Trading Platforms Are Now Core Technology. Are they keeping pace with evolving trends?

Trading platforms have become the central feature of the financial architecture; they are complex to install, cumbersome to manage and expensive to evolve. Now at the centre of the data value chain within the organisation the quality and quantity of data is an asset. It needs to managed and nurtured, but cannot be ignored. Better business decisions come from access to better quality of data delivered reliably.

Now they are at the centre of the architecture, are these applications capable of supporting the enterprise wide landscape? Or do they remain siloed in their application first and only view.? Technologies are arriving at pace into the market that can support the enterprise-wide initiatives that organisations now demand.

Financial institutions have been navigating through a myriad of regulatory and cost pressures, the need to accelerate deployment, embrace agile technologies, and the requirement to make important decisions based on enormous volumes of data in real-time. These increased demands are stretching the capabilities of most technology groups and their trading architectures to deliver value to the business groups. However, it does open up possibilities to invest in the new emerging technologies to obtain that competitive advantage that businesses are seeking.

The increased importance of data, whether exploiting it or protecting it, is challenging trading platforms. Increased regulation has increased the volume and complexity of data, which these systems have been able to deliver, but not manage efficiently. The large data repositories created for and spawned from the Trading platforms are becoming cumbersome, and requires housekeeping and data recovery strategies need to be revisited.

Trading application vendors are having to consider public cloud solutions, effective use of containerisation and the promotion of agile and self-service working environment. These techniques and technologies are pushing hard up against trading application technologies and demanding attention.

What's happening in the vendor space?

Trading platforms have moved swiftly in the markets perception from a point solution for specific asset classes and business processes to be an agent for change for wider business transformation; these applications are now at the heart of architecture, and are intrinsically linked in the end-to-end flow of data within an organisation.

Are these applications going to be able evolve to include self-service, virtualisation and the scalability of cloud or will clients adapt their existing implementations to incorporate the new technologies; the demand is there from both technology and business groups to maximise the benefits from the technology.

Vendors of trading platforms are caught betwixt and between, in a desire to protect their current technology without becoming legacy, whilst following the client and sector demand. They are also

caught by the commercial demand; the adaption of the commercial model based on a siloed application to a model based on an "at seat price" for a complete trading solution, incorporating multiple vendors but with a single point of responsibility.

To access powerful computing capability on demand, enabling the speedy delivery of new products and services, financial institutions are increasingly turning to cloud-based solutions. This offers flexibility and scale to the businesses, meaning they can rapidly adapt to market shifts and provide higher value to customers.

On-premises platforms are beginning to struggle with large end-to-end architectures that require agility and scalability, however the investment needed to evolve to micro services and cloud technologies is restricting the embrace of these technologies. Institutions are not waiting for vendors to deliver a cloud based solution instead using the available public cloud offerings and existing deployment technologies to lift and shift applications to the cloud.

An international bank with a large retail base could not wait for the vendor to evolve a cloud solution. The business pressures were too great, the need to be able to deploy and scale environments rapidly to support a global rollout of the application.

Supported by deploying Ansible and Delphix they executed a lift and shift of the trading application into an Amazon cloud.

The majority of trading application vendors have a single approach to cloud solutions making their applications cloud ready. But where a cloud native solution has been embraced, with advantages of flexibility and scalability, they have also had the opportunity of new support and commercial models, through the platform as a service. A European energy organisation reviewed its approach to development and deployment of their current on-premises trading application. It concluded the similar message to all trading application owners; expensive to implement, expensive to run and this technology is time consuming. The business required a scalable, flexible solution for both storage and compute power. Driven by a technology infrastructure change, the business drove the desire to reset the relationship with multiple vendors to have a single point of delivery from a cloud based solution. The incumbent vendor had developed a cloud native service, based on a public cloud solution, that provided a single point of purchase for the end-to-end solution.

Reproducing Production

Business groups are constantly demanding improvements in the quality and velocity of data passing through the whole enterprise, pressurising technology groups to be able to create test and development environments that straddle multiple applications and databases, and work with data sets that are co-ordinated to a single point in time.

The business managers and application owners have been demanding this as a measure to improve the quality of data, code releases and reduce the outages in production. The coordination exercise of aligning the deal execution, capture, management and accounting platforms, all with the same set market and static data is time consuming and often beyond the capability of the existing technology.

Virtualisation tools and containerisation technologies can provide that opportunity to coordinate and stand up environments with multiple sources quickly, creating a timeline from a single point in time. In effect it takes a snapshot of environments and keep them aligned.

The time taken to stand-up multiple databases in a single snapshot can be reduced from days to minutes; a binary can be refreshed from a virtual copy to a specific point in time within minutes. This removes the reluctance of developers to release those cared for environments with an aged binary, but still good enough to develop. Now with self-service these environments are delivered on-demand eradicating another potential quality issue.

These tools have the capability to create a time series of data, to stand up environments at specific points in time, and store those snapshots, giving application owners agility that has never existed before. This now becomes more interesting for application owners and testing teams. Some trading system vendors they can do as a standalone exercise with the ability to move along a limited time horizon to evaluate cash flow and risk positions, but a time flow of data over an infinite period, without having to manually adjust system parameters is even more interesting to applications owners. Middle Office functions such as Profit & Loss Attribution can be executed simply by moving up and down the time line. The recreation of stress scenarios for the risk group are now controllable, rather than being a piece of the end-of-day batch that frustrates everyone when it fails for a small misplaced piece of market data. Now, simply re-wind, correct the data and replay the scenario.

This capacity to reproduce multi TB production-like end-to-environments changes the game of application management.

An organisation trades complex fixed income instruments that requires complex accounting processing. The accounting rules for these products have to be coordinated between the trading application and the downstream accounting systems, and requires detailed quality assurance and testing.

The nature of the testing is destructive and requires multiple cycles to achieve the required approval, hence the creation of environments is repetitive and time consuming and affects the quality of testing. The capability to move along a Timeflow in the containers allows the destructive testing to continue but gives the opportunity to move back to an agreed point in time

Securing Data

As important as achieving a quality of data for an application is the capability to secure the data from unauthorised access. This is driven by both regulatory need and an increased awareness of security breaches meaning data masking comes high on the Chief Information Security Officer (CISO) agenda.

The CISO drives the conversation as part of the enterprise vision and strategy to protect information and the obfuscation requirements are defined at an enterprise level. The application owner has to interpret those requirements for the trading application.

The nature of trading platforms is that they are dynamically combining static and calculated data, with workflows that manage the flow of the data to match the business requirements. Here lies a challenge for the solution, and the masking strategy of an organisation.

If we take step back, the majority of implementations of the rules and formulae that control vendor systems has been designed without thought to data masking, as it is only in the past few years that this topic has re-emerged. Organisations are now having to retrofit requirements into an established production application to meet the rigid, static, requirements of obfuscation. This often

means multiple locations for single referential information, that is used at several of the integration points, masking solutions, therefore, should strive for referential integrity.

The complexity of the business requirements for workflows often means that formulas have been hard coded with organisational data that fall within the requirements.

This means the interpretation of these requirement when added to the trading application dynamic moves the masking solution away from a pure technology exercise to one that needs to consider existing support and change management processes.

A global trading house required any data passed to an external organisation should be masked in accordance with the security mandate.

This mandate included the masking of client and counterparty information but also organisational data such as entity and portfolios.

The trading application had been configured to dynamically creates the portfolio assignment depend upon trade characteristics. So when the reference portfolio database was masked the workflow rules would fail. This reduced the functional capability of the application and impacted the quality assurance process.

A triage process was introduced to the support process that evaluated what data needed to be exposed, and the risk of exposure assessed for an incident. This would determine the amount of data to be masked.

Masking data can be a straightforward technical process, finding and replacing data by using sophisticated algorithms. The more intelligent masking solutions can inherently retain referential integrity, providing a solution that is robust and repeatable in short timeframe.

The vendor of the trading application is often best placed to produce an obfuscation solution given their understanding of the data model and the capability to alter the binary. However, they are often in the same place as the client. They did not consider the impact of masking across a data model that held together by evolution rather than design, and they are retrofitting too.

Should the vendor achieve a solution for masking its value is limited the solution need to be enterprise wide because we are really trying to solve a regulatory issue, which impacts the whole business. Siloed solutions lead to siloed answers.

Time is well spent investing in creating a masking road map that can start looking at the trade-offs necessary between hiding data and retaining a functioning application for non-production. It would look to answer these basic question; what are we trying to solve, and what do we want to achieve, and for whom?

Improving Deployment

The approach to installation of trading platforms has followed the same pattern implementation after implementation; multiple work streams needing multiple test, integration and development environments.

Projects have tried to introduce a strict development approach to the implementation but this meets with resistance from the vendor and the way the application is configured and operates. Methodologies, like Prince, are introduced to manage the process to provide a reporting basis for steering committee. Agile is considered to increase delivery and ownership at a more granular level although it has done little to change the implementation philosophy. Moreover, it has almost no impact on the timeframe or cost of project; they still take too long and they still cost too much.

As the favoured child, the agile methodology in its various shapes, still persists. The approach of multiple sprints perpetuates the deployment of increments in configuration and binary. In reality you end up in multiple environments, running in parallel, as the sprints elongate beyond the Scrum Masters timeframe.

The usual solution to mitigate extending timelines is to ensure that the project teams are full of seasoned implementation specialists that know the tips and tricks to keep to budge t and schedule. An alternative approach may be to accept how these applications are implemented and use tooling that can reduce the timeframe, whilst creating solutions that are valuable to the on-going support of the application.

In broad terms, as part of the whole project the effort to test is over 25% of the timeline for a greenfield implementation and over 60% for an upgrade. Of that significant time is spent waiting for environments to be prepared / repaired or made available, generally labelled as contingency. Introduce a self-service, automated, one-click culture and the responsibility reverts to analyst or developer to get the tools they need to execute their tasks. Database Administrators are released from the monotony of environment preparation and release, to focus on the value add tasks of performance and application tuning of applications.

An organisation, with its central role in facilitating the exchange of securities, payments etc., has a constant need to make technology changes to support the evolving market need of its members.

The installation of the trading application is complex, and stretching the limits of the application. This draws increased demands of the quality assurance and testing team this demands are to reduce the timeframes of testing but maintain their quality.

The introduction of a virtualisation tool, together with the ability to optimise processes reduced the time to market of developments significantly. The introduction of self-service allowed the QA analysts to take control of the testing cycles, and shortened these by 30%

Changing Perceptions

Trading platforms are, and have always been, under the spotlight because of their cost and complexity to install and run. Historically they have been able to fend these off these doubts because of what it offered was a sea-change over the green-screen monolithic applications they replaced. Flexible and broad based in their functionality offering the generic 80% solution and cementing themselves centrally to the architecture. Now those same applications are starting to be viewed as those green-screen monsters; they have become large and complex and over-stuffed with data. Their complexity has been driven by the vendors' desire to meet client requirements, and the regulators need for information. Focussing on functionality vendors have not evolved their underlying technology.

In parallel, financial institutions are slowly believing that the emerging technologies; public cloud solutions, containerisation and the agile and self-service working environments employed by their peers in other industries are here to stay. They have proven that they can contribute to the bottom line, by improving the quality and reducing the timescales of deliveries.

These two fundamental truths are now merging in the CTO and application managers' roadmap. The business is driving the technology charge and the technology groups are having to respond. They are responding by combining containers, virtulisation, cloud, micro services etc., into their

architecture and only the forward thinking vendors are really embracing these for their clients. The others rans are driving the client to a much broader solution for the enterprise.

The benefits that can be gained by employing the right tools, software and processes are significant. The financial markets are as commoditised and heavily regulated as they ever have been and the underlying methods for remaining competitive have shifted. Capital markets players have to be able to deliver rapid change of a higher quality and at a reduced cost through their core trading applications. This begs the question: Does the cross-asset, front-to-back trading enterprise solution still have a place in today's world?

Well, yes. The standardisation of capital markets activity means that it makes sense for financial institutions to operate a majority of their business through a system which gives them a single point of truth. However, the only vendor solutions that will last the pace in this rapidly evolving market are those who ensure they can work seamlessly with trends and technologies enabling micro-services, cloud, DataOps, AI and automation. Those who do not will remain exorbitantly expensive to implement and run, hampering the business's ability to drive through timely and cost-effective change.

About FWD View

We are a business outcome focused company providing technology and process transformation services to the global financial markets. We partner with industry leaders and innovative software companies, setting the agenda to exploit accelerating and converging technology trends, in the context of shifting business expectations.

We seek differentiation in an increasingly commoditised and regulated market working with clients to bring agility to applications – we support our clients to SIMPLIFY, INNOVATE and ADOPT new technology and processes.

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