Transforming the markets middle office

Automation of exotic-trade confirmations

Global Research & Risk Solutions

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Executive summary

In our previous paper, titled ***Transforming the markets middle office[1]***, we noted that a transformation programme would aim to achieve one of the following pillars of transformation: i) ***consolidation*** of disparate systems, data sources, and redundant processes, ii) ***increased controls*** to enable availability of reliable position, exposure, cash, and risk data for fast-track decision-making, and iii) ***regulatory compliance.***

The automation of exotic-trade confirmations, which we explore in this paper, is part of the consolidation pillar.

International Swaps and Derivatives Association (ISDA) confirmations are vital for validating trade agreements in the derivatives market.

For exotic products, these confirmations are traditionally managed manually, which can lead to inefficiencies and errors. That said, investments in advanced technology to enable automation can help enhance speed, accuracy, and cost-effectiveness.

This paper discusses the industry practices, way forward, impediments, and our solutions for automating ISDA confirmations of exotic products.

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[1] https://www.crisil.com/en/home/our-analysis/reports/2024/07/transforming-the-markets-middle-office.html

Industry practices

It is increasingly common for financial institutions to automate ISDA confirmations of vanilla and flow derivative products. They use a mix of electronic platforms and standardised processes to streamline confirmations, minimise manual errors, and ensure compliance.

Electronic platforms offer trade matching, confirmation, and lifecycle event processing. Standardised messaging protocols such as FpML (Financial products Markup Language) facilitate electronic exchange of confirmations in a standard format.

That said, exotic derivatives, known for their complexity and bespoke characteristics, present significant automation challenges. Currently, a mix of manual and semi-automated solutions are deployed to draft confirmations for exotic derivatives.

While standardised template-based systems have been implemented to generate long-form paper confirmations (or short-form confirmations where a Master Confirmation Agreement exists between the parties), such template-based systems are usually used for less-complex products.

The more-complex and bespoke trades continue to be drafted manually.

Way forward

The complexity and increasing trading volume of exotic derivatives necessitate an automated, efficient, and reliable confirmation process.

Regulations such as the Dodd-Frank Act and the European Market Infrastructure Regulation (EMIR) call for timely and accurate reporting, which is difficult with manual processes.

Automation significantly reduces operational costs and improves efficiency by eliminating manual processes (and the associated errors), reducing disputes with counterparties, and enhancing the overall integrity of the process.

Impediments to automation

Significant strides have been made in automating confirmations of vanilla and flow derivative products.

The same automation tools and additional data points can be leveraged to achieve similar results on confirmations of complex exotic trades. However, financial institutions will encounter obstacles:

- Resistance to change within institutions due to concerns about reliability and security of new systems, potential workflow disruptions, and need for significant investments in new technologies and training

- Lack of seamless trade data feed from the upstream to downstream systems due to upstream changes done to accommodate exotic characteristics of trade bookings, without consulting downstream technology partners and users

- Variability in terms and conditions as trades are highly tailored to meet specific needs of counterparties — this acts as a deterrent to creation of standardised templates

- Global regulatory standards that can vary significantly by jurisdiction and are subject to change — systems that are both flexible and scalable are required for compliance

Though some of these obstacles need a wider transformation programme, including creation of a single data source and robust data management, it is still possible to achieve the desirable level of automation in confirmations for exotic derivatives.

Our approach to automating exotic-trade confirmations

Capturing the complexity and bespoke characteristics of exotic trades through tangible data attributes can help expand the existing systems — be it electronic or template-based paper confirmation generation — to cover more exotic-product types and variants.

While financial institutions can take steps to improve in-house capabilities in this regard, the collaboration of industry participants to develop shared standards and protocols will be more effective.

An important step in the advancement of data standards and protocols is the enhancement of FpML to address the specifics of exotic derivative products.

More detailed data attributes should be created, with the ability to describe non-standard terms as well.

These data attributes could be in the form of fields (e.g., autocall barrier level) or schedules (e.g., payment dates and corresponding amounts). This will help design confirmation generation templates that cover the specifics of the payoffs that are traded.

Discrepancies and misunderstandings can be reduced largely by refining and standardising FpML to include as many trade terms as possible. This would allow seamless data exchange between different systems, facilitating smoother processing and faster generation and dispatch of confirmations.

Automation initiatives should also consider the preferences of counterparties with whom the firm is trading. For instance, in the case of non-economic elections/wordings that appear on paper confirmations, there would be certain defaults that the firm would apply based on factors such as type of underlying and region.

While automating based on these rules, there should also be an option to create exceptions to handle bespoke agreements with specific counterparties.

Artificial intelligence (AI) and machine learning are useful especially when processing incoming confirmations, i.e., confirmations are either drafted or marked-up by the counterparty.

For example, natural language processing (NLP) can extract key terms from incoming confirmations and convert them into structured data formats that can be compared with the actual trade booking data. This will help reduce any gaps between booking and documentation.

Firms are improving straight-through processing (STP) by transforming from a fully manual process for outgoing confirmations to an automated state such that a document gets auto-generated using trade data and customised templates.

For their transformation journey, firms can take the following five steps:

Trade volume analysis

The most logical first step is to perform a historical trade volume analysis and identify the most traded products that continue to be handled manually. This helps ensure that the focus is on areas where maximum benefit can be realised.

For instance, autocallables are one of the most traded exotic products. They have multiple variations that can be identified based on the booking methodology used.

In our experience, implementation of standardised confirmation templates for autocallables has provided breakthrough results. The templates are configured to handle different variations (e.g., single underlying / basket, with / without knock-in, cash vs physical settlement). They automatically generate a long-form confirmation (or a transaction supplement when an MCA has been signed) when a new trade is booked.

Automation roadmap

The next step is agreeing on an automation roadmap. The products are ranked based on the agreed prioritisation. Dates are agreed upon for product-level deep-dives, gap analysis, development, testing, and implementation.

Gap analysis

The front-to-back technology and operations teams work closely to standardise and align the FpML feeds required to generate confirmations. All the relevant economic fields (e.g., trade parameters, valuation/payment schedules) are sourced from the risk management system.

Coding and testing

These details are used to build logic to represent the correct payoff wordings on the document. Counterparty information and underlying names are derived from respective sources or a centralised golden source repository using application programming interfaces (APIs).

Non-economic, legal provisions are then templatised based on rules advised by the regional legal teams.

Given that these trades are highly customisable, there are checks and controls in place to ensure that rare/uncommon bookings are identified and notified to the relevant teams. The confirmations get routed to a manual drafting queue in such instances, so that they can be verified and handled as required.

Sign-off and operational support

Post-development, these templates are put through a comprehensive user acceptance phase where all stakeholders can validate the confirmations generated via the templates.

Once sign-off is received from the stakeholders, the templates are pushed to production and start generating confirmations for new trades as they enter the workflow.

These auto-generated outputs are monitored in parallel by the operations support team for any corrections that may be required.

Conclusion

Automation of ISDA confirmations for exotic derivatives, though challenging, is achievable.

As financial institutions invest in advanced technologies and collaborate on industry standards, the gap between the automation levels of vanilla and exotic derivatives is narrowing.

Use of AI and advanced data analytics will enable more-efficient, transparent, and reliable confirmation processes to enhance operational efficiency and tackle the complexities of exotic derivatives.

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