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Sameer Kamath, Chief Financial Officer

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Leveraging technology across the broking service value-chain: Findings from global experience

Role of technology in the brokerage space

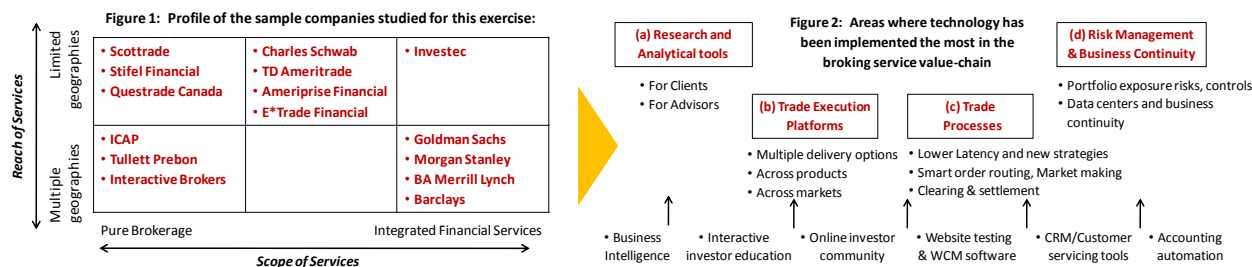
Today's brokerage sector is seeing ever-increasing volumes with most firms offering securities across assets and markets, and widening of the investor base. The bar on clients' expectations is ever-rising, from analytics, to delivery till servicing. Technology is the key link in this evolving age, helping firms move towards intelligent ideation, delivery and execution, while empowering investors from thought to trade.

Brokerages are implementing tech-tools across the trade life-cycle, keeping in mind the user-market integration, convenience of delivery, security, latency, risk controls, client servicing and business continuity. Trading platforms are now feature-rich and customizable, with analytic tools advising asset allocation, portfolio composition and 'What-If' scenarios. Some of these tools/software are also being developed with the intention of being multi-faceted, i.e. usable across more than one asset class.

Technology is no longer just an add-on commodity for brokerages; It has now become an indispensable business asset providing value-add, cost efficiencies and competitive edge in this highly volatile business

Brokerages globally are investing in technology - proprietary, outsourced or acquired, to develop scale and scope of their business, drive efficiencies and enhance their competitive position, while reducing operational costs over the long-term in this increasingly volatile industry.

We studied recent tech initiatives of **15 firms from USA, UK, Canada – Sample Peers** (Figure 1). Based on these findings, we developed a service chain flowchart where technology is seen to have been most implemented (Figure 2). **The purpose of this study is to understand (1) service areas where sample peers have recently focused on for technology implementation, with examples of some popular tools, (2) key observations on the business strategies that emerge from implementation patterns, and (3) the advantages & challenges faced.**



(1) Service areas across the broking value-chain which have seen technology implementation recently

a) Research and Analytical tools:

For Clients: Apart from basic research, data and screening, US brokers viz. E*Trade, Ameriprise, Schwab developed online analytical tools for portfolio planning, self-directed asset allocation, idea generation and financial planning. Interactive Brokers also developed 'What-If' investment scenarios. Schwab introduced its quantitative equities rating model that provides a single-grade rating for clients' convenience. Account opening is simplified, with flexible online account opening systems. With clients having multiple business relationships with a firm, companies like Scottrade and Ameriprise developed single sign-on and integrated cash account combining all relationships into a single portfolio. To enhance the client interface, these firms now include real-time position monitoring & performance reports in their integrated platforms.

For Advisors: Online advisory tools to support RIAs in their client interactions. For ex: TD Ameritrade's Amerinvest develops fund portfolios based on goals/risk, identifies fast-moving stocks using price/volume trends and sets advance alerts for orders. Interactive Brokers' tools help advisors to automate multi-client trade allocation, rebalance portfolios and make performance reports. Schwab has a website for advisors with interactive tools, research and practice management skills to assist them in their practice. Its now the core platform for its IAs to conduct their daily business online - with electronic reporting capabilities, online cashing and e-Document archiving/search across multiple years.

E*Trade's Online Advisor provides asset allocation and actionable guidance for self-directed investing till discretionary investing styles



b) Trade execution platforms:

Multiple delivery options: From the traditional offline, firms are incorporating online, desktop and mobile delivery platforms as well. In fact, discount brokers like Canada's Questrade have built its entire USP around its web/mobile platform – 'IQ Suite'. It offers direct trading access online, advanced charting, customizable layouts and ultra-fast execution. Ameritrade's 'Trade Architect' offers touch-tone trading, direct access to markets, live CNBC news, heat mapping etc, all with Zero platform fee. It also allows data streaming from 3rd parties on its Veo platform. Its scalable and low-cost platforms can handle upto 33,000 client logins per second and upto 1.5 mn trades per day. Direct Market Access (DMA) is another area made possible with technology, by linking institutional clients with exchanges directly, through the broker.

TD Ameritrade's Trade Architect and Questrade's IQ Suite platforms



Online/desktop trading now has streaming quotes, live news, advanced strategies (Nasdaq Velocity, Options First etc) and also customization capabilities. While Scottrade, E*Trade, ICAP etc are maximizing the opportunity of this platform, Tullett Prebon is using a more hybrid voice/online approach. Smaller brokers like Stifel are yet to start e-broking and electronic distribution.

Mobile Apps now give real-time research, analyst views, investment ideas, detailed charting, company profiles, fund transfer, secure trading and monitoring. Scottrade developed a website for net-enabled mobiles specifically so that investors can react quickly to market changes, and need not download its mobile App in their phones, in that case.

Voice Infra: Most US firms are using automated phone systems that direct calls to appropriate departments, provides linkage between caller ID and client database to give immediate access to client's account. Investec uses an IP platform for voice which is load balanced across multiple data centers.

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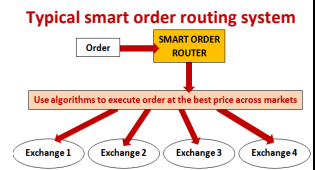


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- **Platforms across product classes:** Our sample companies offer securities across assets. So, companies like Tullett Prebon, ICAP, E*Trade etc developed trading systems with automated order placement/execution of equities, equity F&O, ETFs, bonds, as well as IR swaps, forex, treasury and energy. ICAP's BrokerTec is a market-leading platform in the forex and fixed income segment, well received by clients in ~50 countries. Its forward forex platform, iForward, also saw increased volumes last year. In fact, it has now succeeded in getting its own clients (Barclays, JP Morgan, DB, Merrill) to co-invest in its new IR swap platform. Apart from trading, today's tools are also evaluating strategies. E*Trade's Bond Resource evaluates and implements fixed income strategies. Scottrade expanded its platform capabilities to distribute one of the largest selections of funds in USA, giving clients & RIAs extensive choices.
- **Platforms across markets:** With the advent of e-exchanges, brokers now offer multi-market access by integrating their software with multiple exchanges. Interactive Brokers, which operates worldwide, established its proprietary connectivity network with exchanges for this purpose.

c) Trade Processing:

- **Lower Latency and New Trading Strategies:** A key achievement of technology has been lower latency, allowing faster completion of trades, lower impact cost and thus, enhancing returns. To the extent that, E*Trade can today offer a 2-second execution guarantee on all qualified market orders for S&P 500 stocks and ETFs. Technology has enabled newer trading strategies like algorithmic trading, high-frequency trading. These solution platforms allow even-higher trading volumes with minimal daily human intervention.
- **Smart Order Routing:** With investing across multiple exchanges now common, trade processing platforms are incorporating order routing. Interactive Broker's smart order routing automatically searches for best possible prices for an order and automatically routes/re-routes the order to execute it, enabling it to retain control of the order. Schwab uses its integrated web-software platforms for intelligent order routing.
- **Market making:** Interactive Brokers developed software that generates continuous bid/offer rates to exchanges on ~0.9 mn securities and futures. Once trade is executed, it delivers this info within fraction of a second. It has proprietary mathematical models to evaluate quotes.
- **Clearing and settlement:** ICAP and Interactive Brokers use tools that provide automated links from trading systems to clearing house and settlement venues, as well as automated reconciliation of trades/positions, corporate action, securities lending, inventory management etc.



d) Risk Management and Business Continuity:

- **Portfolio exposure risks and internal controls:** With trading across markets, assets & currencies now common, risk management tools are invaluable. Risk has been a recent priority area for larger firms like Morgan Stanley, Goldman Sachs & Barclays. Their credit tools control portfolio concentration by country/industry/product, monitor market risk, report risk by position/desk/business and conducts stress tests. Firms like ICAP, Tullett Prebon are implementing tools to identify/mitigate/reconcile risk; manage interest rate risk across currencies, use colour coding and pop-ups to warn clients on margin limits. Interactive Broker's Risk Navigator is a market risk platform used across assets, which uses 'What-If' scenarios and a defined format to report risk from different perspectives. Its credit manager software tests every order to ensure client's account can support it, uses automation to bring margin to minimum level by issuing liquidating orders in a smart sequence.
- **Data centers and Business continuity:** Higher volumes intensified the need for processing and storing huge amounts of data daily. Data centers are in focus, but it needs high capex. These are also critical to provide redundancy in case of any eventuality. Efforts are to improve storage utilization, like consolidating storage platforms. The financial sector & IT cos. like Cisco, IBM are exploring cloud computing as a solution for scalable computing capacity and lowering capex. Business continuity plans are addressing issues like loss of data or telecom system with minimal service impact, fault tolerance (system performance despite exchange/hardware malfunction), outsourcing critical business applications to vendors who keep back-up.

Cloud computing in capital markets

Advantages	Challenges
Access systems regardless of location or device	Availability of resources
Pooled resources & use	Data privacy
Quick scale up/scale down	System security
Pay per use, Cost savings	Compliance adherence
Minimal human interaction	

e) Other Related Areas:

- **Business Intelligence:** BI is rapidly transforming business decision-making through query, analysis & reporting tools. BI softwares enable consolidated reporting, automating collection & consolidation of data, developing real-time analytical dashboards, what-if scenario analysis across departments. It helps analysis of business data for insights, more visibility into business dynamics that are impacting results, identifying focus areas to improve performance and meet financial targets. Forecasting applications for annual budgets will also drive BI spends now.
- **Investor education:** Interactive courses, regular webinars with live presentations, online videos and web tutorials
- **Website:** Web content software as single base for group sites; Testing with client-user groups for its effectiveness, Phased roll-out
- **Online investor community:** Discussion & exchange of ideas for clients across investing styles; can start own discussions
- **Client servicing:** Web-based client servicing platforms; Devising customized client services driven by the CRM inputs
- **CRM:** An integrated CRM across multiple client accounts; Using CRM system for MIS data analytics; use for lead generation
- **Accounting system:** automatic data feeds from clearing/banking to make financial statements each day by mid-day next day

(2) Observations emerging from the usage trends of the sample companies

- Client interface and trading platforms are mainly in focus of broking firms targeting self-directed clients. Risk management and controls are more in focus of large prime brokerage firms as they generally have higher exposure across multi-markets. Smaller brokers are yet to move into online trading
- Generally, small players are outsourcing while the large firms are developing proprietary systems based on their client and operational experience, which gives them competitive edge and cost-effective scalability. Exception amongst large firms is when they outsource to tap very high-quality vendors
- Client interface platforms cover the entire spectrum – from analytics to delivery models till trade execution, so that the need for human intervention for self-directed clients is minimal
- Proprietary systems are mostly for analytical & planning tools, data networks & connectivity and evaluation & testing models. Outsourcing needs are mainly for market research info., back-office operations and maintenance of computer systems & technology infrastructure
- Favourable investor response to the better platforms shows these are not just an additional functionality, but are now becoming an integral source of generating incremental business. With clients actively partnering with firms in developing new platforms, it also shows the level of conviction clients have
- Firms operating across products are developing (a) applications for the entire product spectrum, not just few and (b) an integrated platform to handle all of them. However, this is mostly for equities, funds, F&O currently, while the relatively complex products like swaps, forwards & energy still use separate platforms
- Systems and platforms are being made scalable to handle incremental capacity. The attempt is also to make the softwares with a unified purpose
- Continuous upgrading and also developing solutions for issues faced by the new applications are now the new normal. Scottrade's mobile website as an alternative to its mobile app is an example

An area of technology usage which the sample companies have not mentioned recently is Portfolio Performance Reporting. We assume most have already implemented client performance report tools. Now, some advisory platforms are also incorporating this automated report feature

Better platforms have seen good investor interest. However, the key question the brokerages will need to address is whether the company achieved in capturing the value from these tools/applications in its profitability, or did the client only get the value?

(3) Advantages seen and ...

... Challenges faced

Business Opportunity:

- Opportunity to tap increased volumes across assets/markets
- Increase the investor base by providing convenient delivery models
- Scalability concerns may create good, potential acquisition targets
- Improving client service & engagement through customized services

Costs:

- Opportunity to scale up further at a comparatively lower incremental cost, thus helping Opex ratio over the long-term
- May be comparatively cost-effective in terms of adapting to changing client expectations; It also reduces need for human intervention
- Software virtualization across geographies may save software spends

Clients:

- Offers clients the convenience and opportunity to trade as they wish
- Analytic tools creates engaging client experience & informed decisions
- Real-time monitoring, live news, alerts help taking quicker decisions
- Integrated client account helps in terms of convenience and simplicity
- Advisor tools helps RIAs spend maximum time in client interactions
- Offers an opportunity to study and understand complex strategies

Company Operations:

- Intelligent analytics & efficient execution can give a competitive edge
- Enhanced trade execution and processing time – lower latency
- Automation of margin and exposure limits ensures risk compliance
- Enhances data storage capabilities with volumes increasing each year
- Online A/C opening opens up geographies with no physical presence

Software Making Process:

- Making software usable across applications enhances its utilization
- Using client-user group in testing phase increases its relevance

- Developing platforms and tools requires time, effort and money
- Need to understand if tools should be given free OR for a charge
- Not to over-value the target companies
- Ensuring consistency in the results the tools show

- Significant initial outlay to build tech capabilities
- Must be adaptable to the continually evolving regulations
- Client expectations are EVER-changing and the applications will need to continuously follow those trends

- Existing clients comfortable with offline model may be reluctant to shift, so may need to still operate a hybrid delivery model
- Clients need to first possess a certain level of understanding of these analytic tools, in order to interpret them accurately
- An adaptive design to enhance the productivity of different RIAs

- Need for continuous change can erode competitive edge quickly
- Investing in networks, connectivity & technical operations team
- Data-center capex outlay can be significant
- Ensure correct KYC compliance

- Understand software requirements or make an adaptive design
- Management team and user groups need to tech savvy

Conclusion

Technology is helping develop the scale and scope of the firm's business and gain an edge over its peers by offering competitive and feature-rich tools. While the immediate impact is the initial capex requirement, it nevertheless helps the opex over the long-term by bringing in scalability at a lower incremental cost.

In a country like India where the product depth and geographic reach of the broking service is still low, the opportunity to expand the industry further is immense. Technology is the best means to achieve this end. However, apart from its operational objectives, the platforms will need to ensure they are cost-efficient and scalable for them to deliver on their financial objectives as well.

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