Trading Platform of the Future

A Microsoft Industry Perspective for Capital Markets

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The capital markets industry is at an inflection point, as the unsettled landscape presents nearly unprecedented risks and also rapidly evolving growth opportunities.

Fortunately, technology evolution is accelerating and maturing to more quickly unlock business innovation. To stay on the competitive edge, now is a critical and opportune time to consider enhancing IT strategies for key business capabilities to attract and retain customers, improve trader efficiency and effectiveness, drive deep customer and business insights into real-time market data, and manage enterprise risk and support in mission-critical operations.

At Microsoft, we work with some of the most sophisticated companies in the industry, envisioning the future technology-related capabilities and solutions they will need to meet these shifting market conditions. Microsoft’s vision for capital markets trading platforms is focused on optimizing the effectiveness of traders in five areas:

- Prediction, research, data sourcing and best execution efficiency
- Trading desktop: hardware and applications
- Collaboration for customer-centric service
- Client information and interaction
- Product/service development and distribution

There are proven and repeatable technology investment patterns that help capital markets firms improve and streamline information flow in each of these areas. Microsoft uses well-honed techniques to design systems, and help integrate solutions for greater productivity, better cross-organizational collaboration, and improved customer experiences that grow market share while expanding transaction revenue.

This paper is intended for business and technology leaders at capital markets firms. It discusses the key challenges of existing trading platforms, formulating the right trading platform strategies, identifying and implementing solutions, how to accelerate technology initiative planning, optimize return on investments, and Microsoft’s value proposition to the capital markets sector.
Challenges of Existing Trading Platforms

PREDICTION, RESEARCH AND DATA SOURCING

Firms are heavily investing in data management solutions as underlying technology infrastructure often impedes current business practices.

A survey of the top global investment banks¹ shows that the qualities customers prioritize most are the experience(s) with the firm, the price of investments, perception of the company’s reliability, continuity of investment, and strength and accuracy of research.

With the volume of market data available today, it is not surprising that effective financial research is so highly valued by clients. However, the methodologies used by traders around the world to gather and analyze data still contain substantial inefficiencies in both process and supporting technology.

Clients’ least-valued quality is convenience, indicating that customers are likely to go out of their way for what they perceive to be high-quality investment opportunities, but may switch financial advisors if perceptions change.

TRADER SOFTWARE AND HARDWARE

Capital markets firms recognize the need to invest in trader hardware and software – and that providing autonomy to traders fosters wealth-creating innovation. Traders today often have access to high-performance computing resources to model and determine more valuable trading strategies and risk-aware pricing.

Due to the need to access new markets and new functionalities, IT is under pressure to deliver new capabilities at a rapid pace, often adding more applications, tools, display screens, computers, and servers. After years of evolution and new applications, traders’ desks today include an array of keyboards, desk phones, and reams of paper.

Quite often, applications are disparate and do not provide a unified view of the business or a composite perspective of customer activity and exposure. Some applications are also showing increasingly large amounts of data with limited options for visualization, often developed with accepted visualization heuristics that do not always support effective decision-making.

¹ Adapted from the model by Renée Mauborgne: INSEAD Distinguished Fellow and Affiliate Professor of Strategy and Management. Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant
Traders usually have several computing applications open at the same time. The information is not always presented clearly (e.g., highlighted or sized according to importance or rate of change). Traders often work in a crowded, noisy environment with a high level of complex data and technical activity, which requires fast responses to monitor, make decisions, and then execute. This combination can lead to human error and inefficiency.

Data analysis and source validation can be time-consuming, and often the processes are not easily replicable. With multiple islands of information and limited tool automation and integration, resulting in traders having to move data manually or source it anew.

For the custom trading applications that are developed in-house, initial development time, on-going maintenance, and time spent compensating for an overly demanding technical environment can lead to increased total cost of ownership and complexity. With an optimized deployment of cost-effective, easier-to-use IT products and services, these processes can be dramatically improved.

### INVESTMENT TRADER SOFTWARE USAGE STATISTICS

- +/- 15 applications always open
- +/- 40 windows open
- 15 to 50 lines of data per screen (font size 10)
- Applications do not require the same frequency of use, nevertheless all must be accessible at any time
- Nonstop monitoring of stability and reliability of the applications
- Daily configuration activity required
- Visualizations often counterintuitive to trading strategies
Coordinating customer contact points and events within the firm and among trading partners is another area of potential improvement. Many organizational structures reflect product boundaries, so processes don’t address customer needs in a timely way. When communication is inconsistent or inaccurate, trust and credibility can be jeopardized. Attention to internal and external communication can dramatically enhance the quality of the client interactions.

Traders today use a complex mix of quantitative and qualitative data. The more accurate, relevant information that can be shared and made available, the better the results for clients, traders, and the firms they represent.

“Dealer boards provide an interface that people remember. It takes a lot of space, but we go directly where we need to get access to the right person; it’s fast.”

“Chat is the quickest, we know who is there and there is no small talk.”

“Email is not commonly used during trading hours because reading and writing require concentration and take too long. Nevertheless, it is our main solution to exchange data.” - Trader Quotes

Finally, the institutional client landscape is changing and becoming more diverse and mobile. Firms are using social media platforms to discuss trading strategies and share information, including gaining customer insights and personal experiences about investments. New delivery models and channels are driving customer demand for new ways to access information and execute trades.
The ability to understand the nature and cause of data movement more easily and reliably has become more vital than ever before. Key strategies and solutions include a combination of business insights to analyze in real-time, along with historic and current market data to be able to effectively price and trade.

Customer relationship management (CRM) and analytical solutions can help firms build more responsive and profitable customer relationships, working with a variety of sales and service channels. These solutions include a single view of the customer, support for new business acquisition and customer service processes, and tools and prompts to help identify opportunities for cross-selling.

Recently developed supporting technologies include solutions that can better handle a mix of structured and unstructured financial data. Algorithmic trading systems are now able to access new data, and advanced visualization and simulation tools combined with natural interface controls which are enhancing the analysis and presentation of complex information – significantly improving the user experience for both the customer and trader.

Advances in online trading solutions have provided fast, convenient and low-cost trading delivery options. Traders can seamlessly connect to middle-office and risk systems, perform complex calculations and functions, and trade through electronic exchanges. Faster transactions at a lower cost, easy-to-navigate user interfaces, the ability to monitor and deal with several stocks at once, get information on downtime, and the ability to uncover hidden costs are among the critical differentiators of contemporary online trading platforms.

With the rise of cloud computing, variable usage patterns can be addressed in a way that provides business value for a company, rather than being just another cost of doing business. These methodologies can bring significant competitive advantage to a trader or firm, regardless of company size. Traders need to consider which services they want to consume and which they want to provide at a fundamental level.

For example, cloud services can provide firms with better solution options for applications such as analysis, risk management dashboards, customer management, distribution and online applications, order management and trading desks. Before the recent breakthroughs in technology, these options would not have been practical or cost-effective.

Client quote: “We receive constant alerts; we have to delete the less important ones. It would be useful to sort them and order them instead of deleting them.”
With today’s traders constantly in motion, data that is well-presented in a meaningful format and context can make a big difference in research efficiency and accuracy. By focusing on identifying future opportunities – rather than analyzing risk and historic performance in isolation – traders and institutional sales staff can better serve their clients.

The Microsoft vision includes an improved use of desk space and technology devices. Institutional sales information displays and access to data should be optimized, with a 360-degree view of the client across all product silos and functional areas. Shifting from machine-centric commands to natural human interactions will help to optimize frequent actions such as accessing applications, moving and manipulating data.

Traders should have large screens, separated into meaningful zones, a tactile screen, tablet PC and or natural keyboard, and mobile devices. Data flow needs to move continually toward a push model, requiring less computing power at the trader desktop. The data must also be displayed in a meaningful way, as detailed in the Trading Desktop section of this paper.
Firms today have a compelling opportunity to create a distinct and trusted voice in the marketplace. They have the ability to not only focus on the service experience they bring to clients, but to actively help stimulate new markets and leapfrog the competition.

Given the thirst in the marketplace for meaningful, accessible information to support investment decisions, clients want to use more personal, customized communication channels. Monitoring usage of the information is also within reach, as many clients will provide actionable feedback about their communication preferences regarding investments and financial decisions.

Increasing the emphasis on cross-product and cross-channel bundling based on client trading goals can help capital markets firms effectively inform clients about new opportunities, in a coordinated approach, providing a better platform for monitoring client trading patterns and reactions.
COLLABORATION AMONG COLLEAGUES

Communication and collaboration are central in most types of trading environments. Discussions with colleagues, support teams and clients are constant. Secure, reliable connections are crucial.

Common communication tools include:
- Conference calls
- Email
- Instant messaging
- Direct exchanges
- Noise alerts

In order to holistically serve customers, effective collaboration should take place across the entire client service and account management experience. The challenge is how to support this activity at the required scale. This involves removing unnecessary barriers and providing the right tools to improve efficiency and collaboration across multiple communication platforms.

It is important to continue working toward increased collaboration and transparency, delivering the ability to describe trade floor opinion, mood and market behavior to sales teams and clients alike. Collaboration between traders of the same team is key.

By providing simple yet effective tools such as instant messaging, voice and video communications, as in Figure 4 (second panel), trader collaboration and profitability can be increased while meeting regulatory compliance requirements.
PRODUCT AND SERVICE DEVELOPMENT AND DISTRIBUTION

The benefits from a coordinated experience (client purchasing and loyalty) can be significant, which can often lead to additional trade flow. By providing the right insights and solutions for organized client and channel distribution, firms can support a more engaged client base. They can learn more about clients, their interests and intentions, how to capture, store and reuse this knowledge in a more structured and repeatable way. This allows for greater automation and support of client engagement, channel distribution and management.

By improving processes related to product development, firms can increase speed-to-market and replicate processes so products can be sold consistently and efficiently.

Integrating social media into the investment research and product development process helps investors post their investment opinions on various stocks, and firms can determine public interest in trends. This might involve creating social communities to test out new products and services to get feedback early within the product life cycle, which can often help improve the probability of the product’s success at when brought to market.

TRADING DESKTOP

Server Strategy
Cloud computing platforms help firms by increasing computing power, lowering cost of ownership, improving business and organizational agility, increasing new product and service speed-to-market, and improving customer service.

Microsoft provides high-performance computing solutions that bring the power of scale and the flexibility of hybrid scenarios to the broader organization. These solutions enable high-quality modeling and simulation with cloud-based data and computing services for optimal performance across Windows client, server, and cloud scenarios.

Desktop Strategy
The trader desktop must be separated from the data flow and presentation in order to appropriately reduce trader dependency on a particular device and location. This provides traders with a more flexible desktop experience, reducing desktop complexity and total cost of ownership.

When looking at the physical ergonomics of the trading desk of the future, Microsoft envisions a computing surface with three segments. The three segments correspond to three types of computing activity: a large visualization screen, a communication panel, and a touch surface for more natural interaction with the computer.
These diagrams show an ergonomically designed interface that run applications such as Office, market data and news, position monitoring, order management, alerts, notifications, and communication tools.

Trading-specific features include single sign-on (for identification, authentication, personalization and share sites); predefined layout modes, automatic configurations and window formations; the ability to zoom in/out, view picture-in-picture data flows, and see trends faster with zones color-highlighted based on data analysis.

Traders also benefit from mobile devices, such as a slate. Currently, desktops are cluttered with paper records, notes, multiple keyboards, and several pointing tools. Capital market firms now have the ability to leverage advanced devices to better bridge the traditional divide between digital and physical worlds.

**Desktop Infrastructure**

Limiting the number of PCs available to each trader can immediately cut costs and improve efficiency. Eight screens is the current technical limit to attach to a single PC. Microsoft recommends using six screens to present information, plus a two-screen touch panel, similar to Figure 3. This provides better user interaction and reduces the required number of keyboards and mice.

**Using Desktop Virtualization**

By providing trading applications with adapted CPU/memory configurations, IT departments can better use existing computing power. Using virtualization technologies also helps to facilitate the deployment of new versions of firmware, drivers, and software, as appropriate.

**Improved Applications**

Today’s methods of data manipulation allow for applications that provide two-dimensional data and primitive numbers to be rendered in real time. Not only can this help interpret the data, but it can also start to help traders experience data in new ways.
The Microsoft Enterprise Strategy Program focuses on business impact and value by optimizing the use of technology to accelerate customers toward their business goals and foster innovation. It provides business executives with a programmatic approach that enables business transformation, advances technology thought leadership, and maximizes the value of Microsoft products and services.

Through a range of service offerings, the Enterprise Strategy Program employs methodology and frameworks that are built on extensive knowledge and experience working with customers in various industries around the world. The Microsoft Value Realization Framework employs a structured three-part process that provides context for defining the right initiatives, plans for measurable change, and demonstrates business value. This methodology results in a prioritized portfolio of opportunities, a program for change and value prediction, and a value realization scorecard, helping put Microsoft customers on a course that speeds their time to value.

**Assessment**
- Assess the key forces at work, drivers for change, capture requirements and success factors.
- Assess current business, economics, organizational and technology landscape.
- Analyze competitive market position, emerging trends, challenges, capabilities, portfolio plan and areas for investment that will help to identify and prioritize specific requirements, gaps and priorities.

**Initiative Planning**
- Formulate strategic direction.
- Define key business and technology capability changes required for target vision.
- Business justification.
- Define architectural changes required.
  Prioritize and develop plan to deploy within the organization, while maintaining focus on the business objectives.

**Value Realization**
- Deploy and operationalize the strategy.
- Establish the right governance to manage and monitor performance, track and support value realization.
- Drive effective change and organizational adoption.
Why Microsoft for Capital Markets?

Microsoft and its partners provide software solutions that help capital markets firms attract and retain customers, drive deep customer insight, improve profitability, manage enterprise risk and support mission-critical operations.

**CONNECTING CUSTOMERS**

Helping firms provide a seamless customer experience across delivery channels and respond to competitive pressures through solutions such as product origination, social community connections, brand management and strategies, digital marketing and a process-based workflow platform. Reducing cost with the new world of cloud-based business services.

**CONNECTING EMPLOYEES**

Providing the collaboration, business insights and Customer Relationship Management tools to gain deep market insight and a 360-degree view of the customer, driving profitability and growth.

**CONNECTING OPERATIONS**

Supporting financial institutions in mission-critical operations, and providing legacy core system renewal at a lower total cost of ownership. Back-office processing through strategic use of application integration, data transformation, business activity monitoring, and business intelligence across multiple systems and industry networks such as the Society for Worldwide Interbank Financial Telecommunication (SWIFT) and securities settlement.

**CONNECTING PROCESSES**

Making possible the collection, measurement, assessment, reporting, and monitoring of an enterprise-wide risk profile, such as document and records compliance, risk management and analysis solutions.

Microsoft proactively works with the major standards bodies that impact the capital markets Industry to design our products and solutions to comply with industry standards. Our product teams strive to make sure that our products and platforms meet the high demands of today’s firms. Our field teams work together with our industry partners to provide solutions that deliver business value to capital markets firms worldwide.

Enterprise-focused solutions from Microsoft and our industry partners respond to the unique concerns of your business. We’re committed to helping you solve problems while getting to market faster and gaining new efficiencies.

With our breadth of solutions—spanning consumer and business technology and extending from the data-center to the desktop to a variety of other devices and into the cloud—we offer you the flexibility to use the technology that’s right for your business, without compromise. And in a business world where users increasingly choose their own technology, we can help you satisfy expectations with familiar and intuitive tools that don’t sacrifice security, reliability, or privacy. We do all of this because we’re here to help you realize the greatest value for your IT investment and equip your enterprise for long-term success.
Whether the focus is on differentiated products and services, better prediction, research and best execution, improved client information and interaction, more collaboration among colleagues, faster product and service development, more efficient and effective distribution, or another business strategy, by taking advantage of today’s unique economic and technological opportunities, trading platform innovations can be substantially improved in several areas, returning immediate value to the business and preparing for the future.

Microsoft offers solutions that empower capital markets customers to help identify, attract and retain high-value customers while frequently reducing costs.

**Opportunities exist to:**
- Increase speed and agility to meet new market challenges and competitive pressures
- Better support mission-critical operations
- Improve financial and performance management with better business insight
- Simplify regulatory compliance and increase business transparency
- Drive high performance through increased operational efficiencies

With an extensive history of improving the efficiency of business users of all types, our depth of experience is evident in the reliability and usability of Microsoft-driven trading solutions and data management and visualization software.

Microsoft’s enterprise strategy program can help capital market firms optimize the value of their technology investments, innovate on the right strategies, drive new business opportunities, reduce cost and mitigate risk.

To further discuss the challenges of existing trading platforms, improvement strategies and solutions, technology initiative planning and return on investment, or Microsoft’s unique value proposition in the capital markets sector, please contact your Microsoft account executive.

**Call to Action**

The Microsoft Enterprise Strategy Program is designed to manage these complexities and deliver tangible results. The program fills an important gap. Management consultants often lack the technical expertise needed to examine thoroughly and transform an enterprise IT environment. Technology experts rarely have the required insight into business strategy and the intricacies of how business decisions are made. The Enterprise Strategy Program delivers the best of both worlds.

After all, nobody knows Microsoft products and their capabilities better than Microsoft, and therefore a Microsoft Enterprise Strategy Program engagement can help you develop your technology-enabled trading platform strategies, architectures and solutions by:

- Aligning IT needs with business goals
- Maximizing ROI on the entire Microsoft software portfolio and services investment
- Realizing the full potential of non-Microsoft technologies
- Removing redundant technologies and streamlining your heterogeneous IT environment
- Creating a long-term technology roadmap to further business innovation
Conclusion

Resources


Microsoft Cloud and Online Services:  http://www.microsoft.com/cloud


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