Stock Exchanges[i]

1. Changes in Technology have brought about changes in the functioning of Stock Exchanges around the world. The Financial Market was the first to go global on basis of the Internet. The Pension and other Funds in developed countries began the international Financial Institutional Investments (FII) trend in Asian Exchanges in early 1990s.

Development of Trading Technology:

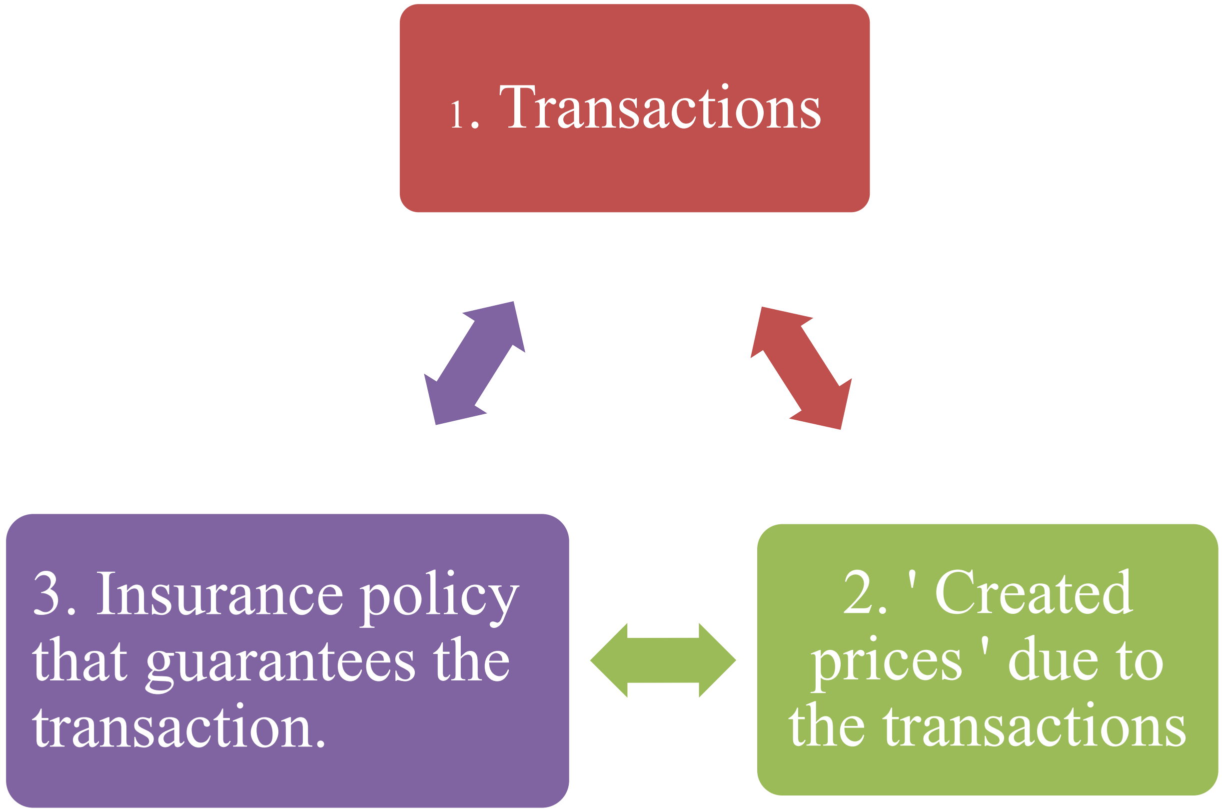
2. What is Trading Industry? What does it supply?

   2.1 When an investor in stocks wants to buy or sell, the brokerage function delivers an order with the specified terms to an exchange or other trading venue.

   2.2 At the Exchange the buy and sell order is executed as per rules of procedure.

   2.3 Finally, clearing function ensures that both sides meet their commitments.

3. The three outputs are created due to the above process: namely transactions, created prices, and insurance.



4. The customer pays for the service output in the following ways :
   a) The brokerage commission covering order delivery
   b) The clearance fee paid directly through the broker.
   c) Plus the difference between the prices at which the dealers are prepared to sell or buy. This difference is called 'immediacy' via the 'bid-ask-price'.
   d) If a buy or sale is needed urgently, an extra offer price is paid and the seller receives less than a normal sale.

PURE DEALER MARKETS:

5. The traditional and currently 'Off' Exchange markets are the pure dealer markets. In it, the 'Dealers' and 'Market makers' are the counterparties to

every trade. Dealers quote the bid and offer prices at which they are willing to buy or sell. Buyers use a broker to locate the dealer with the lowest offer and customers who wish to sell located the dealers with the highest offer. This system is still followed in 'Off Exchange' Derivative deals in India. Nasdaq and London Stock Exchange are pure dealer markets. Nouveau March in Paris is for new and smaller publicly traded companies.

6. Electronic Open Limit Order Book: This has no designated market maker. Quotes come from limit orders submitted to limit order book for buy or sell, number of shares and a price. The highest limit order becomes the market bid and the lowest limit order forms the market offer. For example, Tokyo Toronto, Paris, Frankfurt, Stockholm, and Instinet and Island in the USA.

6.1 Advantage is efficiently concentrating competition between 'liquidity suppliers' who quote. Disadvantage is that it is prone to noncompetitive behaviour leading to antitrust investigations. The New York Stock Exchange: is a hybrid of the two systems. Floor traders sometimes act as brokers and sometimes as dealers, buying and selling for their own account. NYSE has an active limit order book, largely because it has become so easy to submit orders electronically.

7. COSTS: have fallen around the world.
   a) Quoted bid-ask spreads: as a percentage of price, have fallen continuously from 1990 to 1998. In 1998 the spread was 0.175 % of the share price while in 1980 it was one-third of the share price.
   b) Commission: one-way commissions were about 0.55% in 1980, and plunged to 0.10% in 1998. Similarly, the commission for institutions and the retail commission.
   c) Due to decline in trading costs, there has been an increase in competition between brokerages and in the volumes trades.

7.1 TICK SIZE: Prior to 1997 the minimum tick size in the USA was one-eighth of a dollar or $0.125. Thereafter, sixteenths and halving were adopted as minimum tick. In 2000 the $1/8^{th}$ and $1/16^{th}$ were replaced by decimal prices.

7.2 From the trading point of view, Decimals themselves do not matter as the key variable continues to be the minimum tick. Toronto and USA have set a penny or $0.01 as their minimum tick. As such due to online trading the tick has become more than 12 times smaller than it was in the traditional stock exchange. Smaller ticks have the benefit of shrinking bid-ask spread. Pennies have lowered the NYSE spread by 20 to 30%. This has been to the advantage of the small investors.

7.3 However, Institutional investors have found their trade costs increase as they rose from 0.68% under $1/8^{th}$ to 0.85% under $1/16^{th}$. This is because liquidity is supplied more slowly with smaller ticks. Narrow ticks give floor participants an advantage over electronic limit orders. This is called 'penny jumping' by economists.

8. MARKET FORMATION: refers to splintering of order flow that occurs when several exchanges are available to execute a trade. This is especially pronounced in NYSE. For each target audience, a dizzy array of alternatives is available.
9. Information and search costs are lower if a single exchange is having network to gather all buyers and sellers in one virtual place. Example Posit, a crossing network run by ITG. Seven times a day Institutional orders are aggregated and traded at a prevailing mid-point price. This concentrates liquidity by executing trades at discrete points in time rather than continuously.
10. Gold trades in London are carried in this manner. In this system the Institution's advantage is that they do not have to pay the bid-ask price and the transaction is anonymous. London is for Institutional trade and Paris is for retailers. The market is deep and negotiations provide price improvements.

11. Different traders may have different needs. A small investor may value the small spread of limit order book in one stock, while institutional trader may prefer anonymity of Posit, or ability to negotiate.
12. An information system that effectively connects the various trading venues for providing :
    a) Not only the quoted terms of trade at any time for each venue, but also the volume of transactions on that price quote
    b) An efficient means of transferring excess supply in one exchange to excess demand in another

This means that existing completion caused by fragmentation needs to be consolidated. At the turn of the century the information on quotes is transparent but information on trade varies considerably.

UPDATE: As in 2017 the special trading platforms for futures in commodities, equities and derivatives are already functional in India. The above article facilitates a deeper understanding of the factors at play in the online exchanges.

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[i] Source: Adapted from article by Lawrence Glosten and Charles Jones : ‘ The past, the present, and future in trading stocks’ , published in Business Standard, Special edition on ‘ Mastering Investment’ dated 30.08.2002.