A-TEAMGROUP
Smart Thinking for Financial IT Executives

Buy AND Build: A Blueprint for a Modern, Agile Trading System

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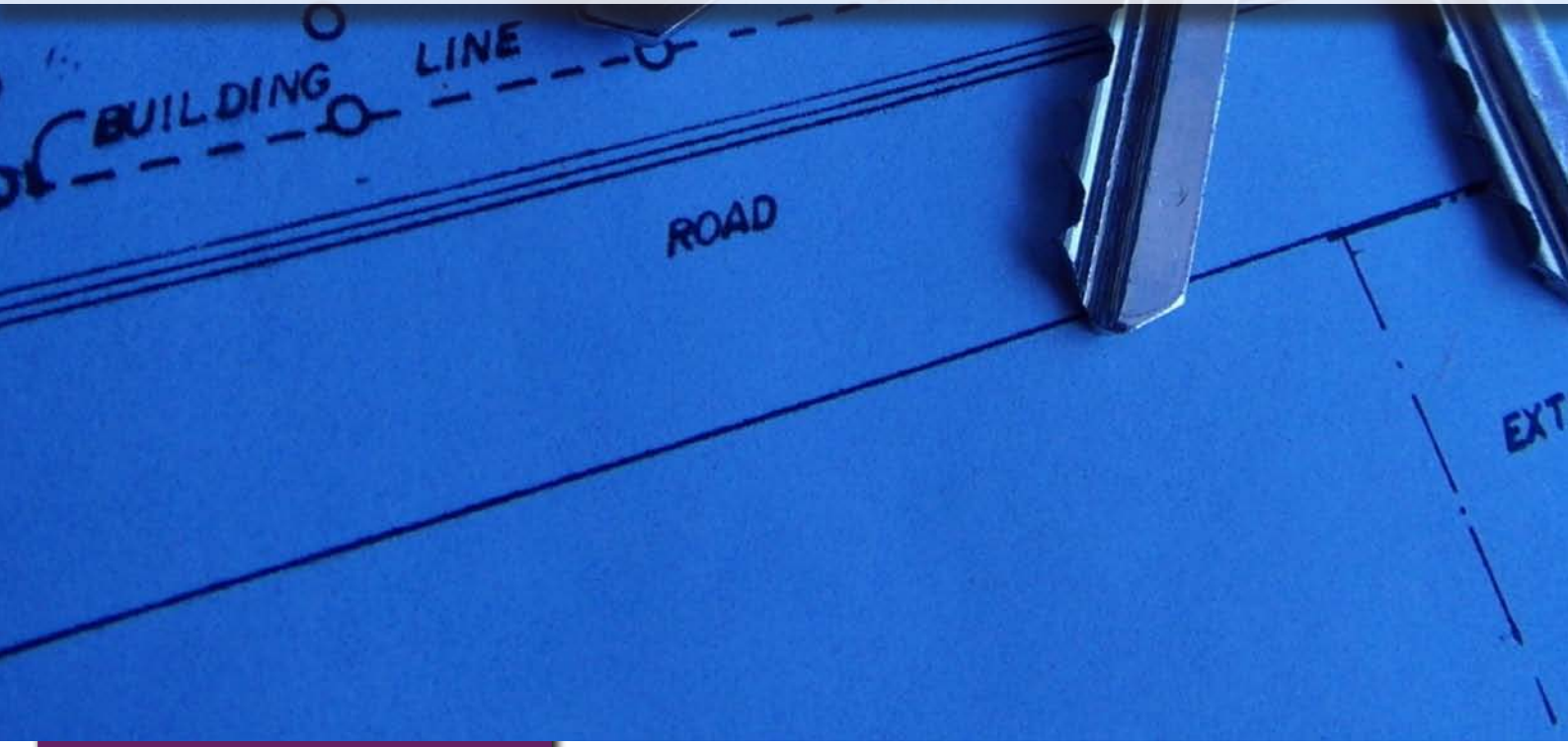

Intelligent Trading Technology
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Introduction

High-speed trading connectivity has been a major significant advantage for the past several years. But as low-latency infrastructures become a mainstream capability, the cost of generating incremental speed has become prohibitive, and market participants are seeking new ways to differentiate their activities.

Firms are seeking to add value to their trading systems, while continuing to maintain the high-speed connectivity they need to remain competitive. To accommodate new capabilities – in the form of pre-trade analytics, risk controls and post-trade clearing intelligence – trading firms across the board are re-evaluating their systems.

As they do this, the concept of buying component parts and building them into a preferred trading architecture is gaining moment. This appetite for 'buy and build' appears to have its genesis in the recognition among larger players in particular that developing systems internally is no longer a) a requirement for key elements of trading system functionality and b) cost-effective at a time when operational resource is being squeezed.

Lower vendor price points, based on use of more open technologies and new commercial models like open-source, means that smaller players can start to add unique functionality where before they were constrained by resource to use of vanilla third-party systems with little scope for differentiation.

Underpinning all of this is a visible trend toward freedom from reliance on a single supplier, even as the post-trade data management requirement becomes more complex the more components are involved. Indeed, a common emerging complaint is the difficulty in integrating the output from multiple trading systems in a way that can be applied to the raft of new reporting requirements being demanded by regulators.

Those with the expertise and resource are building trading infrastructures based around central messaging platforms. They are integrating front-end components – OMS, EMS, market data – from third-party suppliers. And they're driving all post-trade messaging across the platform to middle- and back-office functions like risk management, regulatory reporting and settlement. Ensuring consistency of data is the new challenge, driving a potential trade-off between performance/functionality and the ability to handle data outputs from multiple systems.

This paper explores approaches for creating a trading platform capability that is flexible enough to accommodate the transaction lifecycle, powerful enough to deliver the analytics that provide better informed trading decisions and fast enough to meet both customer and regulator expectations of trade visibility close to real time.

A Perfect Storm: Risk, Regulation and Restricted Resource

As global markets start to recover from the protracted weakness endured since the credit crunch of 2008, market practitioners have returned to the fray to find a tougher landscape than before the crisis.

As well as more challenging business conditions overall, traders are subject to a broader, deeper and constantly changing array of regulations that are adding complexity to already-complex markets. And of course, although markets have improved, the intense focus on operational cost remains: budgets for the tools of the trade are tight.

From a purely business perspective, today's is a more competitive market environment. The more complex marketplace introduced by structural reforms like the EU's Markets in Financial Instruments Directive (MiFID) has boosted the sophistication of client organisations, many of which expect more from their service providers. Best execution has become a minimum requirement, with buy-side practitioners seeking greater market insight and higher levels of service.

As investment banks and prime brokers battle to win client business, fees have had to remain competitive even as the cost of servicing customers has increased. Margins have narrowed, putting pressure on profitability. This in turn has pushed firms to seek business in new, sometimes higher-risk markets.

These factors have combined to drive the requirement for multi-asset and risk-aware trading systems to support the new business areas while maintaining performance in core activities.

While the business requirement intensifies, practitioners are also being inundated with a raft of new demands from regulators. The original MiFID added complexity to the European and global market landscapes, but its successor – MiFID II – threatens to be even more wide-ranging in its impact on firms' operational environments.

In particular, MiFID II's trade-reporting requirements – which, according to **A-Team's Regulatory Handbook**, will reduce the time permitted for firms to publish post-trade information to one minute from the current three minutes – have been described as the catalyst for market opportunities and competitive advantage for those who move quickly to comply, or potential damage to revenues and market share for those who don't.

Even before the prospect of MiFID II, firms continue to contend with the requirement for pre-trade risk controls brought in by the likes of the US Securities & Exchange Commission's (SEC) Rule 15c3-5, a.k.a. the Market Access Rule. The SEC rule requires brokers to maintain pre-trade risk controls and supervisory procedures that are "reasonably designed to manage the financial, regulatory and other risks related to its market access, including access on behalf of sponsored customers".

In terms of key capabilities, this requires the use of filters that prevent erroneous, or so-called 'fat-finger' trades, or block the entry of orders that exceed pre-set credit limits or capital thresholds. Brokers must take on responsibility for meeting all regulatory requirements associated with connecting to the exchanges or alternative trading systems in question. As such, broker solutions need to take into account the specific rules, regulations and conventions of the markets in question.

Tightening the Rules

And on top of these onerous regulator-led initiatives – not to mention broader initiatives aimed at stymieing market abuse or dealing with net capital requirements and calculations – individual exchanges and execution venues are tightening their own rules for participation. In one highly visible example, European derivatives exchange Eurex has introduced more stringent requirements for those wishing to connect to the exchange. The move came in response to an initiative by German regulators Barfin to respond to the government's calls that all order and quotes sent to German markets must be labelled in order to identify the source.

This can be an individual trader or algorithm, and has translated into the requirement for connecting members and their independent service providers (ISVs) – third-party suppliers of terminals or execution management systems – to add the capability to their systems.

Adding Intelligence

Nor has technology stood still. Fast market access – enabled by low-latency connectivity technologies – is no longer the exclusive remit of a few specialised market participants. Most brokerage operations have fast connectivity to key execution venues. Super-fast, so-called ultra low-latency connectivity is increasingly confined to the specialists; but for the remainder of the market, fast access is the norm.

This also means, however, that being merely fast is no longer enough of a differentiator. Firms are now investing to add market intelligence to their trading platforms, through the use of better price discovery, faster analytics and robust risk controls and credit checks.

The Cost Factor

Finally, with pressures to improve trading system performance from both business and regulatory quarters, trading heads are being asked to cut operational costs. With many trading operations running as lean as possible after six years of austerity, trading system administrators are looking to new ways of keeping ahead of the competition with better service and reduced price.

This situation has sparked interest in the use of managed trading services for at least some aspects of the spectrum of trading services on offer. The industry's increasing acceptance of the concept of cloud computing – after years of hesitation around security issues – has made the prospect of managed trading services real.

Firms are also becoming more sophisticated about their use of third-party ISV platforms. Some report having been burned in the past by over-committing to a single supplier throughout the trade lifecycle, from market data, order-entry and trading, through to compliance and post-trade messaging. This over-reliance can develop into a monopoly situation, resulting in high costs of system changes and updates. This is changing attitudes towards unbridled use of vendor-supplied platforms, with firms wary of making the same mistake twice.

At the same time, at the other end of the scale, there is a growing market acceptance that trading systems don't necessarily need to be entirely proprietary in nature to be competitive.

As a result of these factors, the long-running build vs. buy debate – which in high-performance trading systems has tended to favour the former and in smaller-resourced shops the latter – is now transforming into a discussion around build and buy: the recognition that third-party solutions – as well as homegrown capabilities – have a role to play in the creation of a cost-effective, high-performance trading system environment.

The New Requirement

Given this set of market circumstances, what's emerging is a requirement for agile, cost-efficient and compliant trading platforms that are flexible enough in design to allow rapid response to emerging opportunities while avoiding over-reliance on a single supplier.

Business Agility, Technological Flexibility

From a business standpoint, the case for agility is multifaceted. Chief among the emerging requirements is the need for multi-asset trading capability. With firms trading both cash and derivative markets, it's no longer sufficient for trading systems to handle a single asset class.

Traders in cash equities will often trade associated options, and may also seek to hedge in the foreign exchange markets. Cost considerations are forcing the consolidation of multiple individual trading systems into a single platform capable of handling all three.

While exchange operators are moving toward support for multiple asset classes, the current rule of thumb maintains 'Chinese walls' between trading in various asset classes. This leaves market practitioners to integrate their access to different security types, with many looking to their ISVs to support the capability.

According to one executive with responsibility for electronic trading at a mid-tier London-based brokerage, this drive toward multi-asset trading points to a vendor requirement for "waterfront coverage in terms of connectivity. This applies to both order entry / routing and market data, and gives everyone the opportunity to switch on markets they want without a major fuss."

On top of that, the trading solution needs to be destination-agnostic, with its capabilities transferrable across the multiple venues a broker and its clients trade on. This means the necessity for a cross-market and even cross-product platform, as trading strategies become more complex, traversing asset class and geographical boundaries.

As institutions grapple with building agility into their trading platforms, so too are they keen to ensure flexibility, from both a technical and a commercial perspective. Indeed, the latter consideration is a significant driver in achieving the former.

Many firms are stressing vendor-neutrality. Some are approaching this by implementing a central translation layer that handles all market data and order messaging. Others are adopting APIs, insisting on a specific file format or implementing central databases. Each instance, though, represents a fix of legacy situations, and it's essential that ISVs and other suppliers – of market data, analytics, FIX engines and post-trade messaging – have the flexibility to connect, whatever the chosen solution.

While some firms pursue this route to commercial freedom as a means of squeezing more value from their limited resources, others are considering the hosted or managed services option. Many ISVs and suppliers of other trading capabilities are now offering managed versions of their offerings, usually available either at the client site or hosted at a remote data centre.

This approach can yield significant savings, particularly through a reduced IT footprint, low to zero capital expense and reduced internal operating costs.

Compliance Considerations

As they build functionality, flexibility and speed into their trading systems, firms need to be mindful of the minefield of new regulations and exchange rules coming into force across various jurisdictions and markets.

To deal with the broad swathe of new and emerging regulatory requirements, most firms will employ their own compliance and legal teams. But it's possible to build into the trading platform certain precautions that can ensure compliance in certain areas.

In the pre-trade environment, trading system developers must ensure appropriate risk management and controls against fraudulent or off-market trades are in place. Many ISVs, for example, have adopted pre-trade risk controls to help their customers manage their own and their sponsored clients' exposure to specific counterparties, markets or instrument types.

Historically, brokers have paid lip service to this kind of risk through the use of post-trade drop copies of sponsored, or non-member, client trades. Regulators, though, have explicitly pointed out that this practice is no longer sufficient to obviate the kind of fat-finger, credit-limit or capital-threshold issues they seek to avoid.

Instead, modern trading systems require a comprehensive pre-trade risk element that provides more than mere after-the-event transaction information. These controls must differentiate between clearing and non-clearing members, with filters that address the specific and differing needs of both. They must give sponsoring brokers a by-client view of market and credit risk. And they must support multi-venue and even multi-trading-port views, to ensure that this by-client view is accurate and comprehensive.

As well as these pre-trade checks, the risk management solution must allow for trade intervention when limits are breached or filters alerted. They must continue to support post-trade drop copies, and checks and validations of those drop copies. And there must be processes in place for exceptions management, giving sponsoring brokers a clear procedure for handling situations in which trading rules, limits or other regulations are breached.

This approach can be extended into the area of market surveillance and guarding against market abuse. With penalties for bad trader behaviour at record highs, firms are tending to take this on themselves, although use of third-party tools can help relieve the burden. Firms can also mitigate against fraudulent behaviour by designating specific, controlled trading gateways for order entry. Says one trading technologist at a London brokerage: "We don't want the prop desk going direct to market themselves."

Trade Reporting

In the post-trade area, the EU's incoming MiFID II regulation will require firms to report all trades to recognised repositories immediately after the transaction is done. Firms operating within the European Securities Markets Association (ESMA) jurisdiction will be required to send security and counterparty identifiers, price, size and time of trade in 'real time', and any trading system must be capable of generating this output for downstream distribution into reporting systems.

This raises the challenge of transaction data integration, particularly where the firm is using multiple trading systems, whether homegrown or vendor-supplied. The issue of inconsistency of post-trade data appears to be widespread, with many firms struggling to ensure data generated from different trading systems is consistent for regulatory and indeed internal risk management purposes.

Finally, individual execution venues and exchanges have their own rules, regulations and market conventions. The German algorithm labelling rule is a case in point. Since early 2014, traders on Eurex and the Xetra equities trading system have been required to provide specific user ID – listing trader or trading program – with every market order and trade.

The Performance Factor

As they wrestle with the new regulatory requirement, trading system developers need to build performance into their platforms. With high-speed connectivity a given, firms are seeking to add analytical decision support information to be consumed by traders or trading strategies at the moment of execution.

Increasingly, firms are taking risk management and clearing options into consideration in their trading systems. A flexible ISV can integrate with a messaging platform or other centralised system, providing a seamless link to key clearing and settlement facilities to deliver transaction messages to the appropriate or desired venue. For many firms, this may be a small number of APIs to deal with, since cash bonds and equities can often use the same settlement facility, as can options and futures, and foreign exchange can be cleared through Swift's continuous linked settlement system.

Firms may also need to meet exchange requirements for transaction data for margining. Exchanges' approaches are changing, which can alter the requirement. Eurex, for example, has shifted from risk-based margining to a portfolio approach evaluating the entire client portfolio. It's important that transaction data affecting the portfolio is delivered in a timely and accurate way to ensure optimal margining requirements.

A clearing manager at a major UK trading firm points to the increasing propensity among firms to bring together their trading operations and risk management across listed and OTC derivatives. While such efforts are in the early phase of adoption, to future-proof against additional structural changes in the OTC marketplace, any trading platform development needs to build in enough flexibility to handle additional securities as they are transferred to more transparent trading venues.

This executive also points to the increasing propensity among firms to bring together their trading operations and risk management across listed and OTC derivatives. Part of this is being driven by incoming regulations such as EMIR, and the pressure to migrate OTC securities to more transparent trading platforms like Swap Execution Facilities (SEFs).

While such efforts are in the early phase of adoption, to future-proof against additional structural changes in the OTC marketplace, any trading platform development needs to build in enough flexibility to handle additional securities as they are transferred to more transparent trading venues.

Flexibility and Performance: Introducing Tbricks

Tbricks' trading platform is ready to meet these requirements out of the box. All functionality is available and ready to use on Day 1, allowing clients to take advantage of market opportunities straight away. More importantly, though, because all functionality is delivered as Tbricks apps, customers are able to make the platform their own immediately.

In the same way iPhone users can customize their phones with their personal choice of apps, Tbricks clients can start building their own unique sets of functionality by adding apps to suit their needs. By freeing developers to build their own apps in the Tbricks environment, the platform is just a starting point to unlocking new capabilities to respond to emerging market situations and help differentiate from competitors' offerings.

A Flexible Approach

Tbricks is a powerful out-of-the-box platform for market making and trading complemented by a rich library of trading apps that can be used straight out of the box. Traders wanting to price a new instrument, modify the quote logic for their market-making or realise a new trading strategy, can do it immediately without the need for intervention by Tbricks.

The Tbricks platform allows traders to easily extend and create new functionality across all business domains, including trading algorithms, limits, pricing, volatility, visualisation, control and interaction. For view and control, Tbricks' front-end is extremely bandwidth efficient and highly flexible, allowing algorithm management across all co-location sites from a single instance.

By taking this approach, Tbricks allows traders to unleash their imaginations without the restriction of IT department involvement.

Speed and Performance

Tbricks supports high-speed, high-performance native connectivity to a wide range of exchanges, execution venues and market data vendors, as well as DMA access through brokers. Tbricks is built for performance: using ultra-fast market connections, a modern architecture, and business logic implemented in optimized C++ code, the platform is acknowledged as the fastest system on the market. With template code generation, example apps and an open framework and SDK, users can easily implement intelligent trading strategies, reduce costs and dramatically reduce time-to-market.

But speed alone is no longer a sustainable strategy. Intelligent trading is the new focus, placing new demands on trading software. Tbricks lets users manage their trading strategies and algorithms with unparalleled flexibility. All algorithms (and business logic) in Tbricks are delivered as apps, along with their full source code. Traders can use them straight out-of-the-box, modify them to suit their trading strategies, or easily build their own. This way, they can tweak strategies or try out new ones at their own pace.

Regulatory Future Proofing

Sophisticated computer systems are not unique to the financial markets. Nuclear cooling and submarine command systems also handle complex, critical and clearly defined tasks. But that's where financial technology is different. Financial technology must be built for constant change. Being able to detect and act upon change faster than the competition is the very nature of trading. A system that is built to handle a specific set of tasks simply isn't useful.

Tbricks' team of expert developers stay abreast of ongoing regulatory change, building new functionality to meet emerging requirements as they come to market. As a result, users need never worry that their trading platform isn't compliant with new rules and regulations across all the markets they trade in.

Buy AND Build

With traditional trading technology, change is slow, painful and often subject to the ISV's release cycle. Implementing new functionality is messy, and upgrading to the next version can literally take years. No-one feels comfortable with placing their future in the hands of their ISV's product management team. This is why many banks choose to build their own trading system rather than buy. And that has always been the question: to buy or to build.

Tbricks believes its clients are always better and faster at predicting market trends. So the company decided to make the buy vs. build debate redundant by offering something different; a system that separated the core system from the business logic. That way, Tbricks' founders could focus on delivering a state-of-the-art system with optimised performance and powerful trading apps to those who wanted an out-of-the-box system.

By delivering all apps complete with source code, Tbricks also greatly improves time-to-market for those who wish to customise the system. Tbricks' founders spent two years perfecting a platform for the tech savvy trader who needed to build complex algorithms and trade at ultra-high speeds.

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About Tbricks

Tbricks provides the next-generation trading system that empowers the professional trader. Tbricks delivers an open, solid and very fast core platform complemented by a rich set of trading apps. Tbricks supports premier trading and market making institutions in Europe and North America.

For more information, visit www.tbricks.com

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