Investment bank transformation: from ideas to action
Ernst & Young’s Capital Markets Advisory practice is pleased to present our 2016 industry report, *Investment bank transformation: from ideas to action*.

Capital markets and investment banking is an industry recovering from multiple setbacks in terms of productivity, efficiency, culture, and trust. The industry’s approach to change has historically been too tactical and piecemeal – insufficient to recover the required levels of profitability and return on equity (ROE).

In our prior global report, *Transforming investment banks*, we identified four critical pillars of change, around which successful investment banks will transform themselves, to become efficient, in control, trusted, and digital.

In this publication, through a collection of articles on relevant capital markets topics, we explore key aspects of how banks will effect this transformation, enabling them to (1) optimize their assets and operations, (2) transform culture, (3) become client-centric, and (4) be technology-led.

These articles combine descriptions of successful industry practices, along with the observations and recommendations of our global practitioners in each specific business domain or function. We hope the concepts, road maps, and action steps contained in this report will be useful tools as you progress through this transformation.

Best regards,

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Introduction

by Jonathan Firester

To recover the required levels of profitability and ROE, investment banks will have to transform themselves, to become efficient, in control, trusted, and digital. In our global report, *Transforming investment banks*, we identified the four pillars of change that define this critical transformation:

**Pillars of change**

- **Optimize** both assets and operations – by better utilizing balance sheet and radically reducing costs.
- **Transform culture** by providing incentives for the behaviors that will deliver value for shareholders and clients, while meeting regulatory expectations.
- **Become client-centric** by moving away from product-centric approaches by putting the client at the heart of business and operating models.
- **Be technology-led** by transforming legacy processes, re-architecting to support business model change, and enabling a central focus on clients.

In this report, we've set out to provide a toolset for these changes, by exploring some of the programs and approaches through which successful banks are making this transformation.

We shift from describing and emphasizing the issues and imperatives, to laying out methods by which to approach the necessary solutions in the context of key industry changes. For example, we discuss how to achieve cost savings and other optimization through the shift to T+2 settlement, or during the implementation of necessary collateral management capabilities. We describe how bank data can be reorganized around legal entities, both to meet regulatory requirements and to support future strategy.

Prioritizing the components of this transformation and integrating them into the bank’s appropriate strategic initiatives will be challenging. However, banks that successfully navigate this transformation will take a lead in terms of financial metrics, efficiency, client-centricity, and controls.
Optimizing assets and operations

Though a handful of investment banks noticeably outperform their peers, most banks struggle with productivity and efficiency. Few banks are able to consistently manage the two key metrics of productivity (revenue per employee) and efficiency (cost to income ratio) to desirable levels. Operations, technology, and regulatory compliance have been particularly significant drivers of high cost bases.

To improve these metrics, successful banks will optimize their business portfolios, their balance sheets, and their operating models. Over the past few years, banks have moved away from certain less profitable or riskier client segments and products. Banks have deleveraged their balance sheets and shifted capital away from less liquid and lower ROE asset classes, such as certain fixed income securities. Banks have also striven to diversify their business mix, increasing investments in higher ROE businesses such as wealth management.

However, investment banks have traditionally preferred short-term approaches to cost reduction, and most business transformations have focused on organization rather than technology or operations. This is no longer enough. Faced with a structurally higher cost base, firms must be more creative and radical in their attempts to enhance productivity and efficiency. We see the following areas of optimization on which successful banks must focus: (1) business lines and entity optimization, (2) asset optimization, (3) cost optimization, and (4) operating models, sourcing, and location optimization.

In this publication, we cover four critical areas of cross-functional and necessary transformation that are affecting global investment banks and offer the opportunity to optimize assets and operations as part of their implementation: structural reform, collateral management, T+2 settlement and client onboarding.

- Structural reform refers to the comprehensive transformation of critical cross-business processes, financial planning and controls, and information systems, which most banks will have to undergo in order to meet regulators’ requirements for Recovery and Resolution Plan (RRP) submissions and heightened supervisory expectations. The regulations driving structural reform are to enable systemically important financial institutions to be resolved in an orderly manner without the need for public support. However, the changes being driven by structural reform will also contribute to better business as usual (BAU) controls, management information, and financial health.

- Cross-firm, integrated collateral management has become increasingly important to asset optimization, as well as an operational strength and a profit driver, in addition to a regulatory necessity. Successful investment banks are focused on redesigning their target operating models, implementing robust governance and controls, and enhancing their data and technology infrastructure to support enterprise-wide collateral management.
The industry shift to T+2 settlement is the culmination of a multi-year, coordinated effort driven by the Depository Trust Clearing Corporation (DTCC). To meet the target migration date of Q3 2017, investment banks will need to transform many aspects of their operations and supporting technology and introduce numerous efficiencies.

Finally, client onboarding is a critical interaction point for both new and existing clients, which can greatly influence the client experience, client profitability, and business process effectiveness. While regulation and multi-product relationships have made onboarding more complex, a comprehensive strategy around data, use of vendors and utilities, organizational positioning, and use of key metrics can make onboarding efficient, client-friendly, and a source of competitive differentiation.

Structural reform, collateral management, T+2 settlement, and client onboarding are significant and complex transformations necessary to multiple capital markets businesses within the bank. Successful investment banks will plan and implement these programs in a manner that optimizes assets and operations, and captures cost savings and efficiencies.

In addition to the detailed themes that we are covering in this publication, there are other important trends and opportunities for investment banks to drive optimization as they undergo this industry transformation. Two that are worthy of further discussion are strategic transfer pricing and industry utilities.

Strategic transfer pricing is an important capability within banking organizations to appropriately allocate the cost or benefit of funding and liquidity. Funds transfer pricing has always been an important measure to define product and desk-level incentives, contribute to risk management, and remove potential intra-firm arbitrage opportunities. In recent years, regulators are increasingly scrutinizing bank transfer pricing from a controls and risk management perspective. Transfer pricing should attribute to each business the full costs of its use of funding, calculated based on aspects such as tenor/duration, liquidity, and implications under a stress scenario (including cost of holding liquid asset buffer). Transfer pricing should also encourage product businesses to take on prudent and profitable risks, and price them accordingly.

Successful banks will also streamline their operating models, manage down complexity, and lower fixed costs by outsourcing appropriate functions to vendors, industry utilities, or member-owned consortia. Investment banks have launched various utilities to support functions, such as post-trade processing, reference data, and client onboarding. Choosing which functions to outsource can be based on strategic considerations, costs, and separability. To the extent a function does not provide competitive differentiation, or admits economies of scale, it may be a candidate for a utility serving multiple banks. Banks must also consider the costs of transitioning to the utility, the expected unit cost savings, and the fixed costs that will not go away when the function is outsourced. Some risks may be mutualized as functions move to utilities, while outsourcing other activities may leave the bank still holding the related exposure or liability.
Transform culture

While the regulations, technology, and transaction volumes of capital markets businesses have changed dramatically, many aspects of capital markets professionals’ business relationships, performance incentives, and culture have not. For example, competitive differentiation in certain businesses still depends on the expertise and professional relationships of key individuals, such as traders and salespeople. However, changes such as electronic trading, central clearing, and increasing price transparency in certain asset classes have the potential to disrupt this model.

Performance incentives for front-office personnel have historically been revenue-based and specific to their product or region. Multi-product, firmwide client relationships and new profit, risk, and capital-based metrics have begun to alter the structure of compensation, bonuses, and other incentives. Finally, weak controls and certain employee behaviors misaligned with delivering client and shareholder value have hurt the reputation of investment banks and their industry. Banks are addressing this with changes to their practices in terms of employee management, accountability, incentives, training, and hiring. Investment banks will also need to rethink their risk-based performance management and transfer-pricing frameworks to drive the right incentives at the trader/desk level within the organization – and eliminate or minimize arbitrage opportunities.

Successful investment banks will smoothly transform their culture to regain the full trust and approval of clients, regulators, and other stakeholders. They will align culture to optimally support business models dependent on firmwide, holistic client relationships and technology-led differentiation. Transforming culture will require (1) shaping and strengthening employee engagement, (2) honing and aligning compensation and other incentives, (3) implementing appropriate controls and surveillance, and (4) maximizing productivity with technology, training, and other tools.

In this publication, we look at the equities research business model and culture, which is simultaneously a significant and expensive source of competitive differentiation, an example of high-performing human capital, and a nexus of senior, professional relationships that crosses multiple products. Although various forces, including technology, recent regulation, and cost pressures threaten to overturn the current form and economics of research, the present model has remained remarkably resilient. Successful investment banks will strive to manage, support and optimize their research franchises and culture through appropriate controls, incentives, and technology, while simultaneously creating options for themselves in the event that the research model changes.
**Become client-centric**

As the current regulatory and expense environment has increased the pressure on capital markets product profitability and added constraints to resources such as balance sheet, investment banks have been forced to focus on their most valuable and strategic clients. Successful investment banks will increasingly need to measure, manage, and optimize the profitability (and return on balance sheet) of their most important clients. To do this, banks will aggregate and analyze clients’ transactional and behavioral data, coordinate sales and service teams across different products, and continue to invest in sophisticated, multi-product online client portals. These forces, as well as a lingering public perception that banks have not put their clients’ interests sufficiently first, will drive investment banks to become more client-centric.

To enhance client-centricity, successful investment banks are investing in technology to aggregate and access holistic, firmwide client data, to understand clients’ use of products and services across businesses, geographies, and different technology systems. Banks must also adopt global methodologies so that clients doing business in different regions are not treated differently in terms of their profitability to the firm. Using this data, banks must create metrics to assess the current and potential value of different client relationships, as well as the potential financial constraints affecting them (e.g., LCR, leverage and ROA).

Successful banks will segment their clients to tailor product and service offerings based on their needs, size, growth, and use of distribution channels. Banks will coordinate across the entire client life cycle, including compliance, onboarding, documentation, content delivery, transactions, and post-trade reconciliation and reporting, to enhance the client experience, whether it is delivered through service representatives, an online portal, or other channels. Doing this may require breaking down internal hurdles to maximizing firmwide client profitability, such as single-product views of client activity, or differences in accounting treatments across business units.

Clients are also demanding more transparency into how their investment banks measure and assess their profitability. To the extent that clients understand that they are also competing for scarce balance sheet and other resources, they are interested in knowing how they can maximize a mutually profitable relationship with the bank. For example, this transparency may lead to reconfiguration of the portfolio that they finance through a bank’s prime brokerage unit, or reallocation of execution revenues.

In this publication, we look at client profitability broadly, including the challenges and opportunities related to measuring and managing multi-product client relationships, data aggregation, client profitability, and sales coordination. These include the technological challenges of assembling and combining data from multiple, sometimes disparate, technology systems, as well as the financial issues of which revenues and costs to include in profitability analyses. We also explore how successful banks are using this information to inform, motivate and coordinate various sales teams, and to focus and manage individual client relationships.
Successful investment banks must shift from reliance on staff as the primary differentiator to utilization of technology in a more strategic manner. In a more commoditized, risk-averse future, the capacity of staff to innovate to drive revenues will be limited. Instead, cost-to-serve, speed of execution, and quality of service—based on technology—will distinguish the leading investment banks. As a result, we expect that, beyond the advisory and underwriting businesses, the largest share of costs in the future will continue to be that of technology.

The transition to a technology-led business will not be easy, and budgets will be stretched. Capital markets technology systems are bursting at the seams. The last 15 years have seen some significant market restructuring, takeovers, business exits, and substantial volume increases, but investments in technology have lagged behind, and information technology (IT) departments continue to be under pressure to do more for less every year. Furthermore, global banks typically spend about three-quarters of their IT budgets on systems maintenance, rather than on investment. However, successful investment banks will use salary optimization, operating model efficiency, and supply chain enhancements to free up funds for technology investment, and reallocate their spend from technology maintenance to strategic investment.

Banks must make coordinated strategic decisions about where to invest in their technology, and in doing so, support critical changes in their business and operating models. We believe there are four key categories that merit significant additional technology investment over the next few years: (1) supporting business transformation; (2) aggregating, analyzing, and managing data; (3) strengthening the controls infrastructure around technology and protecting it from cyber threats and other risks; and, most critically, (4) rationalizing and integrating legacy technology that cannot keep up with current business needs. In addition, successful banks will stay abreast of relevant new technological opportunities and create options through modest investments in new technologies.

In this publication, we discuss three areas of technology investment that fall into these categories, which are related to critical business, regulatory, and risk requirements:

- legal entity data management, enabling the new futures commission merchants (FCM), and controls on dark pools.
- Recent regulations require banks to measure, manage, and plan their businesses on a legal entity basis, and many banks have changed their legal entity structures due to strategic, capital, or cost considerations. Bank data, however, has generally been managed and processed on a product or business basis—incongruent with legal entity-based requirements. Restructuring data governance, processes, and applications around legal entities is a large and complex undertaking, but critical to banks’ success in the current regulatory and capital environment.
- Investment banks are seeing FCM business profits fall under the current regulatory and capital framework. Returning FCMs to profitability will require coordinated changes to technology, margin offerings, product mix, and client service. Providing a competitive offering requires overcoming the increased operational and technological burdens to support both the existing listed futures business and the new, cleared, over-the-counter (OTC) derivatives business.
• Dark pools and other alternative trading systems (ATS) have become a key part of electronic equities trading and market structure. However, concerns about their treatment of different types of investors, the potential for “leakage” of investors’ trade information, and questions as to whether they can be improperly manipulated have led to various regulator, client, and legal inquiries. To maintain client and regulator confidence, investment banks and other dark pool operators must invest in sufficient controls, assessment and monitoring, and testing of dark pools and other electronic venues to confirm their stability, quality and adherence to market rules.

Designing, implementing, testing, and managing the technology related to legal entity data management, supporting new FCM business models, and operating dark pools are necessary technology spends for many investment banks. Making these technology investments efficient and effective will require coordinated planning and execution among technology, business, risk, compliance, and other bank stakeholders.

In addition to these three specific technology-related themes, there are other emerging technologies that may enable successful investment banks to differentiate themselves and minimize costs. Four that merit further discussion are process automation, workflow tools, electronic market platforms, and disruptive technologies.

• New technologies for process automation have emerged, some of which do not require replacement of the legacy or manually operated applications. These “data robots” may handle tasks requiring use of multiple, manual-entry systems, record lookups, data entry, decision trees and other work previously handled by a service representative. These may help banks to automate a wider array of repetitive activities.

• For processes that require often complex human interactions, successful banks will increasingly use workflow applications to increase efficiency, tracking metrics, and controls. These applications can automate the many handoffs, approvals, escalations, and recordkeeping tasks associated with a multifaceted process, such as onboarding or credit approval.

• Electronic trading platforms are playing an increasing role across a broader set of trading markets. While electronic equities trading venues are already well-established, other asset classes such as fixed income are starting to trade through electronic platforms that mediate requests for quotes, price discovery, and trades themselves. Increasing use of electronic platforms will improve price transparency, lower spreads and transactional costs, and increase trading volumes.

• Successful investment banks must also develop strategy around potential “disruptive” technologies – those that could overhaul an entire business model, or cause step changes in the costs or timing of key processes. An example might be blockchain technology, which enables a shared, trusted transaction ledger not requiring a central counterparty, and which could completely change certain clearing and settlement processes. For such potentialities, banks need to invest in building knowledge, forming alliances with relevant innovators, and creating technological optionality around potential industry-changing technologies.
**Prioritization of investment bank transformation activities**

Each aspect of this investment bank transformation will be a significant and firmwide initiative, and many of them are interdependent. For example, centralizing certain functions will enable the structural reform necessary to meet RRP regulation, and lowering the legacy costs of complexity will help fund the investments to make technology a differentiator. Just sequencing and coordinating the critical components of this transformation will be a challenge, which must be individually guided by the specific strengths, finances and situation of each investment bank.

Managing an investment bank into the future will not be easy. However, sustainable profitability and ROE will accrue to management teams who can prioritize and complete this transformation across the four pillars of optimization, culture, client-centricity, and technology.
Optimize assets and operations
Structural reform and the new age of the COO

by
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Abstract:
After the US regulatory agencies found shortcomings in banks’ 2013 Resolution Plans, they provided firms with specific areas of feedback and defined heightened expectations to meet regulatory demands for the 2015 submission. This has resulted in firms realigning their focus on the evolving structural reform agenda. The Federal Reserve Board (FRB) also released guidance on key capabilities required for large firms to incorporate in their Resolutions Plans, focusing on the following capabilities: collateral management, payment, clearing and settlement activities, funding and liquidity, management information systems, and shared and outsourced services. To align these capabilities with the broader strategies of the firm, senior management has taken responsibility for the development of these core capabilities; the implementation and execution will be driven in large part by the COO’s organization. With this in mind, COOs will need to expand their focus on operational efficiency with an increased scrutiny on resolvability risks in the near term, while improving their resolution plans to enhance performance and credibility over many years.

Structural reform and COOs

By refining the requirements for banks’ Recovery and Resolution Plans, the Federal Reserve Board and other regulatory agencies have communicated heightened expectations for what constitutes a credible resolution plan going forward, driving more attention and action within organizations. To address the shortcomings found by the regulators in firms’ 2013 Resolution Plan submissions and to meet the requirements set out in the FRB’s heightened supervisory expectations, most large firms will continue to undergo varying degrees of structural reform – to enable continuity of their most critical cross-business processes, financial planning and controls, and information systems in stress or resolution scenarios. For many firms, structural reform has become one of the primary focus areas for senior management at the product, divisional and corporate levels. Members of senior management are taking on responsibilities to define, operationalize, document and enhance key capabilities across their financial, operational and technology organizations, which will further enable the firm to operate in times of crisis and, more importantly, transform the firm to optimize efficiencies and create a more sustainable future.

Structural reform will become a key dimension of the COO’s roles and responsibilities. Although the structural reform agenda has been driven by senior management and various functions, including finance and risk, the COO will be impacted by the numerous, required, operational changes. Successful firms and COOs will coordinate, plan and execute structural reform in a way that not only meets the Principles and Practices for Recovery and Resolution Preparedness\(^1\) requirements, but also results in improved business as usual (BAU) processes across key operational capabilities, while improving transparency with clients and shareholders through effective communication.

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Structural reform challenges: balancing regulatory expectations with competing priorities, increasing project complexity, and larger investments

Although the required components of the structural reform agenda seem rather straightforward, the implementation is continuing to become more complex and costly, cutting across multiple jurisdictions, legal entities, business lines and corporate functions. Regulatory agencies have asked firms to create more credible resolution plans, emphasizing less complexity and more resolvable capabilities.

The FRB-issued guidance in January 2014 (SR14-1)\(^2\) outlined specific capabilities that the largest US banks should maintain for effective recovery or resolution preparedness. These key capabilities cover:

- Collateral management
- Payment, clearing and settlement activities (PCS)
- Funding and liquidity
- Management information systems (MIS)
- Shared and outsourced services

To emphasize the importance and priority of these capabilities, the FRB plans to assess firms across the capabilities, incorporating these reviews into its ongoing supervisory work and horizontal peer comparison.

As a result of the regulatory pressures, firms have launched multiple projects aimed at enhancing or remediating capabilities required to support resolution planning. In early July 2015, the public gained a limited view into the scope and magnitude of these projects as the public sections of 12 firms\(^3\) resolution plans were released. Firms made various commitments toward improving resolvability, ranging from structural changes to legal entity and booking models and documentation of such enhancements through playbooks, to the enhancement of operations through improvements to MIS reporting. These disclosures demonstrate a commitment by these firms to improving the credibility of their resolution plans.

Through the lens of the structural reform agenda, firms are undergoing significant overhauls of their operating models, addressing antiquated operational capabilities, siloed processes, limited traceability and accountability, and a lack of readily available information to support key business decisions. COOs continue to face the challenging responsibility to improve operational capabilities and efficiencies while also simplifying organizational structures to create more resolvable firms. Projects associated with structural reform face an ongoing struggle to balance competing tactical and strategic goals associated with cross-line of business initiatives, along with competing regulatory requirements and shareholder expectations. A COO’s ability to maintain a strategic, long-term view will lead to successful implementation of the required capabilities to support a more resilient firm.

In managing projects of this size and complexity, which capabilities should be prioritized? Who determines when the project is complete? And has a blueprint of the end-state vision been sufficiently defined, especially given the time and related expenses? These are the questions firms should consider when preparing to address structural reform. While tactically addressing the regulatory requirements will achieve compliance, taking a strategic approach will achieve broader business and efficiency objectives. The COO’s role as the “change agent” enables him or her to drive priorities across the firm and use the structural reform agenda to effect change across the organization.


Historically, COOs have ranged from senior administrators to co-managers of businesses, depending on the firm's culture and individual executives. The ability to navigate the organization, as well as familiarity with existing processes, will enable the COO to stay on top of the core capabilities that need to be built or enhanced through structural reform. The five focus areas, aligned with the aforementioned SR14-1 capabilities, are detailed below:

**Collateral management**

Collateral management is a core business issue for many reasons, including the increased demand for high-quality collateral, especially in stress, more constraints on the use of collateral, and the likely increased need for collateral stemming from new regulatory changes regarding uncleared OTC derivatives. Collateral management operations, historically siloed within lines of business, have been challenged by these changes.

The structural reform agenda is adding complexity by requiring firms to have a better handle on and view into the sources, uses and locations of collateral. Firms will be required to understand the legal entities and geographies where counterparty collateral is held at the end of each day, have documentation for netting and rehypothecation arrangements with all counterparties, and ultimately have better information around collateral exchanged between affiliates. Firms will also be required to maintain up-to-date records on collateral-related triggers and other material terms included in master agreements (e.g., ISDA, credit support annexes) that could potentially be activated in the event of a change in market conditions. Finally, firms will need to forecast changes in collateral values under a variety of stress scenarios.

Although already a priority for many COOs, these additional collateral management requirements will push firms to strategically transform their collateral management processes. Firms will need to coordinate across disparate source systems and lines of business to centrally manage collateral and to improve the sourcing and reporting of collateral. Over time, this will create a more advanced collateral management system, which will enhance a firm’s ability to better understand what its immediate and pending obligations are and how those obligations can change during a stress scenario.
Payment, clearing and settlement (PCS)

The regulatory ask is simple with respect to PCS and financial market utility (FMU) reporting, but the response is complex. Firms are now expected to report exposure and obligation information by FMU on a legal entity basis. In instances where market efficiencies have created complexity in order fulfillment and netting of obligations, firms struggle with the ability to trace the downstream, netted, PCS obligations to the originating source. This challenge is more manageable for firms that have grown organically rather than through acquisitions and that use streamlined trade-processing systems and data warehouses across their products, businesses and jurisdictions.

To meet these requirements, COOs will need to better manage and understand their legal entity structures and interconnectedness. This will require significant investment in the development of firmwide and legal entity-specific management information system capabilities to provide insight into, for example, funding and liquidity available on a legal entity basis or collateral requirements and exposures to various PCS systems.

In addition to PCS reporting complexity, firms are also tasked with creating contingency arrangements for FMUs. In many cases, there are no viable alternative FMUs for a specific product or trade type, or any viable contingent third-party access to FMU services. The role of the COO will remain at the forefront of change related to continuity of access. It will be important for COOs to understand membership obligations, including the collateral requirements for all FMU exposures, prefunding and intraday funding to support access to FMUs. COOs must educate themselves on FMU operations in order to face off with the supervisory authorities to determine a pragmatic solution to implement continuity of access. There are several mechanisms that the COO will need to put in place, which include enhanced FMU reporting, front-to-back communication protocols, and playbooks that identify the actions an FMU may take and how the firm would likely respond to support continued FMU access during these scenarios.

Funding and liquidity

Capabilities regarding funding and liquidity are a high priority. Firms are undertaking multiple projects to create stand-alone, legal entity balance sheets and to develop capabilities to identify funding sources and uses at the legal entity level. This will enhance the tools used by COOs in managing their businesses and the role the treasury function plays in supporting daily operations. To support this analysis, firms will require enhancements to the underlying infrastructure to forecast daily and intraday liquidity movements under scenarios ranging from BAU to resolution, and to incorporate resolution scenarios into their liquidity risk-management framework.

In order to evaluate the liquidity needs of material legal entities through resolution, firms must demonstrate the capability to produce a variety of outputs under a range of stress scenarios. COOs have been tasked with developing a
deeper understanding of their funding and liquidity capabilities, tools and data. This includes a firm’s ability to manage and control intercompany transaction arrangements; monitor and control liquidity risks at the individual, legal entity level across the group as a whole; assess funding flow frictions across legal entities under stressed conditions; and forecast legal entity balance sheets for a variety of scenarios. These tools, including pre-positioning liquidity, can better inform COOs and treasurers about resolution capabilities and also drive structural changes in balance sheet and legal entity planning.

**Management information systems**

MIS can help firms solve a host of issues to support business decisions and improve resolution capabilities. MIS is also a required capability to support decision-making during a stress scenario. MIS is a component of the solution that holistically addresses all heightened regulatory expectations across various areas. While most firms already have developed MIS capabilities, structural-reform-related requirements add complexities around granularity, frequency, completeness, consolidation and scope of data. Relevant data must be available at the legal entity level, sufficiently updated and aggregated across all necessary systems. The MIS required to support resolvability impacts financial, transactional and operational systems. It also spans across jurisdictions, legal entities, businesses and functional areas.

The surprising element of MIS requirements is that very few are focused purely on resolution. Rather, MIS needs to answer whether firms have the capabilities and information across their operations to understand their current state and make decisions. Many firms have identified MIS as a key deficiency and initiated many projects to improve certain components, including service level agreements (SLAs), third-party contracts and collateral management.

To resolve MIS deficiencies, most firms are leveraging and enhancing existing BAU infrastructure and capabilities to support stress-reporting requirements rather than creating new infrastructure. In an environment where data is a fundamental component of multiple regulatory changes and business operation concerns, COOs must play an active role in defining and prioritizing required technology and data enhancements. COOs, along with technology leaders, will be required to review their existing architecture against required capabilities, evaluate their ability to support the MIS requirements in resolution, and ultimately develop a plan to remediate any gaps.

COOs must also strive toward globally integrated data management and reporting systems to achieve consistency across businesses and geographies. A robust resolution planning architecture will increase a firm’s efficiency, improve BAU processes and enhance its abilities to rapidly generate accurate and comprehensive reports for oversight functions. The architecture should address reference and transactional data, multiple consumers (internal and external), drill-down capabilities, reconciliation/traceability and controls. MIS should also support stress-testing and scenario analysis, dynamic forward-looking forecasting, and integration with liquidity and capital requirements.

**Shared and outsourced services**

The complexity of shared services continues to pose a dilemma for COOs. While shared and outsourced services are important to firmwide integration and cost savings, they are an area of focus for regulators in a resolution scenario. Critical shared services are essential to maintaining operational continuity in the event of a crisis. However, gaining a complete and accurate understanding of the staff and costs associated with these services is challenging and often imprecise. Truly understanding interconnectedness and linking the costs of services produced and consumed can be a challenge.

COOs have a number of options available to analyze current-state service models and to define, implement and operate service solutions. Two practices that have been effective are:

1. **Service company solutions** – Design and implementation of a service solution, defining the future state, and designing and evaluating target operating models with an eye toward potential market and idiosyncratic disruptions that can impede the business.

2. **The “Office of Financial Continuity”** – Service solution infrastructure (governance and technology enablement) to help link critical resolvability artifacts, such as service catalogs, playbooks and testing frameworks. The goal is to provide heightened visibility into the nature, cost and people associated with service interdependencies.

These practices will help COOs address questions about the use of shared services related to Recovery and Resolution Planning regulations in terms of funding needs, service agreements and disruption issues. Furthermore, adopting shared services leading practices will help optimize the global utilization of service assets and facilities, which can improve operational efficiency and cost-effectiveness.
Getting structural reform right

Successfully implementing the structural reform agenda will support both a solid and validated resolution plan and create stronger cross-firm operational readiness, governance and MIS. A successful transformation will depend on four foundational elements: legal entity structure and strategy (including shared services), operational readiness, governance and testing.

Legal entity structure and strategy
Legal entity strategy is fundamental to this transformation and is already a focus for most firms as most have reexamined their legal entity structures and have sought to simplify existing legal entity chains to reduce interconnectedness. In some cases, this has meant exiting certain businesses, products or services, or an overall reduction in the number of legal entities to create separability between core and non-core businesses. COOs play an integral role in this process to analyze business profitability in the context of global and local regulations, as well as to understand the operational implications.

COOs are a critical part of effecting the operational change required in the implementation of streamlined, legal entity structures. COOs have supported the migration of businesses across jurisdictions and the implementation of specific regulatory requirements. Structural reform requires the jurisdictional alignment of legal entities with their principal place of business and the implementation of meaningful provisions to enable continuity of operations. In some cases, this has led firms to create new, resolution-remote, shared service entities to provide continuity of access to critical services and personnel in the event of resolution.

Operational readiness
A fundamental part of the COO’s role in the structural reform agenda is to confirm the firm’s ability to effectively resolve itself while maintaining its operational capabilities. Readiness can be driven with a step-by-step process (i.e., a road map) for the preferred resolution plan and the capabilities required to support this plan. The keys to this road map are a detailed guide for stakeholder communications, a governance action plan and a demonstration of the ability to continue critical operations to avoid systemic risk. Many firms have created playbooks to outline these key steps for specific areas of their resolution plans. In certain areas, the playbook framework must link with the testing process to uncover gaps in operational capabilities and identify areas for enhancement (e.g., an ability to produce certain information in a more timely manner).

Governance and testing
Firms will require an integrated resolution governance function, in which the COO will play a key role, to successfully manage structural reform projects. The complexity of making resolution credible and the challenges regarding implementation of cross-functional, multi-year projects require robust governance. By first defining the target operating model, firms can establish governance to develop the infrastructure to support the resolvability plan and the transition
of capabilities to appropriate business owners. Based on their target operating models, firms can detail the necessary processes, data, resources and prioritization to support a credible resolution plan and the firm’s long-term goals. COOs tasked with developing a plan to implement the structural reform agenda will undoubtedly have to balance this with other competing priorities. Reform commitments can be achieved using a governance framework that coordinates new and ongoing initiatives with the ongoing strategic evolution of the firm’s capabilities. Successful COOs will look for opportunities to reduce redundancy and align projects and capabilities that support the firm’s business strategy and contribute the structural reform agenda.

As part of resolution planning, firms are also developing end-to-end testing frameworks to validate, challenge and demonstrate their recovery and resolution capabilities. Tests can range from panel discussions and “tabletop” simulations that discuss expected actions to identify potential risks, to full simulations and “war games” that test individual and distinct operations in unscripted environments. A successful testing framework will enable the COO to understand and remediate deficiencies in existing capabilities in a timely manner. A successful end-to-end testing framework also allows firms to better align BAU and resolution capabilities, e.g., leveraging test scenarios used for crisis management with other regulatory testing such as Comprehensive Capital Analysis and Review (CCAR).

Testing helps firms develop a dynamic structure that allows them to identify roles and responsibilities critical to the decision-making processes, as well as communication and coordination points for access to information, exposure aggregation, decision process flows and escalation protocols. An end-to-end testing framework will enable firms to demonstrate their resolution capabilities to internal stakeholders and regulators and to prove the credibility of their planned resolution strategies.

To do this, COOs need to understand and leverage existing crisis management testing capabilities. MIS will be a critical component of the testing framework, as it will be used across the tests to support and demonstrate the capabilities required. In testing, MIS will help executives determine whether they have the necessary levels of information needed to make decisions in a stress scenario.

**Structural reform and the COO’s priorities**

COOs are well-positioned to integrate business strategy at all levels with the structural reform requirements, such as operational readiness, separability and resiliency. Although the regulatory requirements of Recovery and Resolution Planning create substantial additional priorities for the COO organization and the firm in general, successful firms will construct a structural reform program that weaves these requirements into their broader strategic, operational and efficiency-related transformation agendas. In combination, this is likely to become the top priority throughout the firm. Strong COOs are also knowledgeable about and connected with the many firm functions that will be required to influence structural reform. Finally, the central role COOs play in prioritizing competing projects will be crucial to completing the structural reform-driven transformation successfully in a timely manner while balancing other critical and strategic projects.

**Author directory**

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<tr>
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</table>
The imperative for enterprise-wide collateral management

by

Janina Polo and John Boyle
Regulatory requirements affecting front-to-back collateral management functions make it increasingly beneficial for firms to manage collateral at an enterprise level and move away from business and geography silos. There is an anticipated massive increase in demand for high-quality and liquid assets (cash and non-cash) as a result of mandatory clearing, restrictions on types of securities to accept as collateral, and rehypothecation restrictions, which have led to a decline in available collateral. Cash flow and liquidity have been affected by the increased volume of margin calls required to support existing models. Many financial institutions lack a holistic and fully transparent view of their pools of eligible collateral or are unable to efficiently mobilize collateral to allocate against specific exposures. In response, firms are adopting centralized enterprise collateral management functions, supported by enhanced data and technology infrastructures with operationally consistent processes and real-time capabilities, to increase profitability and reduce operational cost.

**Historical, siloed collateral management**

Historically, collateral functions were performed in silos with each business managing its own collateral typically on outdated, retrofitted or offline technology platforms. Collateral management was viewed as an operational function, separated from the trading activity and generally unregulated. Trading desks retained maximum collateral control, but the downside was ineffective use of the firm’s balance sheet.

Decentralized collateral management processes, unique to the underlying product or business, were typically manually supported through the use of spreadsheets and related applications to provide simple database functionality. Legal agreements were often not integrated and stored independently of the margin management system, leading to inaccurate, insufficient and untimely information. These tools often lacked workflow automation and had limited integration to vendor utilities, increasing the resources required and resulting in inefficient and costly organizational models. In addition, disputes were managed through a reactive approach with reliance on ad hoc reconciliation processes, resulting in either overcollateralization or increased counterparty risk.

However, the collateral management world has changed. Increasing regulatory requirements, the financial crisis and more focus on fully costing trading businesses from a risk, P&L and capital perspective make it imperative that firms adopt effective enterprise-wide collateral management to improve efficiency and maintain competitive advantage, while also complying with diverse regulations. It is expected that the impact of the new capital and margin requirements will cause the cost of collateral\(^5\) to go up by 882%.\(^6\)

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\(^5\) Collateral costs include the incremental cost of borrowing cash to acquire eligible collateral for bilateral derivative trading and central clearing.

Since the financial crisis in 2008, both international and local regulators have taken significant steps toward introducing mandated collateral requirements encompassing derivatives markets, securities financing and other collateralized products to reduce risk in the financial system. The combination of collateral requirements across regulations will require firms to hold a significant amount of collateral for various purposes. Unless there is a rebound in the pledgeable collateral market, the likely asymmetry in the demand and supply in this market may entail some difficult choices for the markets and the regulators. Once final, market participants worldwide will need to comply with these new regulations in a timely and efficient manner. Firms will struggle with how to meet these regulatory obligations and manage their internal operations, given the multitude of legacy approaches to collateral management now in existence.

Despite internal and industry-wide programs to address these regulations, market participants will be challenged to be adequately prepared for the economic, operational and technology infrastructure impacts associated with the regulations. Resource and funding needs to address these requirements will be significant. Defining commonalities across regulatory requirements and integration with others (such as the structural reform requirements for Recovery and Resolution Planning) can help rationalize some of these needs.

Over the past several years, regulators have issued various rules to mitigate risk, improve transparency in the markets, and limit excessive systemic risk posed by transactions, markets and practices. Collectively, these regulations have had an overhauling impact to collateral and risk management functions, requiring the need to redesign processes and systems. While many impacted organizations have mobilized internal and industry-wide programs to address these regulations, much uncertainty remains as to whether market participants can be adequately prepared for the economic and operational impacts of the new margin provisions. Generally, firms launch implementation efforts to address these requirements in project silos, and are not able to identify interdependencies among the rules. The table on page 21 highlights key regulatory themes across various regulations that affect collateral and illustrates the anticipated complexity for implementation. Firms will significantly benefit from having a central mechanism to track and identify such dependencies.

Navigating the regulatory landscape

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Table 1: Key collateral regulatory requirements by theme

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<tr>
<th>High-level regulatory requirement theme</th>
<th>Complexity</th>
<th>BCBS/IOSCO</th>
<th>uncleared margin</th>
<th>Clearing</th>
<th>Liquidity coverage ratio</th>
<th>Net stable funding ratio</th>
<th>Capital</th>
<th>RRPP</th>
<th>Accounting standard (IFRS9/13 and ASC 860/815)</th>
<th>Tri-party repo reform (NYFRB)</th>
<th>TBA margin requirements</th>
<th>Minimum haircut - securities financing</th>
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Key
- Red = High
- Orange = Medium
- Green = Moderate complexity

*(Complexity is illustrative and representative of the anticipated implementation difficulty across people, processes and technology of listed regulatory requirements.)*
Ten principles for success

Based on the experience of our Global Capital Markets Advisory Practice, working on implementation projects with collateral management functions at various firms, we have identified the following 10 strategies that are essential to the success of implementing enterprise-wide collateral management. The first six strategies stress the key operating principles for successful, enterprise-wide collateral management, and the last four strategies describe the critical technology and data components.

**Key collateral management operating principles**

1. Centralized organization: An effective organizational model includes a well-defined governance structure with cross-functional representation led by the front office. The model should maintain a minimum number of locations to support in-region client service and optimize cost. Firms should consider adopting a follow-the-sun global operating model in trading hubs in the US, Europe and APAC, with support and back-office functions in near-shore/offshore locations. This model requires firms to develop consistent processes and workflow automation taking advantage of straight-through processing with limited manual intervention. A global collateral management function provides the foundation for a transparent view of collateral across the firm’s various business processes and promotes cross-product margining and hedging and netting efficiencies. Firms with mature organizational models and centralized collateral capabilities can increase profitability and reduce operational cost.

2. Optimizing sources and uses: Successful firms will develop a strategic approach to optimizing collateral sources and uses to maximize revenues derived from collateral, minimize secured funding costs by increasing internalization, and optimally manage capital. Effective collateral optimization strategies are critical to address the growing cost of collateralizing the businesses that use collateral. However, achieving optimization is highly dependent on the level of sophistication of the collateral data infrastructure and the ability to build supporting cross-product and cross-business line, algorithm-based solutions. Algorithmically optimizing the sources and uses of collateral will enhance the use of balance sheet, reduce funding costs, and increase profitability by providing the capability to determine the least expensive to deliver and identifying where rehypothecatable collateral is located. Any optimization should take into account legal, operational and regulatory constraints on the mobility of collateral across different jurisdictions and legal entities.
3. Promoting central clearing: In continuing a movement to promote central clearing through existing CCPs, firms will reduce credit, operational and systemic risk, albeit at a higher collateral management cost. Higher collateral and capital costs make continuing high volumes of uncleared derivatives activity increasingly expensive. Promoting central clearing is one of the planned objectives of the Basel Committee on Banking Supervision (BCBS) guidance on margin requirements for non-centrally cleared derivatives,9 and jurisdictions adopting the rules are proposing that the initial margin required for uncleared swaps is not less than what a CCP would require for similar transactions.10 Understanding that not all products are able to be cleared, firms should be ready to clear additional product types as CCPs expand their offerings. In addition, the shift toward central clearing will result in more transparent margin methodologies and a reduction in knock-on failures through multilateral netting, as well as reduced capital charges. Firms should recognize the additional benefits of central clearing, such as cross-product margining, CCP access to central bank liquidity, automated operational procedures/reporting, and well-defined default management.

4. Optimizing regulatory and economic capital: Successful firms will continuously strive to optimize the use of regulatory and economic capital. Navigating the evolving capital regulatory environment, which seems to impose higher and higher capital requirements and standards, can be a tall task. Firms should look to optimize models and processes to gain the maximum benefit of collateral, and to reduce counterparty exposures for their internal capital calculations. There are many ways to do so, one of which is to use a regulatory approved model to calculate own estimates of haircuts to avoid the punitive regulatory imposed supervisory haircuts. Procedural enhancements can be made to further aid in the reduction of capital, such as establishing an internal governance and control framework to reduce the margin period of risk (MPOR) increase resulting from illiquid collateral and collateral in dispute. To manage the 8% haircut for F/X mismatch, strict eligibility rules are enforced and firms will need methods for linking collateral to the underlying trades they are intended to cover.

5. Maintaining robust governance and controls: The complex and extensive nature of the regulatory landscape requires a robust, well-defined governance structure across the collateral management life cycle, supported by an internal control framework. The importance of controls is often underestimated, and controls are generally deployed as the last line of defense. Over the past five years, organizations have initiated changes to the control environment via (a) the creation of collateral management committees to provide oversight and guidance for designated areas of responsibility, (b) catalogs of firmwide policies and procedures approved by senior stakeholders and reviewed on a periodic basis, and (c) internal controls and validations to preserve the integrity and auditability of collateral systems and processes. As organizations create and refine new and existing business processes and technology, a governance and control framework is necessary to meet the heightened regulatory and stakeholder expectations.

9 BCBS Guidance on Margin Requirements for Non-centrally Cleared Derivatives, p.3.
6. Enhancing client experience: Enhancing client experience and managing the end-to-end client service experience is challenging in an environment that continues to change as a result of market behavior and regulatory scrutiny. Relationship management and client outreach can be streamlined through a global client service team supported by an integrated service model that interacts with functional groups, including sales, front and middle office, product management, product development, finance, legal and compliance to manage, communicate, own and resolve significant client issues. The team should also be responsible for communicating any forthcoming regulatory changes and the impact of such changes to the clients for the suite of collateral services across transaction types and asset classes.

**Technology and data for collateral management**

Collateral management is a technology-intensive process. Enterprise-wide collateral management requires flexible, consistent, firmwide technology systems that are scalable to meet the needs of the ever-changing business environment. They need to provide accurate and consistent data for various types of reporting, trader dashboards and downstream processing. These requirements include the calculation capabilities to support real-time or near-real-time access to pools of collateral across the firm for securities borrowing/lending businesses that actively trade collateral intraday.

7. Golden source data: Data is the most critical foundational component of an effective collateral management operating model. Successful firms will develop a “golden source” for collateral data, a centralized, cross-product data repository that securely sources and stores information from front-to-back systems across the collateral life cycle. The repository is key to optimizing businesses’ use of collateral, accurately managing margin, and reducing collateral discrepancies. The data includes legal agreements, positions, custody and jurisdiction information, market data, risk data and settlement information. It must be easily retrievable to users globally and should be supported by robust controls that reconcile data integrity to the firm’s books and records.

8. Enterprise-wide reporting: A flexible, enterprise-wide reporting framework for collateral information is necessary to satisfy business needs and to improve operational efficiency in the event of resolution. Reporting should be an interactive tool to monitor collateral balances and rehypothecation activity. Given the heightened need for transparency, it is critical for firms to develop a dynamic reporting framework to facilitate forward-looking analysis
integrated with desktop utilities to support what-if capabilities and pre-trade analytics. The dynamic nature of collateral businesses, combined with regulatory requirements, increases the importance of dashboards that update in near real-time to provide information on collateral requirements and availability for a given entity or jurisdiction.

9. Systematized document management: Pools of collateral pledged or held are governed by contractual documents that differ by counterparty, entity and jurisdiction. Historically, key legal agreement terms were manually updated to databases, which were infrequently checked for accuracy and not necessarily reconciled to the collateral management system. Further, in case of an event, the triggers and terms and conditions were not integrated with the collateral systems. This operational process increased disputes, as the terms in collateral agreements drive the transacting parameters governing each counterparty relationship. Developing a mechanism to digitize legal agreements and uploading key terms (or metadata) directly into a central database will promote accuracy and enable firms to retrieve and query key attributes for collateral management and other required downstream processes. Being able to reconcile these terms between systems is imperative as a control measure, as it will limit the gaps leading to incorrect handling of counterparty collateral.

10. Straight-through processing (STP): Current regulation and collateral practices will increase the volumes and pace of collateral management transactions. STP is critical to efficiently address the accuracy and optimization of collateral management data and activities. A true STP operating environment with limited manual intervention across the collateral management life cycle is pivotal to addressing the scalability required to support increased volumes and collateral fragmentation. This will become an imperative as margin call volumes are expected to increase by more than 250% above current levels. A focus on flexibility when building the framework allows it to seamlessly integrate with internal systems and third-party providers and support the emerging trend to connect to industry-developed market utilities to support key workflow components (e.g., portfolio reconciliation, margin call issuance and settlement).

Sample target operating model

<table>
<thead>
<tr>
<th>Governance</th>
<th>Audit and Validation Committee</th>
<th>Credit Portfolio Management Committee</th>
<th>New Product Approval Committee</th>
<th>Business Acceptance and Documentation Committee</th>
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<td>Functional Areas</td>
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Technology not shown, but cuts across all functions, and includes data quality, data frequency, data management and architecture.

11 The figure is representative of the margin call volume for uncleared swaps for large dealers. Baseline data was taken from 2015 ISDA Margin Survey and based on an EY assumption that 25 consolidated entities will be subject to the uncleared margin rules on September 1, 2016.
Methodology and approach

The graphic on the following page outlines a method for identifying, designing, implementing and sustaining an integrated collateral management framework supporting the current regulatory environment and other operational needs, such as technological architecture, degree of automation, and integration of workflows across businesses. Firms will benefit from adopting a framework that compares the current state of collateral-related processes and systems to the organization’s forward-looking needs as well as industry-leading practices, supported by a global program management office. Process redesign and system enhancements may be required in order to meet strategic, regulatory and business needs, while simultaneously focusing on cost-savings and revenue enhancement opportunities.

The real challenge today is not driven by technology or regulation but by your organizational readiness and alignment against a forward-looking strategy to implement the necessary changes. While uncertainty exists, centralization of collateral management activities is where the industry is headed, and organizations need to make strides toward this objective. This includes focusing on:

- Implementing a centralized infrastructure to provide a single view of your collateral pool for effective balance sheet management.
- Promoting timely quantification, accurate monitoring and collateral risk management procedures to identify risks and anticipate demand.
- Building a flexible reporting framework to provide transparency for both intraday and end-of-day collateral balances.
- Being innovative and finding solutions that will not only work in the short term, but will also provide the tools necessary to comply with future regulations and embrace new technologies as they become available.

Collateral management has come into focus, and firms are looking at meeting regulatory requirements and also expanding services and increasing revenue. Before firms can take full advantage of the opportunities that effective enterprise-wide collateral management has to offer, they need to assess their current processes to see whether they have the ability and desire to move ahead in these ways.
Methodology and approach

We have outlined an efficient, industry-tested approach for identifying, designing, implementing, and sustaining an integrated collateral management framework supporting the current regulatory environment and other operational needs, such as technological architecture, degree of automation, and integration of workflows across businesses.

1. Global program management office
Support the setup of an integrated collateral management framework. Need to define program scope, project charters and plans. Actively manage issues and risk and monitor progress toward key milestones, etc.

2. Collateral capabilities assessment
Adopt a framework that compares the current state of collateral-related processes and systems to the organization’s forward-looking needs as well as industry-leading practices.

3. Process redesign and implementation
Process redesign and system enhancements may be required in order to meet strategic, regulatory and business needs, while simultaneously focusing on cost-savings and revenue enhancement opportunities.

4. Internal control structure enablement
Provide oversight and guidance for designated areas of responsibility, develop high-level policy and procedures, define internal controls and validation, confirm key metrics for performance measurement, define education program.

Centralization of collateral management

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T+2: shortening the US settlement cycle

by Petar Lovric, Matt Fischer, Kimberly (Corcoran) Rhatigan and Nagaraj Swaminathan
Abstract:
Since the market disruptions of the late 1980s, and especially in the wake of the 2008 financial crisis, global market participants and regulators have continued to prioritize measures to reduce risk, including contracting settlement cycles. In 2014, a market initiative was created, led by the Depository Trust & Clearing Corporation (DTCC) and industry participants, to move the US securities market from a T+3 to a T+2 settlement cycle to reduce risk and further increase global harmonization. A T+2 settlement cycle will promote stability and mitigate systemic risks by reducing counterparty exposure and decreasing clearing capital requirements. As part of any major transformational change, organizations will have to address several critical decision points around the business model, operating model, booking structure, technology, governance and compliance to efficiently facilitate settlement cycle contraction. Organizations need to identify changes required through a robust and thoughtful assessment of their current state and develop an implementation road map and a resource plan that meet the anticipated timelines, while aligning with the overall business objectives.

In 2012, the Depository Trust & Clearing Corporation (DTCC) commissioned a study to analyze the costs, benefits, opportunities and challenges associated with shortening the settlement cycle in the US market from three days (T+3) to two days (T+2). This study confirmed the risk reduction benefits, operational efficiencies and feasibility of moving to a T+2 settlement cycle for equities, corporate bonds, municipal bonds, and unit investment trusts. As an initial step in the migration to T+2, the industry formed the Industry Steering Committee (ISC) and Industry Working Group (IWG), comprising of approximately 20 ISC and 75 IWG participants across key market segments. In June 2015, the ISC published a white paper outlining the industry-level requirements, associated regulatory rule changes, and a proposed plan, including milestones and a timeline (depicted below) to shorten the settlement cycle to T+2. The white paper calls for a Q3 2017 target for T+2, and provides the high-level requirements for DTCC participants, market utilities and other financial institutions to meet the target migration date. The industry-level requirements are grouped into four categories: trade processing, asset servicing, documentation and regulatory changes.

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The Industry Steering Committee (ISC), composed of representatives of US financial services organizations, was formed in 2014 to provide oversight and guidance to the effort to shorten the settlement cycle.
Given the proposed implementation, industry participants are faced with a two-year time frame in which to achieve a substantial shift in securities settlement with far-reaching consequences. In 2014, DTCC cleared an average of $925 billion per day across all products in scope for the shift to T+2, which reinforces the importance for organizations to implement all required internal changes.\textsuperscript{13} This should be done on an accelerated timeline by the end of 2016 in advance of the industry-wide testing that is planned to start in Q1 2017. The industry-wide testing will cover all applicable connections between DTCC and its clients’ organizations, run all requisite DTCC processes and reporting, and support the full range of trade life cycle events to enable a smooth transition to T+2 settlement. In support of this initiative, DTCC is planning to develop a new test environment, which also could be leveraged for future initiatives.

Individual firms need a well-thought-out and phased plan to mitigate the inherent risks in making this significant transformation. The nature, complexity and degree of change will be different for each organization; a clear understanding of this is critical to successfully plan and execute across the three phases of implementation: design and development, testing and migration. Each organization will have to accept modifications reshaping its processes, and heightening its focus on operational efficiency, technology rationalization, people and communication management. The complexity of the undertaking will be amplified due to the need for extensive and coordinated internal and external communication. Plans to complete each phase will need to be flexible enough to incorporate other marketplace changes and to accommodate other internal initiatives and competing priorities, while also meeting all of the key milestones and timelines.

Most organizations believe that the changes required are not likely to include a significant overhaul of technology or data infrastructure. However, depending on a firm’s current state architecture and level of consolidation, the challenge will be in identifying the full spectrum of changes needed, and not missing any requirements across the impacted technologies, business lines or trade life cycle events. To confirm that all changes are identified, conducting a robust current state assessment is critical, and this must be followed by robust end-to-end testing. To meet the designated timeline, it is imperative for each participant to conduct a thorough readiness assessment at the earliest opportunity, in order to provide enough time to plan, design and implement.

\textbf{Background for T+2}

The US securities market has remained at a T+3 settlement cycle since the move from T+5 in 1995, despite significant improvements in technology and post-trade processes. In the wake of the 2008 financial crisis, as global market participants and regulators increased their focus on measures to reduce risk and market inefficiencies, DTCC initiated efforts to gain industry consensus on the shortening of the current settlement cycle. Following the release of the 2012 DTCC-sponsored Cost Benefit Analysis of Shortening the Settlement Cycle, ISC, IWG and various Sub-Working Groups (SWG) were formed to move the effort forward.\textsuperscript{14} In June 2015, the results of industry analysis by the IWG and SWGs were published, including a proposed timeline to achieve T+2 settlement by Q3 2017. Based on the published timelines, organizations must implement all required internal changes by the end of 2016 in order to prepare for industry-wide testing that is planned to start in Q1 2017. The ISC recommended rule changes to the regulators in Q2 2015 that include detailed draft text highlighting the changes. These rule changes are expected to be formally proposed in Q4 2015 and implemented by Q2 2016. The most significant recommendation was the changes to SEC Rule 15c6-1(a) that establishes the “regular way” settlement. While the rule changes may take quite some time to become finalized and approved, the SEC has issued a letter to SIFMA\textsuperscript{15} expressing support and encouragement. Accordingly, the industry is planning and budgeting with the assumption that regulatory certainty will be obtained, and the Q3 2017 target deadline for the industry will be met.

\textsuperscript{13} Average daily volumes taken from DTCC’s 2014 annual report.

\textsuperscript{14} The 2012 study was commissioned by DTCC to analyze the costs, benefits, opportunities and challenges associated with shortening the settlement cycle to T+1 or T+2. SIFMA served in an advisory role for the study.

\textsuperscript{15} SEC Letter to SIFMA, September 16, 2015, by SEC Chairperson Mary Jo White.
The impetus to shorten the settlement cycle for the US securities market stems from a variety of benefits it will provide. One less day of risk exposure in the settlement cycle means a reduction in market and counterparty default risk faced by market participants during the settlement period. In addition to the cost savings that will be achieved through greater standardization and efficiency, this reduced counterparty risk will mean a reduction in capital and risk-based margin requirements for National Securities Clearing Corporation (NSCC) members. The shorter settlement cycle will also provide systemic benefits by reducing pro-cyclical margin and liquidity requirements and increasing overall market efficiency. Individual market participants will benefit from risk reduction on many fronts; increased standardization and modernization of settlement operations and supporting technology will help mitigate the operational risk present between trade and settlement date.

In addition, momentum behind this initiative is driven by the realized benefit to the industry through the international harmonization of securities settlement. In the 20 years since the US moved from T+5 to T+3 in 1995, the European Union (EU) followed suit in 2001 and, then, along with Hong Kong and South Korea, surpassed the US by achieving T+2 settlement in 2014. Similar plans are also already underway in other markets, including Australia, Canada and Japan. The EU migration to T+2 occurred without any significant issues. However, the option of opting out of a T+2 settlement cycle for OTC trades caused operational challenges for some market participants. The US transition to T+2 will cover exchange and OTC trades, so there will not be any concept of opting out. The US transition will likely alleviate the issues experienced in Europe, as clients will be motivated to globally harmonize the settlement cycle across their securities trading activity.
Managing the change

The US migration to T+2 is likely to be more challenging than the EU transition, however, due to additional layers of complexity in the US settlement process, including continuous net settlement (CNS), institutional delivery (ID), and the lack of any “match to settle” requirement. The US market is also significantly larger, with close to $1 trillion per day notional clearing and settling through DTCC. Organizations expect to leverage their EU migration experience for the US T+2 migration and implementation.

The ISC white paper identified a range of high-level industry requirements for trade processing, asset servicing and documentation necessary to shorten the settlement cycle. The requirements mandate for trade processing will require firms to update all reference data and system configurations and review payment mechanisms used to move money in anticipation of settlement to confirm available funding for T+2. New cut-off times for real-time trade matching (RTTM) and the submission of affirmed trades for straight-through processing must be applied. For asset servicing, organizations will have to update ex-date periods, cover/protect expiration, the due bills redemption period, and all related calculations for both regular-way and irregular-way settlement. Shortening the settlement cycle will also require sweeping updates to documentation, including agreements, official statements, prospectuses, subscription documentation, policies, operating procedures and training materials.16

These outlined requirements will need to be implemented as actionable changes for each organization, depending on its specific context and situation. The nature, degree and complexity of the change will be different for each organization, based on multiple factors, such as its role, offerings and size. Mid- and smaller-tier market participants are more likely to experience a greater impact, due to their higher reliance on manual processes in comparison to other market participants. For buy-side firms, the move to T+2 will require enhancements to interfaces with broker/dealers and custodians, as well as faster discrepancy resolution in processing allocations and agreeing to settlement instructions with custodians. The move to T+2 will require sell-side firms to update all trade processing and asset servicing processes that default settlement dates, ex-dates and cover/protect dates to the T+3 settlement cycle.

For broker/dealers with retail clients, there will have to be an acceleration of retail client funding processes to confirm clients’ ability to make funds available for settlement on an accelerated time frame. Custodians will have to work with their clients to automate standing settlement instructions and trade amendments. Securities lending participants will need to accommodate the reduced time available to recall securities out on loan and to locate securities between execution and settlement. Organizations with higher degrees of manual processing will need to make more substantial technology-related changes. In addition, there is also a range of behavioral changes that will be critical, such as matching and affirming trade instructions on trade date, which will require greater discipline by all stakeholders involved in these processes.

Importance of a readiness assessment

The time, resources, and coordination required to implement the changes to meet T+2 settlement requirements are substantial. These changes need to be made under aggressive timelines, when firms are already constrained due to competing priorities and regulatory requirements in various arenas, including credit, capital, liquidity, and data quality and aggregation. Firms are internally positioning T+2 as a high-priority, cross-divisional project, and are budgeting accordingly. All changes and builds will need to be made and internally tested by the end of 2016, so that each participant is ready for the industry-wide testing by Q1 2017. The level of coordination and communication, both internally and externally, creates an additional level of complexity that warrants additional time in planning and execution. Each organization will need to carefully review the requirements for T+2 settlement and apply them in the context of its own current state. However, in order to estimate the time, resources and other investments, it is critical to conduct a rapid but robust impact and readiness assessment.

There are many considerations that organizations will need to take into account when performing this assessment. Identification of systems, applications and reference data for which the settlement calendar will need to change will be critical to determine the overall scope. Developing an inventory of various documents, such as agreements, prospectuses, policies and procedures, is a critical step in determining the documentation-related changes. As with any transformation project, it will be necessary to review the various functions and processes, and the client profiles and segments that pose the highest risks and obstacles to meet the timelines. Organizations should also identify opportunities that they could leverage for enhancements and efficiencies in the course of making T+2-related changes. For example, institutional broker/dealers may review and amend their margin policies to extract competitive advantages.

16 The 2015 paper, commissioned by DTCC and supported by the ISC and IWG, identified the critical milestones for achieving T+2 and presented a timeline for completion.
Following this assessment, the internal planning will involve several key components, including the development of an implementation approach and tactical plan, the identification of a target operating model including processes and procedures, the development of organization-level business requirements and technical requirements, and the build and testing of required technology components. These T+2 requirements impact the securities operations and technology functions in varying degrees. The above chart is an illustrative example of key changes that may be required across functions:

- **Trade support**
  - Update the notification triggers and modify controls to identify and escalate aged breaks earlier in settlement cycle.
  - Potential for system process changes depending on existing automation (e.g., batch timing and break aging logic).
- **Middle office**
  - Negotiate arrangements with counterparties for providing allocations on Trade Date (TD).
  - Enable TD matching and affirmation and maximize affirmation/settlement rates.
  - Frequent communication with clients.
- **Settlement**
  - Proactive matching and inventory management to reduce/manage fails and confirm compliance with the US Securities Exchange Commission’s Rule 204 (SEC 204).
  - Increase focus on processing of newly listed securities, American depository receipts, exchange traded funds, “when issued,” and 144a/Reg S products.
- **Funding and treasury**
  - Potential change in projection process to incorporate activities completed on TD.
  - Updates to systems used to generate projections in order to produce earlier estimates.
  - FX deadlines for cross-border activity.
  - Leverage electronic fund transfers vs. physical checks.
- **Tax/regulatory reporting**
  - Update triggers and aging logic to confirm accurate reporting for management of settlement risk.
  - Counterparty credit exposure elections.
- **Client onboarding**
  - Negotiate service level arrangements with counterparties regarding the timeline for providing settlement instructions for new or existing accounts.
  - Update the notification triggers for new subaccounts received over Oasys or other automated allocation platforms to reduce lag time.
- **Collateral management**
  - Updates to systems supporting the margin calculation and processing of margin calls.
  - Increased resources may be required to handle the documentation changes to support the move to T+2.
- **Securities lending**
  - Expedite recall process to take place on TD in order to minimize settlement risk.
  - Revise and test billing calculations to confirm accuracy within the shortened settlement cycle.
  - Eliminate manual activities impeding efficient inventory management.
- **Asset servicing**
  - Improve coordination with upstream teams prior to key event dates to reduce risk of unintended elections.
  - Update corporate action and dividend processing systems for ex-dates and cover/protect expiration dates.

As part of developing the implementation plan, organizations need to consider the alignment of changes with strategic growth objectives and planned or in-flight initiatives, along with the ability to respond to and leverage anticipated changes in the industry. This will help them to focus on the high-priority and critical items and enhance their ability to meet the timelines through a strategic and thoughtful approach, supported by deployment of organizational resources in a more holistic and efficient way.

**Conclusion**

In summary, despite a lack of formal regulatory approvals, firms need to work on the assumption that T+2 related regulation action will occur in due course. Therefore, firms should initiate analysis and planning to support delivery within the proposed timeline, and mitigate risks associated with accelerated implementation. While the technology changes may not be very complex, identification of all areas that require change will be a challenge, as well as a critical success factor. Organizations need to identify the changes required through a robust and thoughtful assessment of their current state and through development of an implementation road map and resource plan that meets the anticipated timelines, while aligning with the overall business objectives. Conducting robust end-to-end testing will be critical, and will act as a second line of defense to confirm that all required changes are identified. The industry-wide testing will be a critical phase of the initiative, and firms need to implement all their internal changes by the end of 2016 to meet the Q3 2017 deadline.

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Efficient client onboarding processes

by

Matt Pawlowski, Thomas Zaldivar, Anthony Goodwin and Petar Lovric
**Abstract:**

Client onboarding is a critical interaction point in client life cycle management due to its importance in client experience, client profitability and business process effectiveness. Regulatory requirements and evolving business needs have made onboarding more complex. However, strong, flexible and client-friendly onboarding is critical to securing new clients, retaining existing profitable clients and cross-selling. A comprehensive strategy around customer data, thoughtful use of vendors and utilities, the right organizational positioning and use of performance metrics can make onboarding efficient, client-friendly and a source of competitive differentiation.

Client onboarding is a critical interaction point for both new and existing clients, which can greatly influence the client experience, client profitability and business process effectiveness. Onboarding a new client can speed the ramp-up of new business, enhance cross-sell and cement the new relationship. Conversely, it can be lengthy, costly, duplicative and error-prone and lead to damaging the prospective relationship. Although regulatory changes, evolving business needs and an increasingly competitive marketplace have made onboarding more complex, financial institutions remain focused on growth by securing new clients, retaining existing profitable clients and cross-selling as appropriate. A comprehensive strategy around customer data, thoughtful use of vendors and utilities, the right organizational positioning of onboarding, and use of key performance metrics can make onboarding efficient, client-friendly and a source of competitive differentiation.

For most products and organizations, client onboarding involves a series of one-time processes, many of which must be specific to the type of client. Onboarding involves gathering client data and setting up important reference data that may be used to govern client transactions and reporting going forward. It involves a set of regulatory, risk and policy reviews and approvals of the client – “gates” the client must pass through. Onboarding usually requires requesting, reviewing and storing client documentation, and it often involves negotiation and execution of client agreements. Onboarding requires opening accounts, setting up various client-specific settings and confirming sometimes customized client reports, settlement instructions or file transfer formats. Finally, onboarding sometimes involves client training or initial help-line assistance. Onboarding processes often differ slightly from client to client, requiring bank onboarding staff who can handle the additional flexibility and complexity. It also involves a degree of confrontation in requesting sensitive information, checking that clients meet regulatory requirements and helping clients to gain comfort with new procedures or formats.

Thus, onboarding must span across multiple businesses, functions, legal and compliance groups, technology and other areas. Mistakes in onboarding can lead to regulatory or legal breaches, persistent errors in client reporting or transaction processing, or undue risk exposures. For these reasons, successful banks will design or enhance their onboarding processes and organizations with all of these areas in mind. Smooth and effective onboarding is not a simple task. The pyramid framework above provides an overview of the layers that must go into the design of the onboarding function. Onboarding strategy starts with the applicable governing policies and regulations. It must address the various processes required to initiate the new relationship and enable new business transactions. Onboarding will need to interface with the key technology systems related to client data, documents, transactions and experience, and onboarding itself may use various enabling technology tools. The staff members who take clients through the onboarding process must have strong relationship management skills, be able to coordinate a multi-step onboarding process, and be familiar with the various functions involved. Finally, the critical client data coming out of the onboarding process must be checked, cleaned and integrated into the appropriate systems, in line with firm data policies.
Client experience starts at onboarding

Enhancing the overall client experience is core to banks’ key global growth objectives and to competitive differentiation. Client experience combines sales and service interactions, electronic communications such as the online portal, specialization of data and activities to the client’s needs, and responsiveness in client-related workflows. Through its unique positioning in the organization, the client onboarding function is a primary component of the broader client life cycle and relationship management process. A focus on understanding the client and the client experience is central to delivering across this process. This emphasis and focus have provided some institutions with a competitive advantage over the last few years, while also managing regulatory compliance across regulations such as Dodd-Frank, KYC/AML, OFAC and FATCA. Creating efficiencies in client onboarding will both improve the overall client experience and allow more time for strategic client management initiatives. Designing the organization, processes and workflows for onboarding processes can tremendously impact the overall client experience.

After the advertising, marketing and sales that go into securing a new relationship, the initial client onboarding is the first opportunity new clients have to interact with and gain an understanding of how the bank operates. It is also an important, early opportunity to make an impression on the client. Making a good first impression is crucial to generating revenue, and developing a long-lasting client relationship. Around 25% of the time, this first impression causes prospective clients to become frustrated, sever ties and opt for other providers. Challenges for banks include clumsy, decentralized and redundant touch points across regions and products, which frustrate the client and can highlight inconsistencies across the firm, such as data quality. To create efficient processes and emphasize focus on the client relationship, financial institutions should look to streamline related processes, systems and client touch points. This will help improve the client experience, provide a more personalized interaction approach, and ultimately build a stronger brand in the marketplace.

Tools to manage regulatory complexity

Investment banks face a complex set of regulations affecting client onboarding, which can differ across regions, products and types of clients. Regulations affect the handling of client data, the checks banks must perform for client suitability, and the communications and information banks must provide for clients. In recent years, regulators have required banks to design, document and test onboarding-related processes, with increasing levels of detail. Failure to comply with applicable rules has led to fines and mandates to cease certain business and processes. Applicable regulations add to the complexity of onboarding, in addition to bank policies, risk management and required setup processes.

For example, client suitability, an essential and mandated part of client onboarding, has been neglected or insufficiently followed by financial institutions at various times. From 2009 through 2014, leading global investment banks were fined approximately $12.5 billion for sanctions and anti-money laundering violations. Scenarios such as these may be avoided with adequate, high-quality data and an effective process for assessing client suitability. Dodd-Frank, Markets in Financial Instruments Directive (MiFID) and FINRA Rule 2111 are some of the regulations requiring...
Optimize assets and operations

institutions to take a hard look at cross-border implications and client suitability. The most effective way of performing suitability checks is through the client data collected as part of the client onboarding process. In addition to preventing onboarding of clients for unsuitable products, such data and processes may help institutions offer prospective clients alternative products where suitability is appropriate.

The complexity, cost and importance of client onboarding have led to the use of sophisticated software tools, as well as emerging and shared industry utilities. Many financial institutions are finding it cost-effective to focus their resources on core competencies and to outsource the development of tools to suit their needs. This focus includes greater emphasis on relationship management, while leveraging outside utilities and tools to gather certain data and drive business processes. New and future requirements force banks to keep onboarding tools and processes flexible. This is sometimes easier to relegate to an industry provider specialist. Ongoing changes and growth of global regulatory requirements mean that related onboarding policies and procedures continually need to be updated. Technology development and maintenance of proprietary applications can become costly and burdensome. This has led to the proliferation of vendor client life cycle management (CLM) tools and market utilities for functions such as KYC.

Successful institutions use workflow software to manage complex onboarding processes and to aid regulatory compliance and controls, while maintaining business flexibility. Workflow tools may offer full and customizable solutions, covering both business needs and regulatory requirements. This allows for both tactical and strategic implementation solutions and greater ease in maintaining compliance across multiple regulations and geographies. Workflow solutions can enhance time to revenue and improve operational efficiency with a single product approach, while allowing key personnel to focus more on relationship management across products. Typical tools cover legal entity data management, regulatory compliance (e.g., KYC, AML, Dodd-Frank, MiFID, FATCA and EMIR) and client onboarding. Selecting and implementing workflow tools must be a detailed and carefully planned process. The tools will have to connect with many functions across the bank, be able to handle the required flexibility, and allow for a smooth transition for onboarding staff. Thoughtful use of workflow tools can help institutions make positive first impressions with clients and enhance the efficiency of compliance, data collection, account setup, and other onboarding processes.

Certain onboarding requirements — such as KYC — are standardized, costly and mandatory for all industry participants, making them viable candidates for industry utilities or consortia. This has led various banks to pursue development of a KYC utility, a shared source of KYC data across banks and clients, in an effort to reduce costs and streamline these processes. There are currently multiple ventures being developed to try to gain market share in this new service environment. Their goal is to create a golden source of KYC data in the market, such that during client onboarding and rolling review cycles, an institution need only obtain the relevant and up-to-date data from the utility. This would eliminate the need for clients to provide the same data to multiple institutions. Clients could provide the data to one or a few utilities from which their counterparties could all obtain the data.
Gathering and managing client data

Data is valuable when it is accurate, complete, uniform and accessible. The capture and management of client data is important, beginning with the methods and processes for obtaining and storing this data for use throughout the bank. It is not uncommon for a client being onboarded across multiple business lines to be subjected to multiple data requests, at times for the same data, from multiple onboarding and operations groups. Data such as customer identification program (CIP) data and financial statements can easily be obtained through a single channel and made accessible across the institution. With a streamlined approach and centralized storage in an enterprise-level golden source, this information can easily be shared across the institution. This improves the quality and consistency of data used across the institution for critical decisions, such as suitability and credit limits. However, because of the many functions that may produce, use or affect this data and the multiple technology applications involved, developing or obtaining a golden source for client reference data can prove challenging.
Enterprise data management (EDM) refers to how financial institutions organize and leverage their shared data. For example, many regulatory requirements require a suite of reports, and consistency and rapid report development can be challenging with disparate data sources. Various vendor solutions exist to provide an out-of-the-box solution to the EDM data problem. These solutions often have mechanisms for highlighting data requirements mandated by regulations, which aid the onboarding process in terms of both the quality and completeness of data.

Linking client data across businesses from a centralized client database enables financial institutions to better track client activity, assess the holistic profitability of client relationships and coordinate multiple bank touch points with the client. From the central database, data management can provide insights into the breadth of customer relationships across an organization. This view of client activity and touch points will allow organizations to make informed decisions and increase customer retention. Cost savings can be attained through both reduction of data stores and elimination of time wasted on duplicate data requests and entries. Implementing such a strategy across multiple businesses and technology systems can be daunting, however, and will require a strict governance framework to process and maintain data integrity.

Creating an efficient client onboarding organization

Onboarding functions must often be specialized in terms of client service tiers, businesses, products and geographies. Solving for this specialization, while simultaneously managing costs, consistency, and the need for global data and standards, creates complex organizational challenges. In an effort to minimize or solve these challenges, many institutions have been analyzing and redesigning their onboarding operating models to improve their efficiency, controls and flexibility. Such analyses must span the core elements of client onboarding, including client relationship management, regulatory compliance, operational account opening, risk management, data management and other functions. These efforts have led to changes in onboarding roles, responsibilities and reporting lines, as well as changes in co-location among related groups and use of less costly locations to deliver onboarding services. Successful banks have addressed manual, redundant and disjointed processes to improve operational and financial efficiency.

Organizations look at the roles and responsibilities of the functional groups within their client onboarding process to determine their overall impacts on the client experience. The goal is to differentiate between core processing and value-added activities to improve overall performance and client satisfaction. Tiered service models can also be implemented to provide heightened service levels for high-value clients. Once core processes are determined, location strategy and outsourcing strategy can be assessed to reduce costs and consolidate related processes into a single location and/or team. Value-added activities can be performed by skilled client representatives, rather than operational resources, to further enhance service and the client experience.

Define

Analyze

Select and validate core KPIs

Develop reporting requirements and gap analysis

Run pilot and confirm KPIs

Finalize KPIs and gap analysis
Managing to success with performance metrics

In addition to optimizing processes and costs, a key challenge for financial institutions is the ability to define, analyze and measure client onboarding through specific key performance indicators (KPIs). This is important, as industry benchmarks for onboarding can be inadequate due to the inherent differences in businesses and product mixes offered to clients. Financial institutions can manage and improve their client onboarding processes through the development of KPIs that measure client experience, satisfaction, business growth, financials and costs, legal and compliance, and operational efficiency.

Developing KPIs across these categories can help management to allocate resources and funds to appropriate areas to control costs, grow revenue and enhance the customer experience overall. With client experience KPIs, the goal and the challenge is to define the assessment of client experience, customer service timelines, and process efficiency sufficiently to quantify them. For example, good KPIs can help banks measure and improve client satisfaction and identify areas of weakness within the processes to increase brand awareness and reputation. KPIs also can be used to identify and measure potential new business opportunities and client utilization across service offerings. This also can help track and manage expectations for business growth. KPIs should be used to identify and track legal and compliance breaches to reduce internal and external regulatory risks, and to increase client satisfaction by identifying and measuring documentation processes, process bottlenecks and inefficiencies.

Conclusion

Improving client onboarding interaction strategies, tools, techniques and delivery methods can enhance client satisfaction and the revenue potential of client relationships. Shared services, vendors and market utilities can provide economies of scale, while enhancing the quality, consistency and speed of client onboarding and life cycle management. Actionable metrics can help management to improve troublesome processes, reduce costs and enhance the overall client experience. Having high-quality, easily accessible client data will help to reduce process redundancies and data costs, leading to increased client satisfaction and business growth.

The first step in improving client onboarding is to analyze the current state of onboarding processes, tools, data and performance. Tracking the steps, timing and processes of onboarding for various types of clients and products will help identify sources of errors, delays, control gaps and pain points for clients. Understanding where duplication exists, where functions can be shared across business areas and how exceptions are handled will help banks to define desired operating models for onboarding. Thoughtful process design will allow for flexibility, efficiency, regulatory and policy compliance, and enhance the overall client experience. Successful investment banks will move beyond just regulation and rules-based onboarding and invest in making client onboarding and overall client life cycle management a competitive differentiator.

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Transform culture
The future of research

by
Joseph Sommer and Jonathan Firester
Despite numerous industry forces and changes surrounding it, the sell-side equities research model has remained remarkably resilient. Equities research is highly valued content, traditionally produced by sell-side analysts and their teams, and distributed without direct charge to clients who provide trading and other revenues to the bank. Regulations such as Sarbanes-Oxley have changed some of the rules, and independent research firms have gained a foothold, but the model in which sell-side research is bundled with execution and other products has not been displaced. Now the UK Financial Conduct Authority’s (FCA’s) MiFID II, as well as advanced technologies and other industry trends, threaten to disrupt the status quo. Investment banks are carefully managing their research costs, making better use of data and increasing efficiency in the production and distribution of research. They are also investing in innovative technologies and approaches to create options that could provide flexibility to compete under various potential, future-state scenarios.

Traditional research model is relationship-driven

For years, the preponderance of equities research has been generated by investment banks (the sell-side), and provided nominally free of charge to their investor clients (the buy-side). Research is bundled in that it is provided as part of a broader, multi-product relationship involving trading commissions, securities finance, origination and other products. Research is normally prepared by highly compensated, senior research analysts and their teams, and the development of investment research content is a significant expense, typically in the tens of millions of dollars at investment banks. While published papers or online research are the standard formats, the most valuable interactions are often analyst presentations and discussions at sell-side-sponsored conferences, individual analyst calls or visits to clients, and client meetings with executives of covered companies organized by analysts. This model promotes a research culture that emphasizes the individual expertise of top analysts and their client and company relationships.

Investment banks have become increasingly detailed in measuring and valuing the research time and content that they provide to each client, in allocating analyst time to their most valued clients, and in confirming that they receive sufficient revenue for it. Understanding the portion of client value created by research, as opposed to trade execution, capital commitment or other services, is a complex, debated and sensitive subject at many investment banks. In the current environment of margin and cost pressures, sell-side salespeople must be increasingly frank with clients in discussing the levels of trading commissions and other business expected from the client. (See the article “Getting to client profitability” in this publication.) Buy-side clients also are being more detailed and quantitative in their evaluation of the fees and other value they provide to each of their sell-side brokers and of the specific products and services they receive. Most buy-side clients conduct regular, internal “broker votes” to aggregate their qualitative assessments of each broker’s research, trade execution, operations and other services. More than 175 buy-side firms use software to track commissions, balances and other payments to their brokers, and to manage payments against their planned commission budget.19

How analysts create value has evolved, making it harder to create differentiated research content and value. Individual analysts can no longer receive more detailed or advance information from the companies they cover. The US SEC’s Regulation Fair Disclosure (FD) requires public companies to make public any material information they disclose. Also, much standard research content, such as company

financial projections, stock price or trading volume analyses, and alerts on management or product changes, are now widely available through various internet sources. Although research analysts are ostensibly all starting from the same fundamental background information, top analysts are often valued for their specific points of view (and financial expectations) regarding a company, and points of view that are widely held by the market are inherently less valuable to their clients. Based on industry surveys, buy-side feedback and compensation, top research analysts are still valued significantly more than their average peers.

Through their conversations with buy-side clients, research analysts also create value by aggregating and communicating investor sentiment regarding a company and its stock. This has a network effect in that by talking to more clients, analysts can gather more information, making them more valuable to the clients with whom they meet. Thus, a well-regarded analyst ends up talking with far more clients and hearing far more investor sentiment than does an average analyst. This tends to heighten the additional value to clients of a top analyst for a given company or sector and increase the gap between the analyst and his or her peers. In addition, increased understanding of how a company’s stock is being viewed by investors can make an analyst’s opinion more important to the management of that company.

Leading investment banks continue to hold an essential role in producing and delivering research to the top 120 asset managers, who alone control more than 50% of global assets under management. Although total trading commissions and research dollars decreased between 2009 and 2013, according to Greenwich Associates, US cash equities commissions rebounded by 10% in 2014, along with a 2% increase in all-in commissions due to high demand for research content.

A more recent Greenwich report states that electronic trading has plateaued due to “institutions’ need to parse out trades and commission payments to brokers as compensation for research.”

Institutional Investor’s 2014 research rankings further attest to the bulge bracket’s incumbent strength, as the top 10 global, research-providing firms are investment banks.

Buy-side firms typically have limited bandwidth to develop new relationships. There must be a compelling business case and an internal champion who is willing to invest organizational resources in acquiring new services or technology. It can be difficult and time-consuming for an independent research provider to gain access to multiple influencers, demonstrate value and get paid by larger investment managers. The buy-side response to more challenging market conditions and new regulations has often been to consolidate research and trading with their most important providers, which starts with the top-tier investment banks before niche-content providers.

**Potential forces of change in research**

Multiple current trends have the potential to challenge the current research model. MiFID II and other regulatory initiatives seek greater transparency into investors’ research spending. The rise of alternative research providers may stimulate demand for unbundling of research costs from commissions. Potentially disruptive technologies, such as big data, cloud solutions, social media and predictive analytics, could change or replace the equity research business model. Investment banks are using new technology tools to create and distribute research content, enhance analysts’ efficiency, and measure and manage client relationships. Industry players, including both sell-side analysts and their clients, have a wide variety of different perspectives on which changes are imminent and where research is heading.

A key provision in MiFID II is that the buy-side will need to set pre-agreed research budgets and not exceed them, unless there is a written agreement with investors. This implies establishing an annual research budget for each provider and near-real-time tracking of commissions paid against that budget. Alternatively, the buy-side can elect to pay “hard dollars” for sell-side research (instead of paying for research within its commission spends). As of August 10, the Financial Times reported that “the European Commission has ruled out pushing back the scheduled January 2017 implementation date of Markets in Financial Instruments Directive II, despite the short timeline and delays in getting the legislation into place.”

While MiFID II may be limited to European firms, surveys conducted by Tabb Group and others predict that the operational practices to determine budgets and track commissions paid to specific providers will be deployed.

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globally. The largest asset managers are global and so are their relationships with the investment banks. It would be too difficult to determine which research products and investors are strictly regional by tracking combinations of where the content came from and which internal funds benefited. Therefore, both research providers and clients are developing strategies, determining gaps and making plans for a future where research budget decisions are more transparently aligned with the investment process.

The past 15 years have seen the rise of various alternative research providers. Independent research providers and specialized analytics firms have gained market share. Some of these research providers are compensated through commission-sharing arrangements (CSAs), where commissions to an executing broker/dealer are shared with the research provider. Many large asset managers have also developed their own internal research teams. However, these alternatives have not yet significantly displaced the traditional sell-side providers. Alternative service providers include forensic accountants, expert networks, data scientists, quantitative forecasters and management advisors. Although these firms have made inroads, their broader impact will be to shape how the sell-side evolves to compete with them.

Technology has the potential to dramatically change research, although industry practitioners disagree on how to best use technology. In general, investment banks are using technology to distribute research and to make analysts more efficient. Most investment banks are also using technology to track research usage through emails, websites and mobile technology. Tracking which client individuals access a research report and which portions hold their attention can help banks understand more finely the content valued by their clients and who will pay for it. Certain buy-side clients have asked banks to break content into its components so that they can re-assemble it into internal, multi-bank formats. Research information protocols such as RIXML enable this. While this is another way to enhance value to clients, banks are concerned that this disassociates their research content from their own proprietary branding and makes it harder for them to track and control how their content is used.

Investment banks are also using technology to make analysts more efficient by supporting research teams across different locations to automatically format content or to perform basic, repetitive analyses automatically. Artificial intelligence applications can even produce simple written reports based on online data, such as quarterly financial reports, although this content may not be as nuanced or distinctive as that written by a human analyst. It is unclear whether “robo-research” is perceived to add value in the institutional market. Other technologies can be used to help analysts gather primary data through online surveys, instant “clicker” audience response devices at conferences, or social media and crowd-sourced content.

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Big data and predictive analytics are technologies that have significant potential to overturn the research model. By finding subtle patterns across large volumes of structured or unstructured data, proponents believe that these technologies could create insights or metrics previously unnoticed by human analysts and perhaps respond to changing online investor sentiment more quickly. Examples might include developing models to forecast price movements, tracking product transactions or gauging customer sentiment on social media. This type of research content, provided directly as datasets or dashboards, or edited and packaged by sell-side research analysts, could evolve into a new data-driven research offering.

Creating strategic options for research

Cost-cutting pressures, regulatory developments, disruptive technologies and alternative content providers may overturn the current, traditional model for equity research. However, the resilience of the current bundled commission-based model and the lack of agreement among research providers and consumers imply uncertainty. Successful investment banks will need to create strategic options, in terms of their research culture, technology and business model, to prepare for several potential future models.

Consider, for example, the following aspects of various hypothetical, future research scenarios. Each implies different potential allocations of research investment, different strategies for managing client relationships and differences in the target culture and professional expectations within research and trading:

› Relationships win — Research remains a critical part of the multi-product, aggregate relationship between investment banks and their buy-side clients.

› Rise of the independents — Cost pressures disengage research from trading; MiFID and other forces cause investors to review their research providers; and specialized, independent research providers take meaningful share away from the investment banks.

› Disintermediation of sentiment aggregation — Technologies such as big data or social media become better at aggregating, analyzing and distributing investor sentiment data. Analysts continue to be valued for their expert points of view but not additionally for the value of their investor networks.

› Robot research — Artificial intelligence and other technologies are able to create valuable perspectives from publicly available data and investment bank research spend shifts away from people to technology.

In environments with greater uncertainty, successful practitioners will optimize the efficiencies of their current business model, leverage their competitive strengths and invest in creating “no-regrets” strategic options. Investment banks will respond differently based on their cultures, clients and dominant businesses. To prepare, banks must carefully measure and manage the revenues and expenses associated with their research clients, understand the costs of various research content and services, and assess how clients value and pay for research. Successful banks also need to control research costs and maximize the efficiency of analysts, research production and distribution.

Successful investment banks will also become even more selective in determining which clients get research products, corporate access and services and in limiting who can interact with their analysts. They will strive to align research, trading, origination and use of balance sheet in the industry sectors where they have the greatest strengths. They may innovate by developing more primary research or by applying advanced technologies to create insights that enhance the value of their traditional research offerings. Some firms may provide clients with greater access to underlying data, proprietary forecasts and custom analytics. Research production costs and methods will be tightly managed, measured and controlled to enable sufficient return on equity.

Investment banks will also need to develop and support a culture that balances individual recognition (e.g., of expert analysts) with the promotion of cross-product teaming that maximizes the value of multi-product client relationships. Their culture will need to position technologies and data scientists to support research analysts and also to create original content that may eventually cannibalize traditional research.

To succeed under various future research scenarios, successful investment banks may invest strategically in disruptive technologies, new market entrants or potential substitutes for traditional research. This may be in the form of development of in-house expertise, alliances, creation of technology “sandboxes” for evaluation and financial investments in relevant industry entrants. A cultural willingness to explore options and collaborate with their most important clients in response to industry changes will enable the sell-side to lead the way forward to the future of investment research.
Become client-centric
Getting to client profitability

by
Alex Rathod and Jonathan Firester
Abstract:
The profitability of client relationships has always been important to investment banks. However, recent margin pressures, increased constraints on balance sheet and capital, and the costs of increased regulation have made it even more critical. Banks must assess, improve and manage client relationships in terms of their profitability, ROA and other financial metrics. Most capital markets client relationships are multi-product, and many costs are hard to attribute to specific clients. Thus, measuring profitability creates challenges related to data, technology, analysis, resource allocation, sales behavior and client service. Successful investment banks will become increasingly adept at understanding the financial contributions of their client relationships, as well as clients’ use of balance sheet, research and other resources. Using this understanding, banks will manage their product and client segment strategies, as well as their individual client relationships to maximize profitability and other key metrics.

Managing multi-product relationships

Capital markets has long been an industry of interrelated, multi-product client relationships. Clients provide revenues through commissions and other fees, lending and financing spreads, price spreads on principal transactions, and the value of the cash and securities they pledge or post as collateral. In addition to transactions and the use of bank balance sheets, clients receive research and other content; value-added services, such as analytics, reporting and consulting; and technology and data. Certain products and services are often provided without additional charges, such as clearing services in a prime brokerage relationship, under the assumption that there is a larger revenue-producing relationship.

This makes it important for capital markets providers to assess their client relationships holistically. When calculating profitability, they should consider revenues across different products, clients’ use of balance sheet, lending commitments, and their use of research and other content, as well as the expenses attributable to clients in sales, services, operations, technology and other areas. Many buy-side clients themselves use an internal process (e.g., a broker vote,) to qualitatively and quantitatively assess their capital markets providers and allocate their expenditures (i.e., “the client wallet”) accordingly. Often, this will aggregate the input from buy-side traders, analysts, operations, finance and others to assess brokers’ contributions in terms of research content, market insights, trade execution, pricing, balance sheet commitment, service, responsiveness and other factors.

Basel III and other current regulations have made balance sheet more expensive to investment banks and have imposed constraints on it and other funding and collateral resources (for example, through LCR, TLAC and leverage requirements). Regulations, fee and spread compression, and expense pressures have also decreased the profitability of many capital markets products. This has forced many investment banks to hone their strategies in terms of the products and client segments served, and to focus their resources on smaller numbers of strategic (and profitable) clients – and to work with these clients to maximize the profitability of these relationships. Clients, in turn, increasingly recognize that balance sheet and other resources are scarcer than they were several years ago. Most clients appreciate that these resources of the investment bank are often “paid for” through their business across many products, and most are open to conversations regarding their total resource usage in relation to their total business done with the bank. Clients must also balance their demand for low pricing and spreads with their need for counterparty diversification and safety and soundness.

These forces have shifted the client-investment bank relationship to a more equilateral mode, which both groups refer to, more and more, as a “partnership.” To successfully manage such client relationships, investment banks need to be able to easily view and value the full suite of products and services used by a client. This needs to span all of the businesses, geographies and legal entities of the bank, and potentially across all of the subsidiaries, funds and other legal entities within the client’s organization. This may include explicit revenues, as well as value attributed to a client’s trade flow, balances and pledged collateral. On the expense side, it may include costs of balance sheet used, lending commitments and guarantees. Expenses may also include analyst calls and visits, conference invitations, and corporate access provided, as well as transaction and clearing costs, technology provided, and attributable client service and back-office costs. Armed with appropriate information, capital markets sales teams increasingly are having more candid conversations with clients about their perceived profitability to the bank, the share of their “wallet” received and desired, and the quality and desirability of their specific balances and pledged assets. In some cases, investment banks are being quite prescriptive about the pledged assets or trading volumes a client must maintain in order to continue to receive services, such as prime brokerage or access to research analysts.
Data and calculations

For most investment banks, the first challenge is aggregating the necessary data to evaluate client profitability (and other metrics) holistically across products and geographies. Many banks’ technology systems were built to support single-product or single-geography businesses, so client-level revenue data may have to be aggregated from multiple sources. Businesses acquired or merged from other entities may also have data spread across multiple (or duplicate) systems. Often, these separate product systems will not use the same client reference data master or even the same client entity hierarchies, meaning that client data cannot be matched and summarized in an “apples to apples” way across businesses. Furthermore, while certain product revenues, such as commissions, are easily calculated and attributed by client, others, such as facilitation or OTC derivatives revenues, are far more complex. For example, a prime brokerage client’s long positions may create a lending spread, incur a funding expense and provide additional securities lending revenue through internalization.

On the cost side, certain expenses, such as exchange costs, funding costs, analyst calls or capital introduction services, may be easy to measure and attribute to individual clients. Other costs, such as sales coverage or client service, are relatively easy to attribute but introduce a “chicken or egg” problem; for example, providing more senior or more extensive sales coverage to a profitable client could decrease that client’s profitability. Other costs, such as product management or technology application support, cannot be allocated among clients without resorting to some sort of formulaic allocation methodology. Since these costs can be substantial, care must be taken to confirm that the resulting profitability calculations are not just a manifestation of the chosen allocation methodology. For this reason, some banks will choose to allocate only certain direct and attributable expenses in their client profitability analysis.

Most capital markets businesses receive large allocations of costs from functions such as operations and technology. While these costs are often allocated to the product businesses based on metrics such as transaction counts, balances or numbers of accounts, that does not necessarily justify further allocation of these costs down to the client level using these same metrics. When deciding whether to include these costs in client profitability calculations, banks should consider whether such costs actually decrease or “go away” with the departure of the client (or the product business). Certain client behaviors, such as higher rates of trade breaks, manual wire transfer orders or late trade file submissions, can create incremental costs to client service, middle office or operations. To the extent that such clients can be identified and these behaviors’ costs understood, these costs may be incorporated into client profitability analyses. (Often, sales and service will work directly with clients to decrease or charge for these activities.) Client profitability analysis does not necessarily need to be all inclusive to be useful; capturing most revenues and easily attributable expenses may be sufficient to differentiate different tiers of clients and support the appropriate sales and service efforts.

Capturing the requisite data, calculating client profitability and other metrics, and distributing client profitability reports to the appropriate sales, service and management personnel usually requires a combination of technology and dedicated staff. For example, capturing analyst visits or sales coverage activities may require that these groups track their calls and/or meetings through a client relationship management (CRM) application, and attributing client service costs may require tracking their activities by client, perhaps through workflow software. Some investment banks have designated account data management teams to be responsible for gathering, analyzing and controlling client profitability and related data. These teams often report to senior sales or divisional managers.
Using the results and motivating behaviors

Client profitability, ROA and other metrics can be used at a basic level to support strategic decisions about targeted products and clients. A well-established profitability methodology can also aid the selection of specific prospects and clients, to differentiate clients for service coverage levels or allocation of resources, to support individual client “upselling” conversations, and to motivate cross-selling and other product- and firm-level sales coverage activities. Account Data Management teams will often support cross-product sales meetings, client relationship or account management teams, and periodic client reviews.

There is often sensitivity around which managers can see client-level revenue, expense or profitability data. Management must resolve issues such as whether salespeople can see data for clients they do not cover, or whether a product manager can see clients and their data for another product. While some banks are comfortable with sufficiently senior managers having access to cross-product (or cross-firm) client metrics, others will create client tiers (e.g., gold, silver or bronze) to denote the relative profitability of clients without divulging things like specific revenue or product usage information.

Using client profitability analyses to manage client relationships can be subtle and complex. For example, if dropping a less profitable client does not eliminate all of the associated costs, this change could be net negative to the overall business’s profitability. However, if it frees up constrained resources to onboard or expand a more profitable client, it may still be the right decision. In reallocating resources among clients, it may not be the most profitable clients who should receive more resources, but the clients who will likely pay the most in additional revenues for the additional resources provided. To support sales’ conversations with clients, profitability data must be paired with information about the wallet share the bank (or that business) is receiving. While many clients will share this information with their brokers and other providers, or allow it to be aggregated through third-party data providers, often wallet share will have to be estimated using various heuristics.

Many investment banks also use profitability data to create client tiers to provide client-facing personnel with a quick reference to important clients, who may not be substantial or well-known within that employee’s particular business. The evolution and maturity of client relationships must also be considered to avoid penalizing a new or fast-growing account. Investment banks must also consider how to handle less profitable clients in businesses or regions where they are investing for strategic reasons. Finally, there may also be “marquee accounts” that must be served — potentially unprofitably — because they reflect well on the business franchise.

Uses of client profitability data

- Support strategic decisions about targeted products and clients
- Aid the selection of specific prospects and clients
- Differentiate clients for service coverage levels or allocation of resources to support individual clients

Successful investment banks will use client profitability and other data to analyze multi-product client relationships and promote cross-selling. Strong relationships or wallet share in certain products can often be extended across other products, and expensive resources or services provided by one business can be paid for by revenues to another. This requires coordination among separate product-based sales teams, often through a relationship management function for important clients, or through periodic account review meetings. Salespeople and other client-facing staff have historically been compensated through processes that emphasize the business in which they report. To promote cross-selling, performance management and compensation decisions must transparently and objectively reward desired cross-selling. This can be done through portions of compensation tied to cross-selling or overall account or division-level sales, or through “horizontal” reporting organizations in which salespeople report to broader sales teams rather than to product management.

Over the past few years, investment banks have made various organizational changes to better serve multi-product clients. Some have created senior relationship management teams to support or supervise product-based sales. In service-intensive businesses like prime brokerage, some investment banks have shifted certain client service personnel into coverage or sales roles. Since hedge funds are often multi-product clients and prime brokerage is often a core relationship, some investment banks have expanded the role of prime brokerage sales to create a cross-product hedge fund sales team. Certain banks have merged prime services with custody or fund administration to create broader “Investor Services” businesses, with integrated sales and service organizations. Many investment banks have integrated aspects of equities and fixed income to create “Markets” businesses, which often include sales coordination across all of the trading products.
Investment bank transformation: from ideas to action

Successful investment banks are currently addressing a key set of initiatives to build or, more likely, enhance client profitability analysis and the infrastructure and organization around it. As the interrelated regulatory constraints on balance sheet and other financial ratios have come into play, analysis of client profitability and related metrics has become more complex and more critical. Banks must enhance the breadth and detail of client revenue and cost data they can aggregate, automating these processes to the extent appropriate. They must understand the client behaviors and other drivers of key revenues and expenses, so as to better manage these internally and in partnership with key clients. In addition to client-level profitability, successful banks are creating and using client-level ROA, contribution to LCR, and other more sophisticated metrics. Acting on their client profitability analyses, successful banks are restructuring client tiers, facilitating sales conversations with clients to enhance profitability and re-pricing (and dropping) certain accounts. Banks are also changing the expectations and organization of sales and service to best capture, grow and serve the most profitable accounts.

Continuous improvement areas

- Aggregation of client data
- Enhancement of client metrics and drivers
- Actionable reporting and processes
- Client pricing, tiering and service levels

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Be technology-led
Rethinking the data model to support legal entity management

by

Jaruwat Rujipornwasin, Rui Bao and Sofia Khobot
Abstract:
The regulatory environment developed over the past few years requires banks to measure, manage and plan their businesses based on their legal entity structures. In addition, many banks have changed their legal entity structures as part of a strategic response to this regulatory environment and its capital and cost implications. Bank data, however, has generally been managed and processed on a product or business basis – which is often incongruent with the current legal entity-based regulatory requirements. Restructuring their data governance, processes and applications around legal entity requirements is a large and complex undertaking for many banks, but adherence to critical leading practices can minimize the expense of implementing and maintaining legal entity-based data. Making legal entity data processes part of a broader, strategic bankwide program around legal entity structure, booking models, governance and business resolution planning will confer additional strategic and cost advantages.

Given the evolving regulatory requirements around resolution and recovery as set forth by the Federal Reserve Board (FRB), banks are placing greater emphasis on reviewing and challenging their current legal entity structures in the context of resolvability. In light of this changing landscape, while banks continue to advance legal entity rationalization opportunities across jurisdictions, they also have started to review structural changes through the lens of resolvability, with the goal to simplify their underlying legal entity structure and to demonstrate “ease of resolvability.” As the regulatory focus shifts, banks will require the capability to measure, manage and plan their businesses on a legal entity basis, which will necessitate restructuring data governance, processes and systems around legal entity requirements (on top of traditional business/product view). This is expected to be a large and complex undertaking for many banks. However, by embedding legal entity data management as part of broader, strategic bankwide programs centered on legal entity structure, booking models and business resolution planning, banks will achieve additional long-term strategic benefits and cost advantages.

How regulation created a data challenge for banks

Investment bank senior management continues to be challenged to design operating models that simultaneously optimize global/regional constraints (e.g., capital, tax and client demands) in the face of significant regulatory change, while maintaining well-controlled data management processes. Banks need sufficient legal entity-based reference data, financial and accounting data, risk data, and management data in order to develop solutions that demonstrate resolvability under market stress and resolution scenarios. Banks must have the necessary data management processes in place to identify and assess material legal entities (MLEs are defined by the FRB as “entities that are significant to the maintenance of a Critical Operation or Core Business Line.”28) across multiple jurisdictions in terms of their financial and operational interconnectedness and separability among key legal entities. To operate successfully in the evolving regulatory environment, banks must have a sustainable legal entity data governance solution that is controlled, optimized and flexible.

28 Section 165(d)(8) of the Dodd-Frank Act.
Managing legal entity-based data effectively and efficiently

In order to comply with current regulatory requirements, banks must implement legal entity data models that can effectively and efficiently support MLE resolvability efforts. The first step in this process is to understand the organization’s relevant data, which is typically dispersed across the organization. Next, a bank should establish a target state that rationalizes and optimizes legal entity data and controls. Given that the ownership and management of legal entity-based data may be spread across businesses and functions, this effort will require cross-functional coordination involving key stakeholders across the organization. Once the optimal target state is agreed upon and a gap analysis has been performed, the appropriate remediation efforts should be taken, such as data cleansing, removal of duplicate systems, standardization and appropriate selection of vendor solutions/custom-built applications. These key three steps are further described in detail below.

1. **Identify and categorize legal entity data**

The data necessary to manage legal entities and facilitate resolvability may be spread across different businesses, functions, systems and databases. In addition, data governance and controls may vary in different parts of
the business. The first step in understanding legal entity-based data will be identifying, categorizing, aligning and aggregating key data across each of the in-scope MLEs. Challenges to this process may include lack of common legal entity data taxonomy and definitions, insufficient documentation of manual processes used to manipulate or transform legal entity data and the inability to identify key sources of legal entity data.

It is important to approach this initial data analysis effort using a consistent and comprehensive approach so as to avoid backtracking, as well as to mitigate subsequent challenges such as cross-system data inconsistencies. The following activities are important to successfully complete a comprehensive current-state analysis of legal entity data:

- Define the types of data necessary to manage and resolve MLEs
- Trace and document the data lineage (e.g., the feeds/files, data elements in the feeds/files, and input-to-output traceability mappings)
- Document the planned controls to be implemented to achieve complete, accurate, timely, adaptable and comprehensive legal entity data
- Validate that the data lineage and controls information are correctly linked and documented

2. Define target state data flows, applications, processes and controls

Once an organization has successfully mapped the legal entity data lineage, there may be opportunities to rationalize the various data flows. These should be incorporated into a strategic target data flow architecture (i.e., data flows and related controls). Banks should consider consolidating feeds and sourcing from an appropriate and authoritative data store (e.g., source finance data from an accounting subledger instead of a risk warehouse), while manual feeds should be inventoried for future automation goals as part of this effort.

Key data stores must also be understood in the context of interconnectivity and separability. Answers to questions such as those listed below will contribute to the design of the target state legal entity structure.

- In the event the organization is required to resolve one or more legal entities, will the affected entities and their parent still be able to effectively manage and report on their risk?
- Will the centralized data stores be at risk if operational processes can no longer maintain or control the data?
- Will systems and data stores be flexible enough to accommodate new reporting requirements?

Organizations rationalizing legal entity data controls may also need to revisit the minimum control requirements around completeness, consistency and accuracy for legal entity data. Often, these processes and controls are designed and implemented to provide coverage by trading product, book, desk or corporate business unit. For example, a business unit may rely on compensating accuracy controls performed by a centralized group and continue to demonstrate adequate data controls within its realm of accountability. However, if an individual legal entity is resolved, the existing entity can no longer rely on these centralized processes and controls. As data flows change under the new structure, the legal entity will need to identify or implement new controls internally or be faced with potential control gaps that will impact the completeness, consistency and accuracy of its legal entity data.

In defining the target state legal entity data flows, applications, processes and controls, banks need to consider additional questions such as the following:

- What are the authoritative sources of data, and will they be available once a legal entity is resolved?
- How can the dispersed feeds across the organization be rationalized and consolidated to enable ease of separation and limit interconnectivity risk?
- Who will be responsible for the data quality controls in this future state if there are significant numbers of centralized processes and controls?
- Where will the compensating controls be located and executed once the legal entity is resolved?
- How will the lineage and controls be tested on a periodic basis if an enterprise-wide team was previously responsible for these activities?

3. Establish corporate-level sponsorship and governance

Legal entity data projects must be sponsored at a senior level within the bank, and they require clear and accountable board, executive and management oversight (at both the enterprise and legal entity levels) on an ongoing basis. Implementation of the target state data model is often a complex, cross-enterprise organizational effort made even more challenging given that legal entity data usually span multiple businesses, operational groups, control functions and ongoing regulatory projects (e.g., BCBS 239 – Risk Data Aggregation). Key decisions to rationalize, consolidate and implement new data flows, processes and controls to support legal entity resolvability will need to be made at an organization’s executive level. The implementation itself should be a cooperative effort among data providers, consumers, and other key stakeholders and, once implemented, the organization will need to continually assess the data model and make necessary adjustments to continually meet the evolving regulatory requirements.
Key success factors at organizations undergoing this transition

Organizations that successfully implement legal entity-based data and controls also benefit by demonstrating that legal entity data is embedded into the bank’s broader, enterprise-wide data governance and management program. Enterprise-wide data governance is critical to achieving clear data ownership and stewardship, which, as a result, will increase transparency and improve the effectiveness of legal entity data management controls.

Such organizations will also attempt to create sustainable methods to collect and analyze the data lineage and controls around legal entity data. Tools for collecting and documenting the lineage of data and the corresponding controls can range from spreadsheet-based templates to dedicated applications. However, banks need to understand that this is not a one-time exercise and that tactical approaches may not be scalable if the size of the organization or the scope of data increases. In addition, the process by which this information is collected will determine whether it can successfully pass quality assurance reviews and be easily traced, indexed and reviewed.

Banks must also create and manage formal change processes related to legal entity data. Official and documented methods must be used to capture changes or escalate exceptions through the governance process. Banks must also allow for appropriate flexibility for businesses to implement local governance routines in order to communicate among legal entity data providers and consumers. This is a delicate but important balance that maintains traceability for audit purposes, yet is nimble enough to enable decisions in a timely manner.

Successful organizations will also centrally develop and distribute the tools and methodologies used to capture data lineage and controls around legal entity data. This allows for relevant documentation to be easily and systematically reviewed, validated and analyzed. The organization should minimize the implementation of “tactical” tools or “stopgap” solutions.

Key legal entity data success factors

- Make legal entity data part of enterprise-wide data initiatives
- Create sustainable data collection, lineage and control processes
- Establish governance process for change and exception management
- Centralize tools and methodology development and distribution

Testing and governing legal entity data controls

Legal entity data governance is an ongoing and integral part of the legal entity strategy and business controls. Legal entity data governance stakeholders should include control functions, technology teams and business representatives. Banks must have a well-defined agreement from key stakeholders on how the periodic testing of legal entity data and controls will occur. This must be a coordinated process across internal/external audit, business and technology staff.
The evolving regulatory and competitive landscape will drive an ongoing need for banks to manage their legal entity structures and booking models, while continuing to meet regulatory requirements and strategic business goals. The optimization process should take into account business strategy, regulatory compliance, operations and infrastructure, tax, capital and liquidity, risk management, and resolvability. Legal entity structures may evolve further, as banks need to establish regional intermediate holding companies or otherwise demonstrate local capital and liquidity adequacy. Consequently, legal entity data management and controls should not be considered a mere one-time regulatory compliance exercise, but rather one that requires ongoing, effective process and governance. By utilizing these key success factors, banks will be able to target and subsequently implement legal entity data management that meets near-term regulatory requirements, as well as establish a robust long-term foundation for flexible legal entity structures and booking models to support future regulatory requirements and business strategies.

Making legal entity data part of a legal entity strategy

Designing a periodic testing regime must include defining who will be responsible for data testing, linking testing to the data lineage documentation effort, and reconciling controls documentation to the overall testing effort. Controls testing should be prioritized to support the specific regulatory legal entity requirements around completeness, consistency, accuracy and timeliness of data. The testing approach must be confirmed with key stakeholders and draw on valid test conclusions to confirm that the target state will meet requirements under legal entity resolvability.

Production, transmission and controls around legal entity data will be a shared responsibility across the business and the technology teams. It is critical that the entire documentation and validation effort establish clear lines of accountability, and that these responsibilities be made part of the organization’s governance framework for data management. Data owners must have the ability to effect the necessary changes in systems, processes and controls. In addition, the business must understand any impact these data issues will have on RWA or capital levels. When data issues or controls span multiple areas, the necessary managers and resources must be made available to address issues and remediation.

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The road forward for futures commission merchants

by

Thomas Zaldivar, Barry Kraver and Rachel Elgawly
Abstract:
The futures commission merchants (FCMs) industry is facing several challenges, including a large number of global regulatory changes, continued industry contraction and a reduction in revenue due to the low-interest-rate environment. These challenges threaten an FCM’s long-term sustainability. To improve profitability and achieve growth, FCMs will need to review their business models, meet ongoing regulatory and capital changes, initiate programs to obtain technology and operational efficiencies, and find ways to satisfy current and future client needs while reducing internal costs.

What has happened to FCMs

The futures commission merchants (FCMs) business model has been challenged as revenue has eroded under the pressures of the current regulatory framework and low-interest-rate environment. Enhancing the profitability of FCMs will require coordinated changes to technology, margin offerings, product mix and client service. Providing a competitive offering requires overcoming the increased operational and technological burdens to support both the existing, listed futures and the new, cleared OTC derivatives businesses. With the recent industry consolidation, creating client and competitive advantage remains a challenging proposition without optimizing capital efficiency, reducing operational and technological costs, or increasing process efficiencies. FCMs will need to execute on strategic business models to reduce costs and increase profit margins, while making changes to the products and services available to their customers. Throughout the remainder of the article, FCMs will refer to both the listed futures and OTC clearing businesses.

Commodity Futures Trading Commission (CFTC) Commissioner Christopher Giancarlo highlighted some of the key challenges facing FCMs in his June 1, 2015 Statement for the Market Risk Committee Meeting.29 He emphasized the importance of FCMs but also the vitality of FCMs and their overall long-term sustainability. In his opening remarks, he indicated, “Today, because of a combination of mismanagement by a few [FCMs], US monetary policy and over-regulation, FCMs are consolidating at an alarming rate with dire consequences.” These forces have impacted FCMs’ ability to generate interest revenue, increased the operational costs of meeting compliance requirements and increased their capital costs. “With fewer firms serving a bigger market, risk is being more concentrated in the largest, bank-affiliated firms, increasing the systematic risk that Dodd-Frank promised to reduce,” noted the commissioner. He cited the fact that the top three FCMs in the OTC derivatives market account for 50% of that market, the top five FCMs account for nearly 70% of the market, and the top 10 firms account for 97%.30

The FCM business model had long been established prior to the 2008 credit crisis. In July 2010, Congress passed the Dodd-Frank Act Wall Street Reform Act, intended to provide increased transparency and regulation to the OTC derivatives markets.31 As a part of this reform, most OTC derivatives would become required to be cleared through clearinghouses, similarly to listed futures, thus further increasing the importance and reliance on FCMs in the market. Additional changes as part of global regulatory reform have limited the ability of FCMs to invest client collateral and increased the capital charges that clearing businesses attract. The failure of MF Global introduced a further set of regulations covering the protection of client assets. These changes created new opportunities for FCMs but introduced challenges to the traditional FCM business model.

Post-2008, banks reviewed their derivatives trading businesses and mobilized large-scale programs to address the requirements of Dodd-Frank. FCMs competed to build out and onboard the OTC derivatives trading community to win market share of the clients’ derivatives clearing business. As part of the build-out, FCMs invested significantly in new or retrofitted technology to serve this business. Some FCMs provided clients with incentives to production-test their trading to better familiarize them with the anticipated processes with the goal of securing their OTC clearing business. A significant by-product of these builds often was disjointed processes and systems, with banks staffing and attempting to support two businesses. In part due to market uncertainty as to the final regulations and the potential business opportunity, banks focused on tactical operational and technical solutions. FCMs that have been unable to manage change strategically struggle to control costs, navigate the regulatory and capital challenges, remain competitive and maximize revenue opportunities.

The road forward

In debating the way forward in terms of competition, minimal revenues and the up-front costs of setting up OTC clearing businesses, many FCMs will undoubtedly reassess their position regarding this business. As firms have come to fully understand the associated capital, operational and regulatory costs associated with OTC clearing, there has been contraction within the industry. As of March 2015, only an estimated one-half of FCMs (72 registered FCMs and 15 more inactive) are registered, compared to pre-2008 levels (154 registered FCMs).

Although market consolidation otherwise paints a pessimistic view of the FCM business, industry data shows a trend in increasing clearing volumes for both listed futures and OTC derivatives. The March 2015 Futures Industry Association’s 2014 FIA Annual Global Futures and Options Volumes publication indicated a 1.5% increase in volumes globally and marked the second year in a row volumes have increased. This growth was paced by a 4.6% increase in volumes for the US and Canadian markets, with the CME Group volumes rising 8.9%. OTC derivative volumes similarly show an increase. For the first half of 2015, volumes for 10-year vanilla IRS swaps reported were higher than any previous six-month period since reporting began in January 2013. In 2015, projected volumes are on pace for a 15% increase over 2014 volumes, which is more than a 75% increase over 2013 volumes.

Coupled with potential, near-term rises in interest rates, this presents an opportunity for the remaining FCMs to capitalize on a less competitive market. To maintain and grow their FCMs’ profitability in the current environment, banks must focus on (1) managing capital costs and taking advantage of applicable cross-margining offerings to reduce RWA, (2) improving the efficiency and coverage breadth of technology and operations platforms, and (3) readjusting their focus on product offerings to best align with their most profitable client segments.

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33 http://www.cftc.gov/PressRoom/SpeechesTestimony/giancarlostatement060115.
Managing the new cost of capital

While the remaining FCMs struggle profit-wise as they assess their businesses going forward, firms can no longer measure performance based solely on revenues or operational efficiency. As a result of Basel III regulatory charges, we now see FCMs’ regulators and shareholders more focused on three key measures related to capital:

1. Return on equity – This ratio is the return on shareholder equity after factoring in the increased capital requirements under Basel III per the leverage and capital ratio (described below). In general, Basel III increases capital requirements, thereby reducing return on equity.

2. Capital ratio – Basel III introduced refinements to risk-based capital adequacy measures (capital/risk-weighted assets), which tightened the definition of the capital. Previously, exposures to clearinghouses were assigned zero risk weight for RWA calculation. However, under Basel III, FCMs incur modest capital charges against trade exposures to clearinghouses, which include client clearing activity as well as default fund exposures. As a result, cleared derivative transactions are now counted toward the RWA of the capital ratio, reducing it at a time when regulators prefer to raise the required capital ratio.

3. Supplementary leverage ratio (SLR) – SLR is a non-risk-based, capital adequacy measure (capital/on and off-balance sheet exposures), intended to prevent excess leverage and reduce deleveraging stress components. While the global Basel rules require a minimum 3% leverage ratio, US G-SIBs will be subject to enhanced SLR (eSLR) requirements of more than 5%, starting in January 2018. As Commissioner Giancarlo noted, SLRs will make it more expensive for bank-owned FCMs to clear customer trades. This is because the SLR requires banks to hold more capital for every asset on their books, even those held for clients on cleared trades, leading to increased cost of capital and less opportunity to generate returns on excess capital.

In addition to these three key measures, Basel III has also introduced a mandatory 2.5% conservation buffer, increasing each ratio by 2.5%. During credit growth periods, firms must also plan for a countercyclical buffer.

These increases in the cost of capital heighten the need for FCMs to pursue and, where possible, to take advantage of capital-reducing cross-margining opportunities offered by the clearinghouses to their clients. By taking advantage of these opportunities, clearing firms can net or compress eligible positions by automating allowable offsets before calling a client for margin. This compression or netting reduces the gross notional amount of a portfolio without increasing its market risk. Since gross notional amounts contribute to the capital ratio, reducing notional exposure not only reduces the overall leverage ratio, but also reduces the capital a bank must keep in its default fund.

While the capital benefit may exist within these offerings, there is a great deal of operational complexity that must be overcome to make the offerings mutually beneficial to the FCMs and their clients. Many clearinghouses offer cross-margining programs, which are intended to evaluate the risk of an overall portfolio and reduce the total margin due to the clearinghouse. For example, in listed futures, an inter-commodity spread involving different but related products reduces the risk of the overall portfolio, thereby reducing the margin owed. In 2014, the CME Group advertised that the new IRS vs. CME futures portfolio margining accounted for “… over $3.9 billion in initial margin savings across their CCP.”

The savings cited by the CME group likely represent the initial margins saved from a client perspective but also provide an indication that there is sufficient opportunity from a capital perspective that FCMs should pursue. However, to accomplish this, FCMs must be willing to invest in straight-through processing solutions or minimize the operational costs. This undertaking often requires firms to assess the return on investment and determine whether the offering makes sense.

Alternatively, some FCMs have taken measures to navigate around capital charges by moving client collateral related to their OTC clearing or futures businesses off-balance sheet. Among these firms, both UBS and Citi reduced their exposures as they related to client clearing. “In the fourth quarter of 2014, the group [Citi] changed its accounting policy with respect to recognizing cash initial margin collected and remitted to more closely align with evolving market practices.” By renouncing customer assets, banks cannot reinvest these cash assets and must forgo any interest revenue associated with these assets. This type of balance sheet management activity aims to manage the cost of capital versus the overall revenue generated on client debit balances. Whether other FCMs take similar measures will depend on their view of the future interest rate environment.


Capturing technology and operations efficiencies

Building out their OTC clearing business has yet to bear the revenues many FCMs believed they would realize. Additionally, some banks considered this business as separate and distinct from the listed futures business and created new organizations and operating models. As OTC clearing continues to mature, FCMs are addressing the need to consolidate client service, operations, collateral management, margin and technology across listed futures and OTC clearing. Technology vendor SunGard recently created a clearing utility and replaced Barclays’ middle- and back-office operations teams.38 While this is a new utility, many FCMs are seriously considering future operating models that include the use of utilities, shared services and offshore (and near-shore) teams. When operating model changes and plans are successfully executed, firms should realize reduced costs with increased synergies. However, without proper governance and program management, firms could potentially end up with a less cohesive operating model that may impact overall franchise value.

Historically, banks have typically relied on two technology platforms to support their listed futures businesses, SunGard’s GMI and ION’s Rolfe & Nolan. In addressing OTC clearing, banks were pressed to either leverage the existing capabilities of the aforementioned platforms or build new ones from the ground up. Some of the new functionality required included handling new product nuances, affirmation processing, and collateral calculations. However, evolving regulatory changes and market requirements have made the separate use or combination of technology platforms unstable, and banks must now review, consolidate and overhaul these platforms to create more reliable and sustainable technology. Reviewing both derivatives businesses together requires a holistic approach to both technology and operating models. For example, robust platforms must support a global, rolling, 24x7 business model, with less batch processing and information lag. A focus on the internal infrastructure will provide firms with the opportunity for digitization and provide clients with access to near-real-time reconciliations and portfolio views, instead of client statements and multiple ad hoc reporting solutions. This will allow an FCM to meet the challenging regulatory requirements that did not exist when the original infrastructure was built.

Focus on the costs of clients

As the costs and resource constraints affecting derivatives trading and clearing increase, successful banks will put increasing focus on identifying, increasing share with and better serving their most profitable clients. Banks are analyzing and prioritizing accounts in terms of profitability, but also ROE, capital and other metrics. (See “Getting to client profitability” article in this publication.) This prioritization is done at both the firm and FCM level and should drive the products, overall level of service, and other resources provided to clients. For example, the ideas of “white glove service” and dedicated escalation channels are becoming more common for top clients and are providing firms with opportunities to differentiate. While this type of analysis predominantly identifies top clients and accounts, metrics such as cost of carry should be used to identify the low or negative revenue generators. Banks are asking these types of clients to pay maintenance fees, maintain minimum or average monthly contract volumes or notional cleared volumes or, in some cases, developing off-boarding strategies for lower-tiered clients. It is important, however, that allocation of expenses and other facets of client profitability calculations not obfuscate the true marginal value or cost of a client – if a client leaves and the allocated costs do not, the net effect is negative. Firms historically sought to attract clients by offering competitive commission rates, volume discounts and client-friendly interest rate schedules. However, a recent Risk.Net article contends that FCMs might be increasing their OTC clearing costs by 75 basis points on the total margin as a means of handling the OTC regulatory expenses. This might include both an introductory basis point charge on all non-cash initial margin – most of the time, IM is paid in securities – and an additional basis point charge on variation margin. From a listed futures perspective, expect a similar trend as firms will look to increase commissions to offset increased regulatory costs.

Key consideration criteria for clients selecting an FCM are costs and level of service. In the future, FCMs also need to continue to match their targeted client base’s needs by offering a comprehensive product mix, both on the listed and OTC sides. This requires maintaining proper memberships or relationships with global clearinghouses. CME, ICE and Eris are clearinghouses that continue to introduce new products. While a majority of these new products are struggling to maintain significant trade volumes as firms and clients assess the ROI, their creation and marketing provide indications that markets and client product needs will continue to evolve. As such, FCMs must have market access and a full suite of products to match their current and future client needs.

Succeeding in a harder business

Clearly, FCMs are reassessing how to determine acceptable profitability and other fiscal objectives in an increasingly challenging environment. Regulation, complex processes and operating models, and the capital requirements of Basel III have added to the difficulty and financial hurdles of this industry. Paradoxically, although aimed at strengthening financial markets, Basel III is also testing the industry in its resolve to remain committed to clearing products that may weaken the capital and leverage ratios for the firm. The introduction of the leverage ratio, along with the tighter definition of the CET1 capital ratio and the additional clearing contribution to RWA, motivates clearers to either find new solutions or consider exiting this business.

For FCMs that remain, success will require a carefully tuned combination of optimizing their technology and operations platforms, leveraging cross-margining and other balance sheet tools, and aligning their products, sales, trading and client service to the strategic client segments with which they can sustain profitable relationships.

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Shining a light into dark pools

by
Ravi Karra and Andrew Hosking
Abstract:
The inherent nature of dark pools has led to concern around whether users may be left open to manipulation due to their reduced transparency. In the US, multiple dark pool operators are being investigated for potentially violating rules around dark pools and alternative trading systems (ATS). Skepticism from investors and regulators around limited-display venues has heightened their focus on dark pool operations and the controls necessary to safeguard their investors and customers. Dark pool operators are now looking at reshaping service models, including increasing focus on surveillance to promote fair markets, and, if successful, will grow to be an even more important part of the trading process. This article discusses approaches around pricing, connectivity, order types, client segments and controls and how firms can restore trust in their dark pool operations by using third-party reviews of these processes and controls.

“Dark pools” is an implication-laden name for a collection of non-traditional equities trading venues in which bids and offers and their prices are not publicly disclosed. Although dark pools offer potential trading advantages to equities buyers and sellers who don’t wish to expose their trading intentions, their nature has led to concerns around whether users may be left open to trade manipulation due to their reduced transparency. In the US, multiple trading venue operators are being investigated for potentially violating rules around dark pools and alternative trading systems (ATS). Market skepticism around such limited-display venues has heightened the focus on dark pool operations and the controls necessary to safeguard their investors and customers. Dark pool operators must audit their internal systems, organizational behavior and related control practices to assess their venues’ performance and to validate the benefits delivered to customers. By leveraging independent advice and assurance, dark pool operators can restore trust in their operations and gain competitive advantage based on unbiased, third-party reviews of their processes and controls.

Proliferation of dark pools

The adoption of the Alternative Trading Systems regulation (Reg ATS) and the National Market System regulation (Reg NMS) were watershed events for the US equity markets and have encouraged newer and faster electronic trading centers to compete with the incumbent exchanges. Since Reg ATS and Reg NMS came into effect, a wide variety of new trading venues have been established. In Europe, the adoption in 2007 of the Markets in Financial Instruments Directive (MiFID) similarly led to increased competition and a fast expansion of equity trading centers. Over the past decade, major equity markets have been transformed by the forces of technology, regulation and globalization into broader and differentiated sets of competing trading venues. The way in which investors, market participants, intermediaries and trading venues interact is highly automated and critically dependent on speed. The dominance of incumbent exchanges has been eroded, and liquidity has been segmented across numerous trading venues as competition has intensified. In this environment, off-exchange trading, including broker/dealer internalization and dark pools, has grown significantly. “Dark trading” (away from public exchanges) in the US is estimated to account for approximately 38% of consolidated volume as of March 2015, a growth of around 48% since the start of 2009. This growth in dark trading raises concerns over transparency, fairness, investors’ access and the basis for competition with traditional exchanges.

**Dark pool concerns**

With the rise of dark pools, there have been customer concerns about the pros and cons of non-displayed trade orders. The transformation of US equity trading from a market dominated by just a handful of conventional stock exchanges to one involving dozens of dispersed trading venues has enabled dark venues to compete increasingly well with traditional exchanges in US-listed equities.

There have also been both client and regulator concerns raised about the interaction of “dark” and “display” trading and how this might affect the integrity and quality of the overall markets. Regulators around the world have voiced concerns about dark trading, including the US Securities and Exchange Commission (SEC) in its equity market structure concept release (2010), the European Commission in its 2011 review of the Markets in Financial Instruments Directive, the International Organization of Securities Commissions (IOSCO) in its report on dark liquidity (2011), as well as regulators in Canada and Australia in their reviews of their respective market integrity rules. Some of these jurisdictions have already acted, and there are new rules in place that put additional limits on off-exchange trading and heighten the relationship between dark trading and overall market quality in order to inform public policy issues related to undisplayed liquidity and market integrity.

**Market demand for controls**

These client, market and regulatory expectations (e.g., the recent SIFMA, FIF, MFA and ICI recommendation on a common set of order-routing templates) are reshaping how dark pool operators comply with some of the same requirements exchanges face, the information they disclose to customers, and how they test and document the behaviors of their dark pools. Two example areas of concern regarding dark pools are the disclosure of order types available on the platforms and the sources of pricing data. Some order types that allow traders to post orders that remain hidden have the increased potential for computerized trading firms to take advantage of other investors. As for price feeds, there are two main types: the nationwide services that aggregate information from all markets, and the direct feed each market offers for a fee. Because the former is slower given the delay imposed by collating the information, the fastest traders subscribe to each direct feed so they can know about price fluctuations as quickly as possible. Dark pool customers are now asking to review the methodologies, rules and controls within the dark pool venues and may move business away from venues that either do not have sufficient controls in place or cannot evidence the effectiveness of those controls.

Dark pool processes that facilitate the interaction of passive and active liquidity (i.e., order flow) have also come under client scrutiny and market investigation. US trading venues compete for both passive, liquidity-providing clients (e.g., a bid to buy or a limit order) and marketable order flow (e.g., an order to sell to the highest bid) under operational rules to enable a customer’s limit order to establish a trading venue’s best offer or best bid. Brokers or trading venues receiving market orders must route them to the venue having the most competitive best bid or best offer across all exchanges. While dark pool venues differ in how they match trading interest, their business models rely on the ability to match marketable orders from institutional investors against each other inside of the NBBO spread. According to Tabb Group (2015), prominent dark pools, such as Barclays DirectEx, IEX and BiDs, report that more than 70% of their trades are done at the NBBO midpoint. While midpoint execution is ostensibly better pricing for a market order than executing at the NBBO, sending an order to a dark venue may create execution risks compared to the certainty of accessing an exchange’s displayed liquidity.

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46 Larry Tabb and Jerome Johnson, Crouping In the Dark: Navigating Crossing Networks and Other Dark Pools of Liquidity.
Assessing dark pool quality

For many dark pool trading clients, venue quality is a combination of trade execution performance in terms of time and price; the venue’s protection of clients’ anonymity; the speed, latency, and throughput of connectivity; and the availability of order types. The perceived benefits of anonymity include the prevention of information leakage, resulting in little or no price impact from the client’s order. Other considerations are price and size executed and whether better execution was achieved inside the pool than through a primary (displayed) market. Quantitative evaluation methods measuring whether a dark pool disadvantages certain clients – for example, by providing preference to high-frequency traders (HFTs) – are critical in understanding the quality of a venue. Evaluation metrics must assess the potential for information leakage, for example, by analyzing whether faster traders are able to detect large orders and trade on that knowledge before they are executed. Monitoring potential latency arbitrage opportunities created when HFTs use speed to trade ahead of customer orders, and implementing controls to aid in algorithm detection will prevent large orders from enabling limit-order book manipulation. Conducting such post-trade analysis is essential to understanding the value a dark pool delivers.48

Given the broad demand for better assessment and explanation of dark pool activities and controls and the inherent complexities of these venues, there is an opportunity for dark pool operators to proactively review and document the effectiveness of their policies and controls. This may assuage client and regulator concerns and could become a factor in client selection of trading venues. Dark pool venues can seek independent advice and assurance on addressing the calls for enhanced scrutiny of their liquidity provision and operations. Third-party reviews of internal systems, organizational behavior and control practices will enable venues to evaluate the execution quality, surveillance controls, customer disclosure and price discovery that they provide. If done broadly across dark pools and other alternative execution venues, third-party reviews would enhance transparency across order types, venue connectivity and liquidity for equities market-makers and customers. This would also enable targeted assessment of the activities of participating liquidity providers, such as internal bank quant desks, and external providers, such as HFTs. Evaluating key measures for venue information leakage, latency and gaming would allow dark pool operators to generate a comprehensive analysis of their venue quality.

**Effectiveness of controls**

Detailed analysis of order routing and pricing information to detect instances where customer orders may be disadvantaged will drive intelligent direction in enabling the next generation of smart order routers to utilize venue characteristics and relevant regulatory rules. Some regulations and new rules for improving market transparency and disclosure (e.g., Reg NMS, MiFID I, MiFID II) direct trade flow in certain directions and have the potential to indirectly increase the opportunities for HFTs. Built-in rules to intelligently direct flow to quality pools and posting specific types of orders to pools where orders are most likely to benefit will become standard. Since a firm’s internal quality analysis within a dark pool may not necessarily be made publicly available, performing daily monitoring of quality levels and reclassification of participants’ risk profiles will enable transparency of pools’ authentication and effectiveness.49

Comprehensive examination of control processes by venues will also enable operators to enhance existing surveillance control to detect and prevent predatory trading behavior. Venues must identify and catalog existing preventive and detective surveillance controls in order to accurately assess coverage and completeness. The measurement of key controls must be comprehensive with key gaps documented in order to develop remediation strategies. Any control weaknesses or breaches identified should be addressed. Such reviews will help manage operational and regulatory risks, and may also increase the confidence of users of the dark pool.50

Investigation and review of dark pool marketing materials for potential misrepresentations can further assess whether a venue is operating accurately and consistently with disclosed practices. Development of a scenario inventory and test cases will help identify gaps in venue behavior and aid remediation. Validation of internal documentation to identify documented functionality and capabilities provided to customers may also increase confidence in dark venue effectiveness. The functional quality and accuracy of dark pools can be assessed by comparing the venues’ requirements and specifications with the effectiveness of their processes and controls as outlined in their documented procedures.

49 Ibid.
50 Ibid.
Regulators will likely mandate that firms perform some of these assessments, and a proactive approach to dark pool processes will help restore confidence and trust with investors and regulators and could reduce the risk and costs of future enforcement action.

Many factors can contribute to variance in the quality of dark pools for customers, including the type of flow and participants in the pool, the types of trades being done, market making, and the volatility and momentum of the stocks. Deeper analysis is needed to truly understand these variables and their impacts on quality within individual pools. Operators seeking critical, data-driven assessments of processes and controls could initiate independent reviews and analyses to uncover any key gaps versus client expectations and regulatory compliance. As a result of recent market events reshaping dark pool service models, there is a heightened focus on dark pool surveillance to promote fair markets. Still, dark venues are likely to grow to be an even more important part of the trading process, enabling the buy-side to deliver price improvement and liquidity while protecting anonymity. EY believes that firms can restore trust in their dark pool operations and also gain an advantage over their peers by using third-party reviews of processes and controls. Where issues are identified by the reviews, early remediation will be possible. Firms may also be able to better manage inquiries and reviews by regulators where they have been proactive in seeking independent advice and assurance to uncover and address any gaps between expected and actual behaviors.

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