Financial Markets **INSIGHTS**

Smarter Operations: Why Middle Office needs to become the New Front Office

In this article, Mike O'Hara and Adam Cox of The Realization Group look at the future of middle-office systems for banks and trading firms. Many of these companies are now relying on hodgepodge solutions, systems that essentially rest upon legacy technology and have been in need of modernisation for years. It's hardly an optimum state of affairs and the impact can be enormous. To give a simple example: If a firm needs to overcompensate because its overnight collateral calculations may be ever so slightly off, it can result in millions of dollars' worth of extra collateral being posted. Meanwhile, as regulatory requirements have increased, demands on middle office systems have risen. Relying on legacy architectures is unsustainable. But what technologies and approaches should firms take?

Mike and Adam canvass the views of a group of experts to find out. They talk to ***Chris Wells****, Head of EMEA Middle Office at Nomura,* ***Julie Carruthers****, Head of Operations, Global Broking at TP ICAP,* ***Julian Bennett****, ETD Product Strategy Director at Nex Traiana and* ***Simon Vincent****, Head of Strategic Accounts - Financial Services UK&I at Software AG. The business case for focusing on the middle office has arguably never been stronger.*

Introduction

Middle office systems are creaking.

These risk management, collateral management and reporting systems are groaning from the strain of ever-increasing requirements. As the number of users hitting the systems has grown, firms historically have simply added more horsepower in the form of servers, databases, memory and CPU. And as new functions have been required, they've added layers of applications. But throwing hardware and software at the problems only buys time. Many firms do not even have a clear understanding of all the processes their middle offices perform and where there are efficiencies to be had.

Historically, front offices have been the priority for banks. After all, this is where the revenue comes from so technology budgets have been devoted to ensuring those systems are state of the art. But a focus on making the middle office smarter can reap much bigger benefits than many firms may realise.

The way forward, experts say, starts with mapping out workflows and processes. Only then can decisions about future systems and operational models take place. The good news is that the efficiencies to be had are substantial. Due to the way that different upstream and downstream systems flow into and out of the middle office, eliminating duplication and manual intervention can result in multiple savings in different parts of an operation. Beyond that, there are tantalising possibilities involving the cloud, agile technology and microservices. In other words, driving the middle office into the future has only just begun.

Solutions in search of problems

Simon Vincent of Software AG is in no doubt that technology can do great things for improving middle office operations. But the initial task at hand is not so much a matter of finding the right solutions. First, a firm needs to know what the right problems are.

“If technology is in a position to solve some of the challenges that many of the middle and back office operations staff have, then what should those be?” Vincent asks. “Should those be screen-scrapers? Should it be more than that? Is it operational processes that need to be improved and therefore need changing? What exactly is it that needs to happen?”

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For Vincent and other middle office experts, the answers to those questions start with understanding exactly what workflows and processes are taking place. “Once you understand those processes, then you can start looking at how those affect the systems and what changes need to be made to those systems to enable you to be more efficient,” he says.

Chris Wells of Nomura echoes that sentiment and notes that the question of workflow is made all the more acute in the case of the middle office because of its position as the link between other departments, entities and systems.

For both of these executives, the key ingredient in a winning formula is to be found in dissecting the essential functions of the middle office.

For instance, a core part of what needs to happen is the normalisation of data. Firms need the middle office to be able to understand and match client and counterparty data and to be able to work across asset classes. The linkages that need to be established – between systems, between departments and between entities – and the rules that need to be put in place determine workflows and processes. That in turn determines what the systems must do.

“If you think about your favourite recipe for apple pie, or whatever it may be, if you follow that every time to the law, it should produce exactly the same thing every time,” says Vincent.

Creating such a “recipe” is what process mapping tools allow a firm to do. “If you’ve done that definition and defined it and understood where your business challenges are, you then have what’s called the current operating model. You’re then in a position to say, ‘What’s my target operating model? How can I make efficiencies across this?’”

In the meantime, one thing seems abundantly clear already. The lack of attention on middle office systems in the past has made the need for change now all the greater.

Julian Bennett at Nex Traiana, which specialises in post-trade processing, risk management and regulatory compliance, says that in the futures, options and exchange-traded derivatives space, middle office platforms have barely changed over the years. “Yes, there have been updates, but they are monolithic builds. There’s been no real functional development.”

Faster trade cycles

One driver that is helping to make the business case for improved middle office systems is the move to faster trade cycles. Europe, under MiFID II, is set to move to a T+1 standard, while the Securities & Exchange Commission in the United States in March announced it would adopt a T+2 standard (www.sec.gov/news/press-release/2017-68-0). While many firms are already operating at T+1, the goal is to get ahead of the curve and ultimately create T+0 based systems.

"The key question that we're trying to answer is: What do we want our target state to look like?" says Wells. "If you look at it traditionally, there's been a number of T+1 processes and controls that have run in parallel with T+1 batch-based reporting systems. And that's where we've come from. Where do we want to go?"

That question is usually answered by considering the potential for efficiencies.

Bennett of Nex Traiana says the kind of savings that firms are hoping to achieve will require new architectures. Banks would like to be able to get billions wiped off of their balance sheets. "That cannot be achieved with existing legacy technologies and architectures," he says.

Vincent notes that T+0 requires the entire ecosystem of clearing middle office operations to be working at the same pace. He says even some of the antiquated systems in place could probably handle that, but there would be so much involved in terms of manual processes that it would slow everything down.

In that sense, some middle office experts see a silver lining in the onslaught of new regulatory demands because it has strengthened the business case for retooling operations.

"Regulation is mostly about data integrity and the data being correct between your systems," says **Julie Carruthers** of TP ICAP. "It's allowed us to demonstrate to people how important all this stuff is."

As an interdealer broker, TP ICAP's middle office operations have some similarities with banks and also some differences. Banks and IDBs both need to perform trade reconciliation reports. But as IDBs sit between their clients and engage in broking, they do not generally have the same risk management and monitoring of corporate events that banks do. At the same time, their focus on customer relationships means they may need to produce more bespoke reports for different clients. This creates its own set of processes for the middle office.

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> Chris Wells, Nomura

A 25-year veteran of the financial industry, Carruthers says the shift in perceptions about the importance of post-trade operations is noticeable not only at her firm but at many other firms. In one way, regulation has helped that shift to occur. "You don't struggle for sponsorship of these types of initiatives now, because we have to meet the standards of our regulators," she says.

Wells at Nomura adds that regulatory change has acted as a catalyst. "It's a good driver. At the same time, it also significantly increases the importance of getting it right first time."

Making the case

As firms set about to make their business cases, they need to do what any business unit does: quantify the rationale for a project. In terms of middle office operations, this brings its own challenges.

Wells at Nomura, for instance, notes how certain issues will only come through on email, which is effectively off the grid of standard exception management or workflow systems.

Across this complete population of work effort, the challenge is knowing where to start. One method to address this is to initially implement workflows that track manual interventions. By doing this then "widgets of work" can start to be measured and this information can be utilised to assist in priority decisions.

For example, once a firm has done that for, say, 10 processes, it can start to see that maybe Process 1 involves 50 widgets of work, whereas Process 2 might only have 5 widgets of work.

That immediately tells the firm where the most value is to be had in automation. This approach then avoids the need to identify workflows for each and every situation that might involve the middle office. "Trying to map everything out would take you years and delay the all-important implementation," he says.

After the process mapping takes place, the scope for savings becomes much clearer. A bank will have market risk feeds, profit and loss feeds and reconciliation feeds that happen at T+1. Wells notes that one error in a trade booking could manifest itself in each of those three different areas, and require manual effort three times to correct it. That manual effort may involve multiple staff members, further boosting the staff hours involved.

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A given firm may conduct tens of thousands, or even hundreds of thousands, of transactions in a day. A typical error rate might amount to 10-15% of that, illustrating the scale of the potential efficiencies if some of corrections can be automated or avoided.

Carruthers, meanwhile, stresses the importance of key performance indicators. TP ICAP compiles KPIs on straight-through processing, reconciliation breaks and exception management; but she sees scope to do much more. "We're definitely moving into a new phase now about where technology is going to help us, and by that I mean AI and robotics and process excellence."

The TP ICAP executive speaks of going "up a gear" in the automation space. "We're definitely looking to show KPIs across that to demonstrate the business case."

Demonstrating such a case – for a part of the operation that historically has garnered less attention from top management than the front office – remains a critical challenge. As Vincent at Software AG says: "The business cases have always been there; but they have to be business cases that everyone understands, as opposed to two or three people in a room."

Middle Offices of the Future

With a detailed business case and a clear-eyed understanding of workflows and processes in hand, what might banks and other trading firms want to consider in terms of technologies and transformation projects? Executives point to a variety of solutions and scenarios that can help them achieve more savings – whether via efficiency, better collateral management or other methods – than is currently in scope.

But first, firms need to be able to articulate the future operating model. Wells, for example, has a vision for what a middle office could look like in the future, one that is in stark contrast to the current scenario for many firms whereby errors are discovered retrospectively through fails, complaints, aged KRI data and email.

"Where I would truly like to get to is where you operate your middle office from a dashboard. You get a red box flashing up where something has not been done on time, or something is amber where it's approaching a problem, e.g. if it's not done within an hour's time," says Wells. "Only then you can truly manage by exception."

Nex Traiana's Bennett sees numerous technologies to help banks build better middle offices, although he is quick to point out that in some cases more work needs to be done before the industry will embrace some cutting-edge technology.

The idea of having one immutable record of data, one which everyone is reading or working from, "definitely has a lot of legs", Bennett says. By not taking a copy of data but using the same source data, a firm is reducing the need to reconcile and match trades all the time, which can add complexity and delays. Having a single data source can thus reduce the number of break points in a system.

But moving to a full distributed ledger model – despite the logical conclusion that such a system offers as the way forward – does not look viable at the moment, given the rigorous demands in terms of speed and volume that trading firms have. Bennett envisions new solutions in the next couple of years that will bridge the gap.

Another promising avenue comes from microservices, whereby an architecture relies on a series of different services to provide an application. That provides more flexibility in terms of system capabilities. Yet while firms in retail industries – notably Amazon – have embraced microservices, banks to date have been slow to adopt them. Technologists point to a general culture of caution when it comes to such new technology, given the sheer amounts of money and reputational risk at stake in any given millisecond.

Still, Bennett says financial firms should be starting to consider these newer architectures. "If you want to change the workflow then you're just going to build new workflow out of new components. It is a Lego kit," he says, adding that turning that Lego kit into a fully engineered solution remains challenging.

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Teaming up

One suggestion that several of the executives make is to think in terms of partnerships.

Carruthers says it would be self-defeating not to take advantage of best-in-breed solutions that are readily available. "We don't have to do it all ourselves. So if it makes sense, and if someone's got the automation that we lack, I think it's time to think about partnerships and shared services," she says.

"We're less proprietary about the services as long as they're done well." The partnerships that TP ICAP is interested in right now involve the cloud and agile delivery.

Bennett too sees promise in cloud-type solutions. He notes that many of the middle office functions are pretty much exactly the same for hosts of firms. Shared services may be a simple way for the industry to reduce capex and opex, particularly given the large amounts of costs involved in middle office systems.

"Ultimately that's where we all need to go. If a connection to an exchange or a clearing house is done the same by everybody, there is no difference. The code might be technically different, but if you're clearing a trade and connecting via a clearing house API or a CCP's API, it's exactly the same API you're hitting," he says.

Starting the journey

For now, some firms are embarking on the journey by initiating the kind of process review that Software AG's Vincent says is so essential. At Nomura, Wells says: "We'll soon be starting to process map some of our key front to back processes where we already know that we have cross departmental challenges to then determine how inefficiencies are best eliminated." The goal is to look at workflow layers within upstream operations, enforcing accurate and timely processing that can run ahead of compute-intensive T+1 batch processing.

"Where we see the opportunity is a workflow-style system that understands that process model, and enables the T+0 timely correction of errors as they arrive, rather than the retrospective T+1," he says.

Meanwhile, as Vincent thinks about where the industry may be headed, he says firms need to bear in mind just how much, and how quickly, the industry is changing. There are new challenges, new participants and new solutions. For instance, in wealth management, clients no longer rely on independent financial advisors in the ways they used to. Now they want tools that allow them to perform their own analysis. All of that means collating more data.

"The business is changing at 100 mph," Vincent says, adding that for companies to stand a chance of staying in business, they need to be clear on several fronts. They need to have a thorough understanding of what they do now, what is working, what is not, where things can be changed and where things should not.

"It may be that year one, it costs more money," he says. "But two, three, five, ten years down the road – and that's the sort of timescales that people may be looking at – firms will be more efficient and those efficiencies will be apparent".

For more information on the companies mentioned in this article, visit:

www.nomura.com
www.softwareag.com
www.tpicap.com
www.traiana.com

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