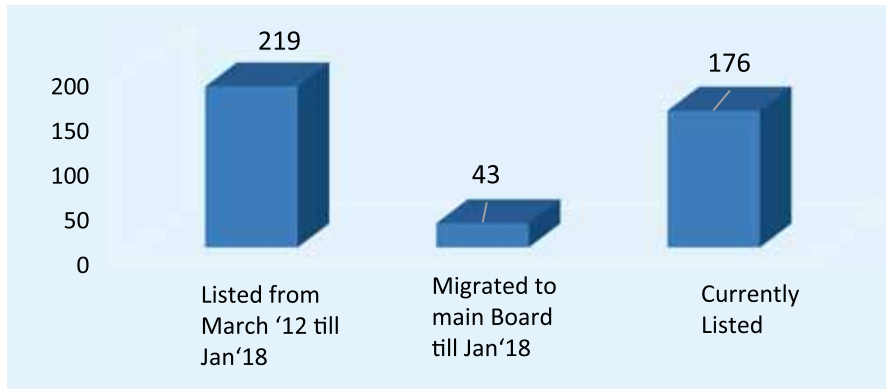
### Leadership in Debt Market

- BSE is the preferred choice for listing Privately Placed Debt Instruments (PPDI). In FY16-17, BSE has listed 2353 Instruments with an amount totalling to Rs.420,660 crore vis-a-vis 1200 instruments on other Exchange.
- In F.Y. 2017-18 (till January), Exchange has listed 1544 instruments with an amount totalling Rs. 3,46,751 crores vis a vis 800 instruments on the other Exchange.
- In F.Y 2016-17, 15 Debt Public issues have tapped the market . BSE is the Designated Stock Exchange for the 13 public issues with 7 issues listed only on BSE.
- In F.Y 2017-18 (till January), 6 Debt Public issues have tapped the market, BSE is the Designated Stock Exchange for all public issues out of which 5 issues were listed only on BSE.

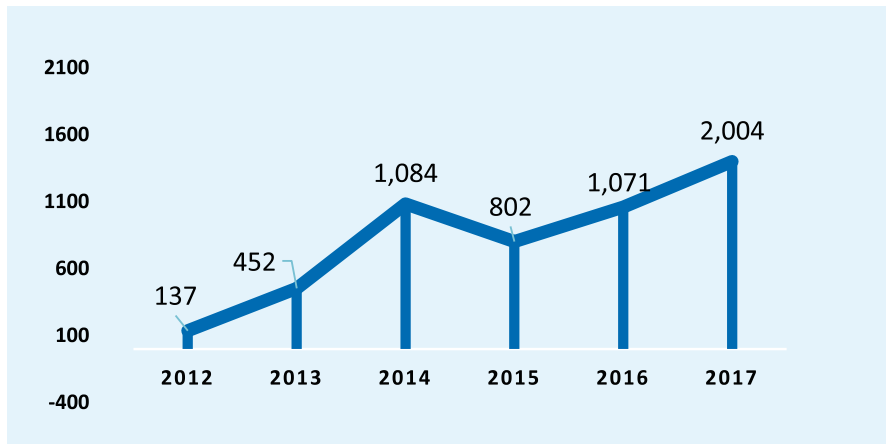
\* Figures does not include Amount Raised in SME segment at BSE and NSE

# 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 January, 2018 its value was 2,004.
- 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 176 companies –Rs.11,612 Crs
- Total Market Capitalization of 43 companies Migrated to main Board – Rs.11,325 Crs.

**66% of Market Share in terms of number of SMEs listed**



Data as of January 2018

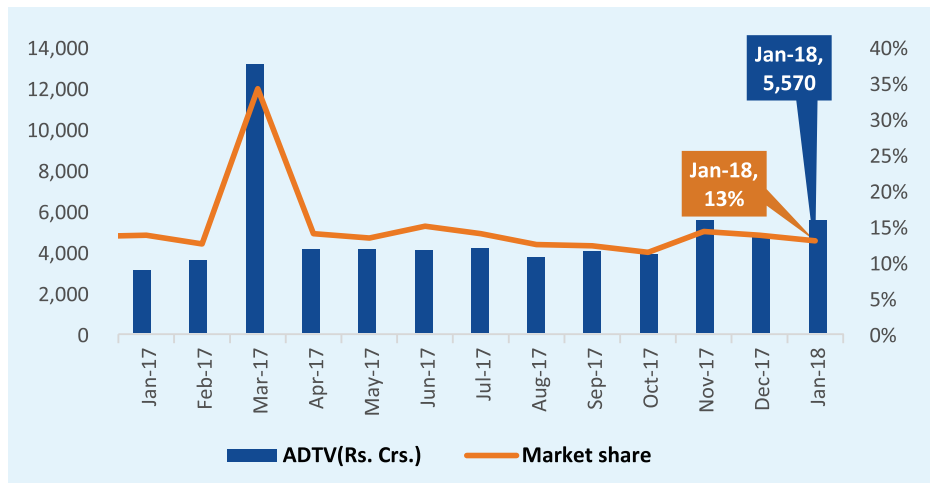


**Market  
Business**

**3SE**  
*EXPERIENCE THE NEW*

# Equity Cash Market

## Turnover & Market Share%



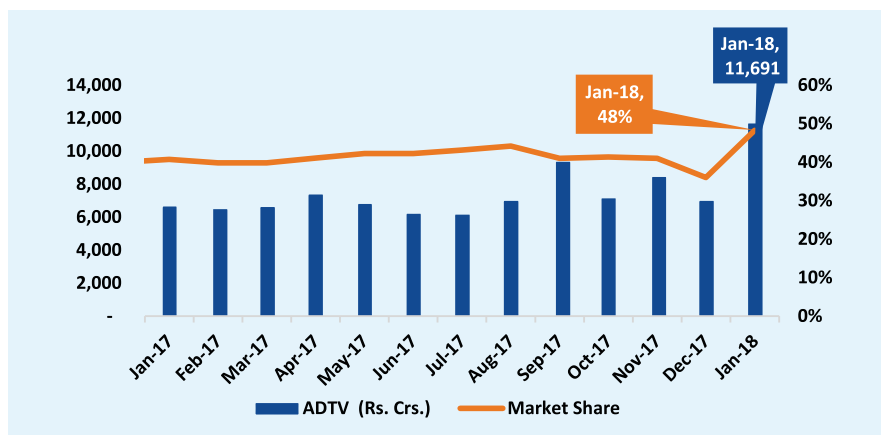
## Revision in transaction charges of equity segment w.e.f August 1, 2017

Slab-wise Rates	
Monthly Trades Count	Rate (in Rs.) per Trade
0 – 1,00,000	1.5
1,00,001 – 3,00,000	1.25
3,00,001 – 5,00,000	1
5,00,001 – 20,00,000	0.75
> 20,00,000	0.5

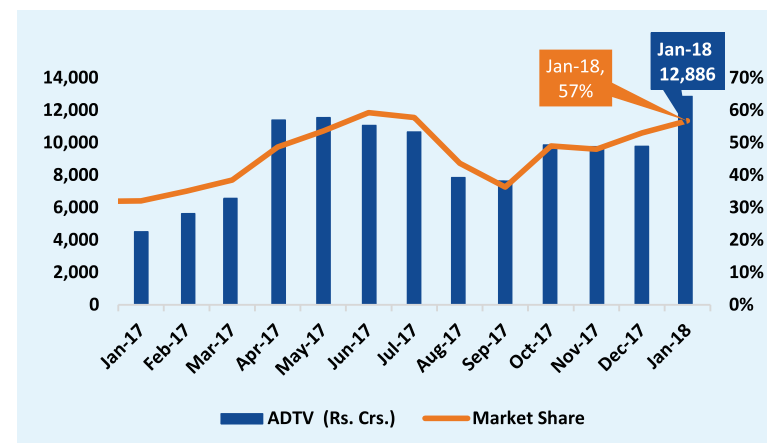
\*An active order resulting in multiple execution shall be charged only once.

# Currency Derivatives

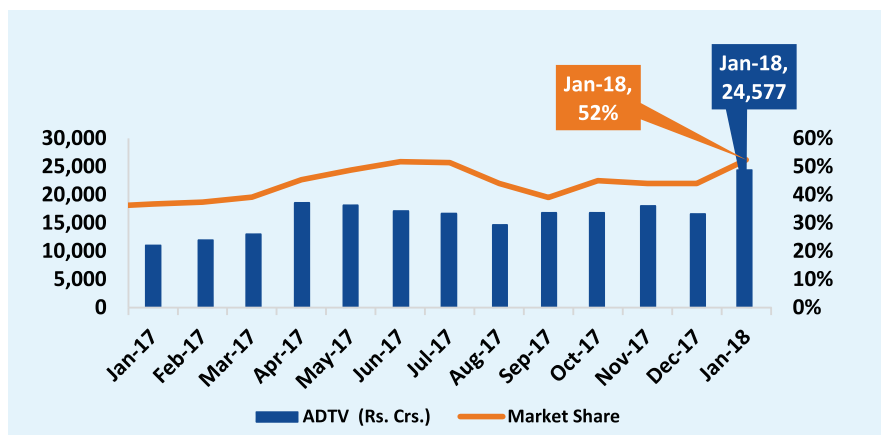
## Currency Futures



## Currency Options



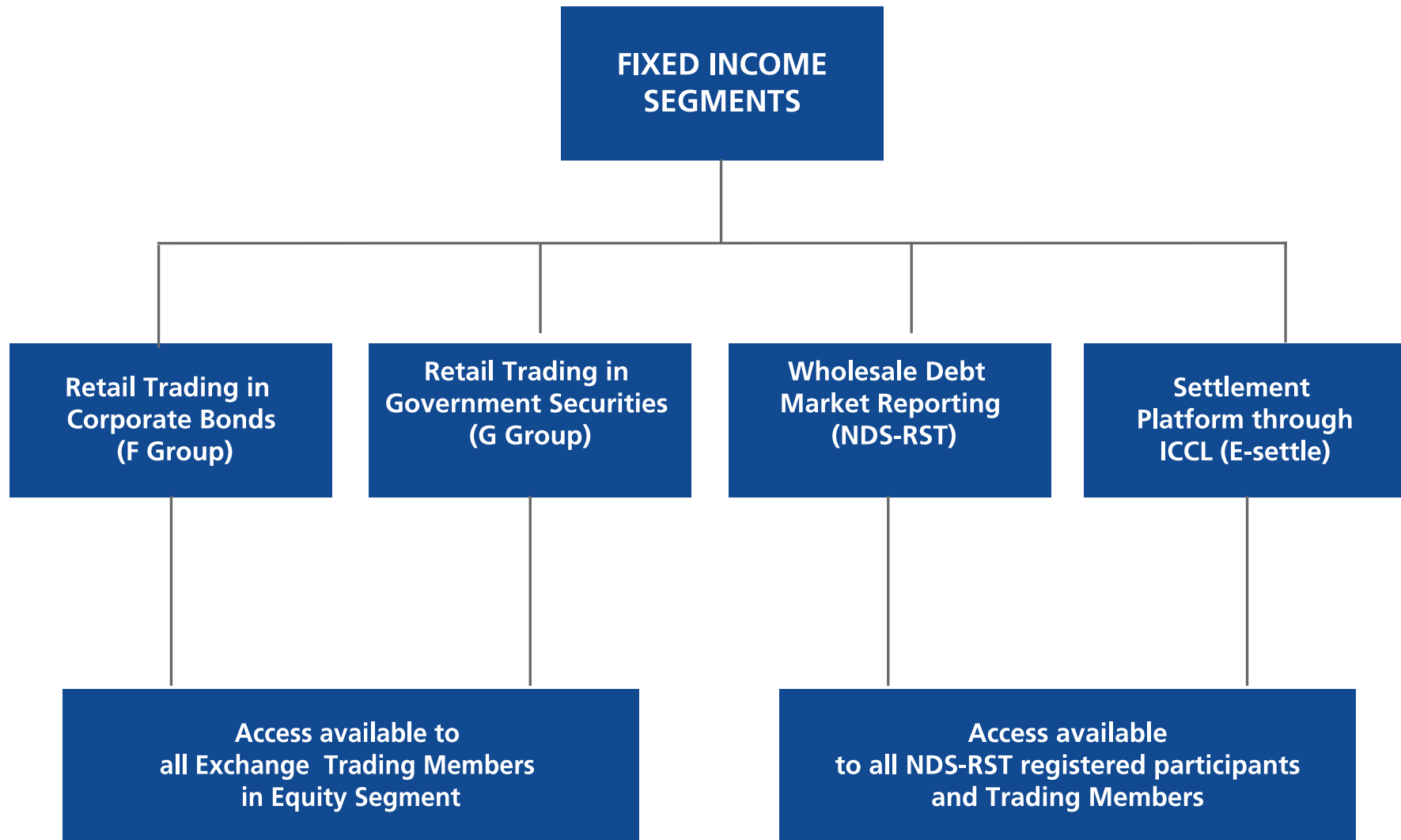
## Combined Turnover & Market Share



### 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
1	Turnover => Rs.5,000 Crores & < Rs.10,000 Crores	Discount of 25% on Rs.22 (i.e. Rs.16.50)
1	Turnover => Rs.10,000 Crores & < Rs.20,000 Crores	Discount of 50% on Rs.22 (i.e. Rs.11)
1	Turnover => Rs.20,000 Crore	No Transaction charges

## Fixed Income Segments Overview

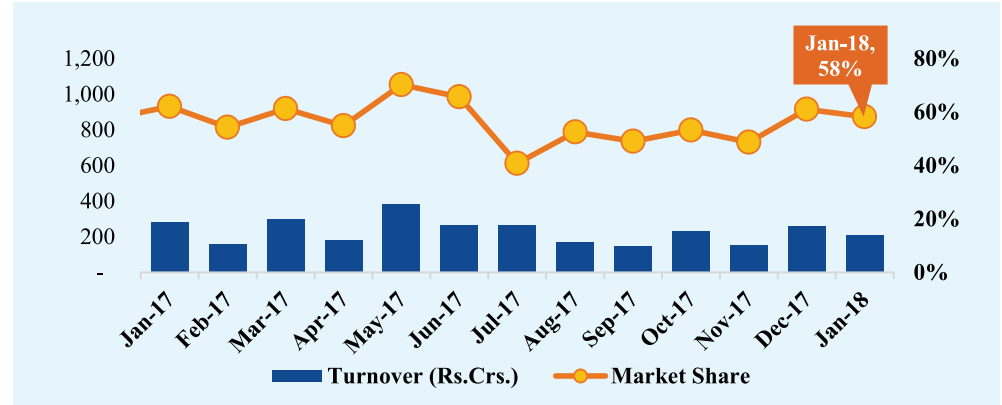


# Fixed Income Segments

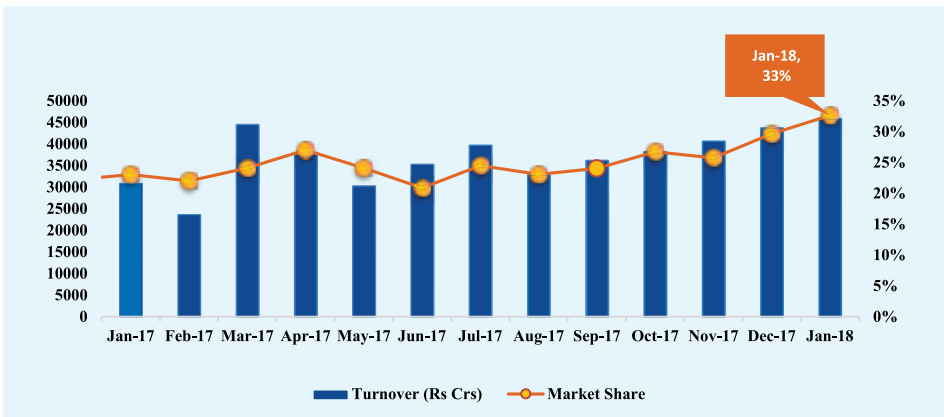
## G-Sec Reporting



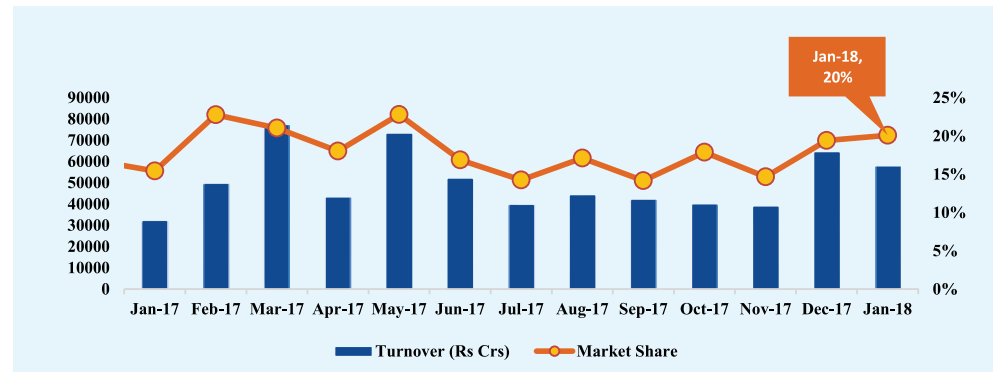
## Retail Trading in Corporate Bonds



## Corporate Bond Reporting



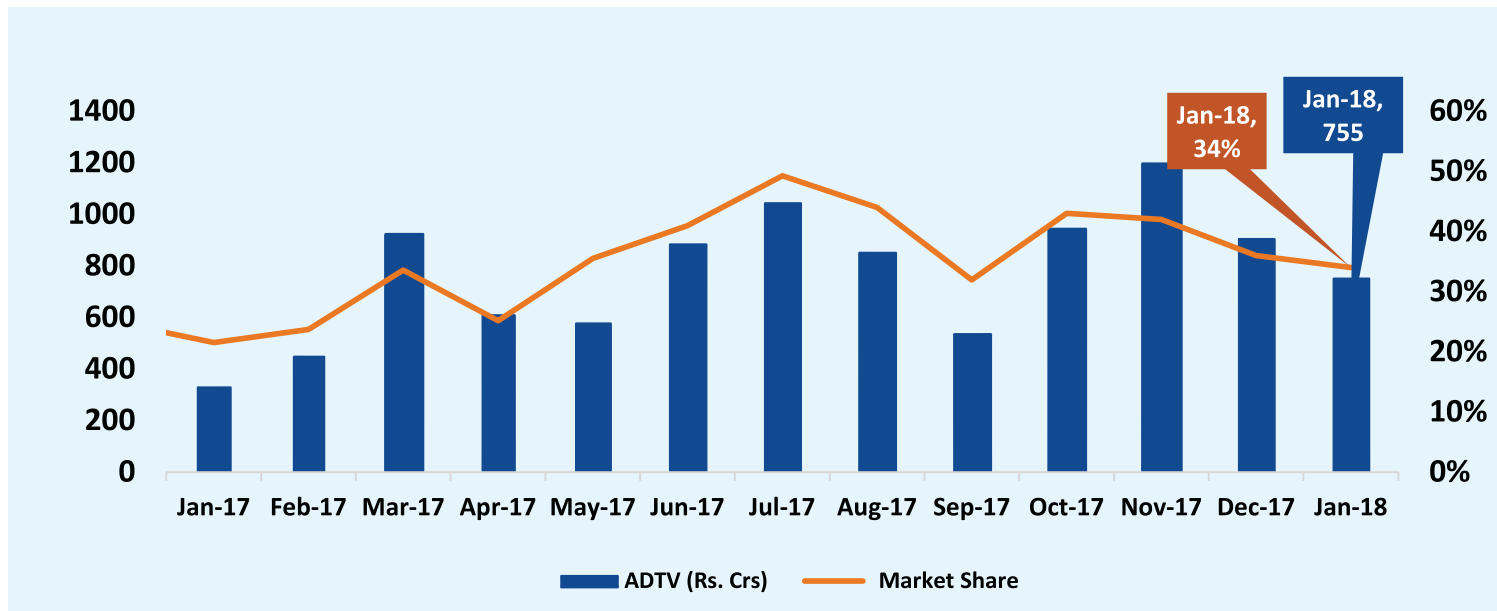
## ICCL Settlement





# Interest Rate Derivatives

## Turnover & Market Share %



**34%  
Market Share% for the Month of January '18**

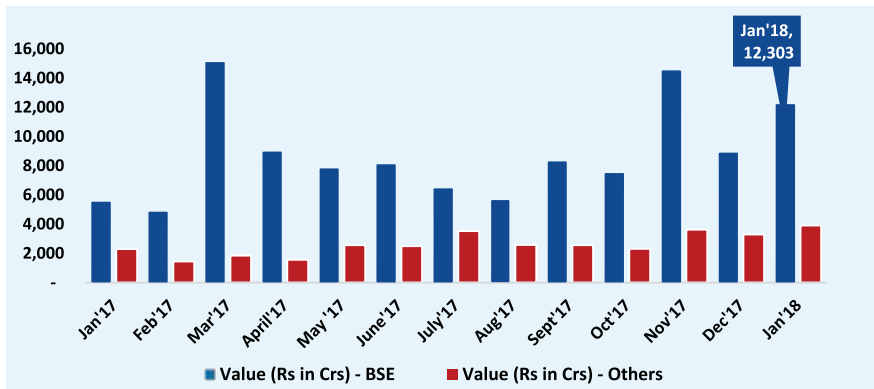
Transaction Charges Rs.10 per Crore

# 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: E-Mandate , ISIP

## CONNECTIVITY & USPs

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

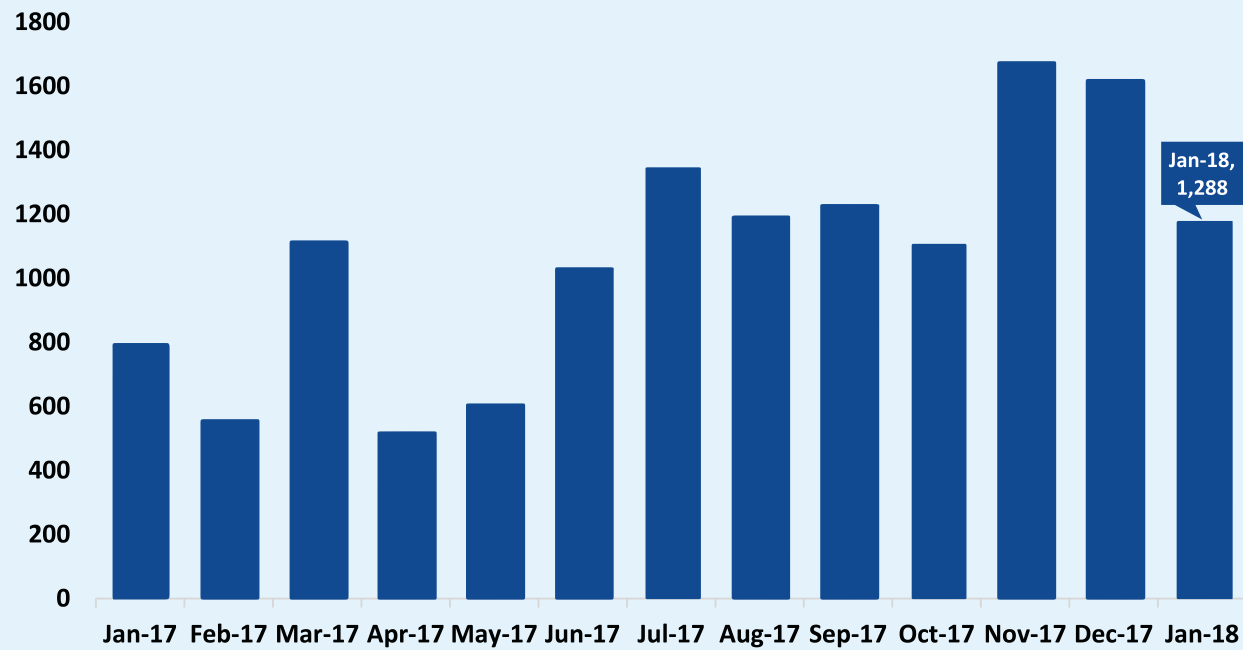
## PLATFORM STATISTICS

- Over 126 lakh orders received on StAR MF Platform till January 2018
- Over 64 Lakh orders transitioned aggregating to Rs 74,301 Crs on BSE StAR MF Platform during FY 16-17
- Market share of 76%.
- Processing over 19.14 lac orders for the month of January 2018.

Data as of January 2018

# Exchange Traded Funds

Turnover (Rs Crs.)

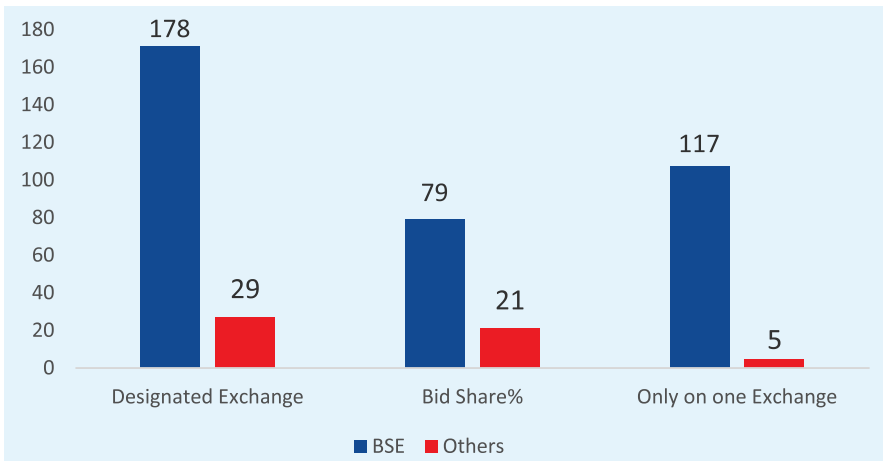


- Exchange traded fund is a security that tracks an index, a commodity or a sector like an index fund or a sectoral fund but trades like a stock on an exchange
- It is similar to a close ended mutual fund listed on stock exchanges
- BSE in its effort to bring greater participation for retail investors in the Indian landscape has tied up with market makers for ETF's
- 41 ETF listings on BSE as on December 2017\*

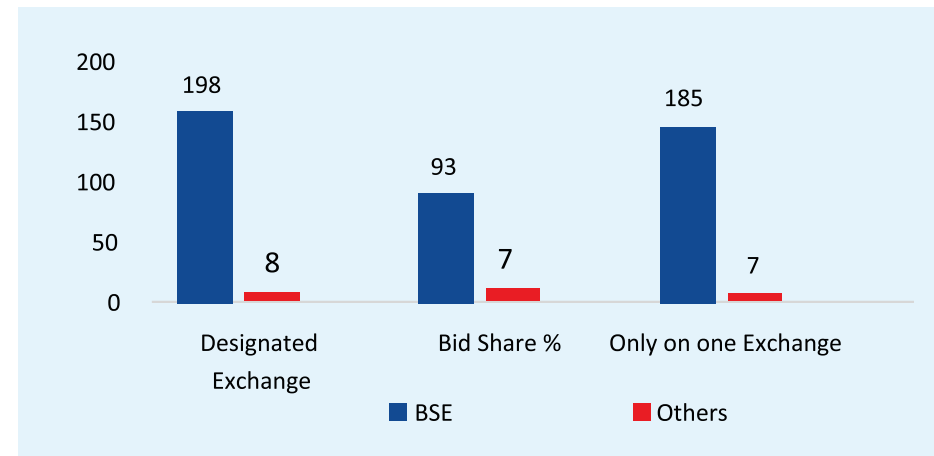
\*Source: World Federation of Exchanges

# Capital Raising Platforms - OFS/OTB/ BOND

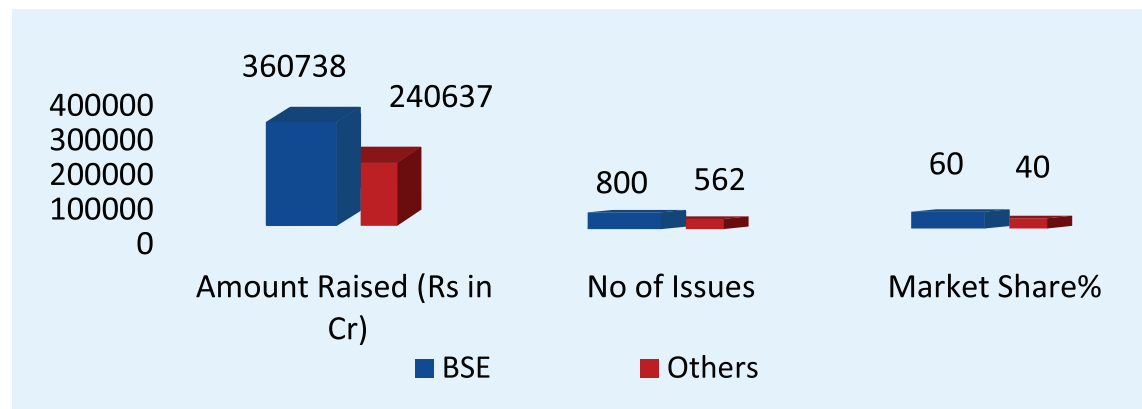
**BSE's Leadership in OFS\***



**BSE's Leadership in OTB\*\***



**BSE's Leadership in BSE BOND\*\*\***



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



**Data  
Business**



## 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

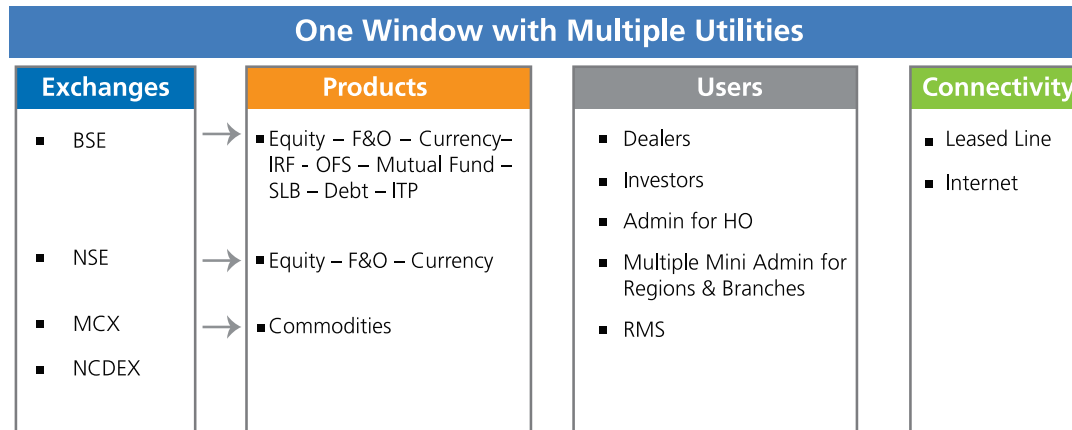
- Quotation files
- Annual report
- Daily Bulletin
- Sector Classification
- Trade and Order book data



**Technology  
Initiatives**

**BSE**  
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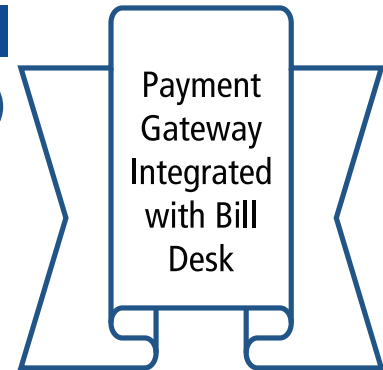
# Bolt plus -Member Trading interface



## 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.
- Supports Timer Based and Single Click square Off.
- Top Gainers / Top Losers - Most Active by VOLUME / VALUE.
- Corporate Action Information.
- Customized short cut keys - predefined Key Mapping Styles of ODIN-NOW
- 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.



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, SLB, OFS, IPO, OTB, MF)
- NSE (Equity, Equity Derivatives, Currency Derivatives, SLB, IPO, OFS)
- 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

##### User 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 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

- 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  $\mu$ s (Gateway in to Gateway out)
- Network latency for Colo users – 10  $\mu$ 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.
- Symphony Fintech Solutions 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 $\mu$ sec): Exchange Response Time	6	500 #
Roundtrip Latency (in $\mu$ sec): Colo Network*	10	500 #
Roundtrip Latency (in $\mu$ 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	<b>Annual Cost per connection</b> Rs.10 Lakhs for 400 messages/sec
Market data connectivity cost	Free (including EOBI feed)	<b>TBT feed Annual Cost per feed</b> Full Rack : Rs.1.00 Lakh / Half Rack: Rs.1.00 Lakh

\*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

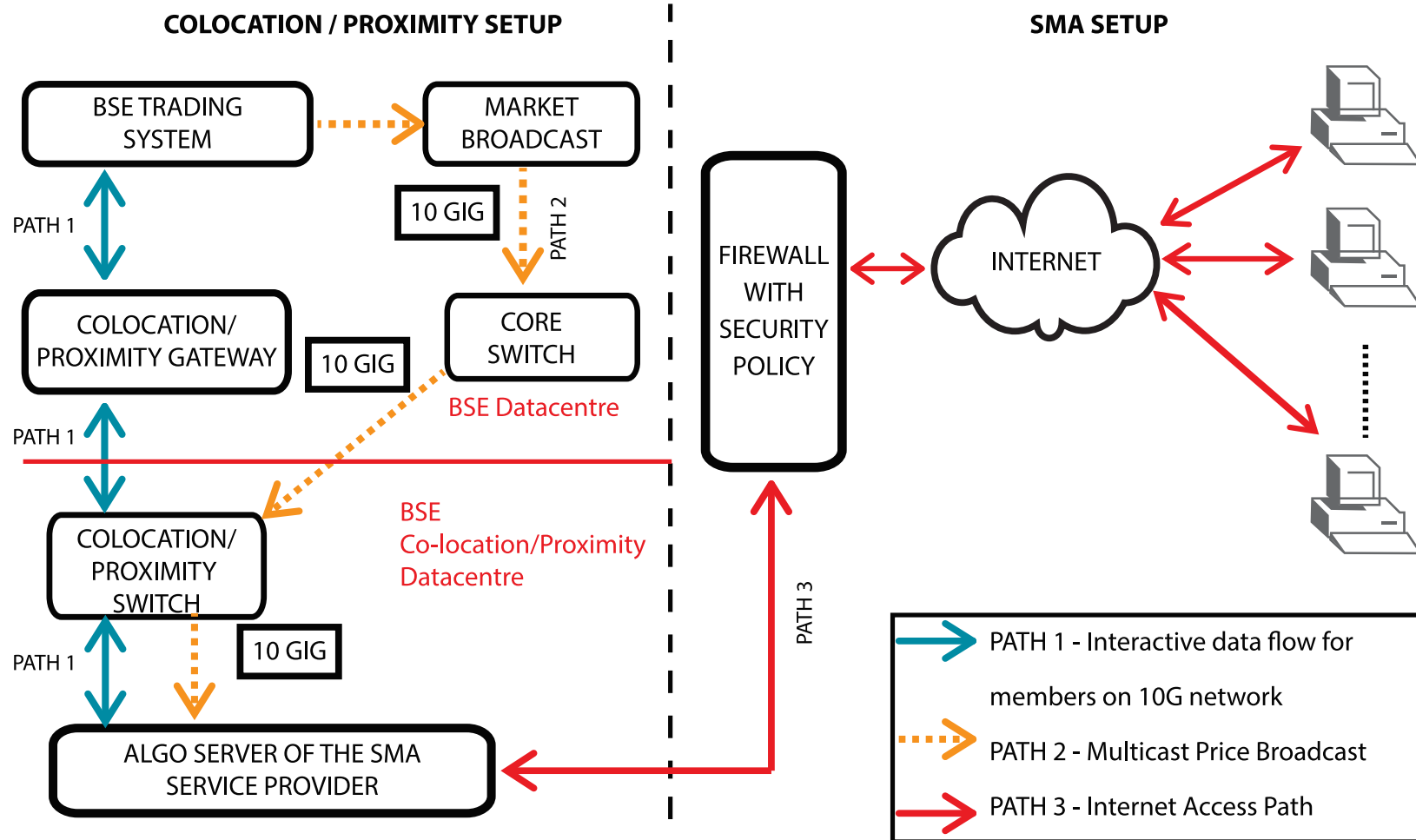
#### For Members

- 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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