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# Automating and Enhancing the CLM and KYC Journey in the Digital Age

Driving customer-centricity, reducing risk, cutting costs



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Chartis Research is the leading provider of research and analysis on the global market for risk technology. It is part of Infopro Digital, which owns market-leading brands such as Risk and Waters Technology. Chartis's goal is to support enterprises as they drive business performance through improved risk management, corporate governance and compliance and to help clients make informed technology and business decisions by providing in-depth analysis and actionable advice on virtually all aspects of risk technology. Areas of expertise include:

- Credit risk
- Operational risk and governance, risk and compliance (GRC)
- Market risk
- Asset and liability management (ALM) and liquidity risk
- Energy and commodity trading risk
- Financial crime including trader surveillance, anti-fraud and anti-money laundering
- Cyber risk management
- Insurance risk
- Regulatory requirements including Basel 2 and 3, Dodd-Frank, MiFID II and Solvency II

Chartis is solely focused on risk and compliance technology, which gives it a significant advantage over generic market analysts.

The firm has brought together a leading team of analysts and advisors from the risk management and financial services industries. This team has hands-on experience of implementing and developing risk management systems and programs for Fortune 500 companies and leading consulting houses.

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Named a category leader in CLM and KYC applications by leading risk technology research and analysis firm Chartis, Pega provides out-of-the-box functionality for onboarding and KYC. Its cross line-of-business and globally scalable CLM and KYC applications also feature digital process automation, rules, process, case management, AI, and robotics. Pega's team has deployed onboarding and KYC solutions at more than 45 global financial institutions.

For more information please visit [www.pegaonboarding.com](http://www.pegaonboarding.com).

### About the contributor



Thom Hook is responsible for providing regulatory subject matter expertise in Pega's Risk, Compliance, and Onboarding practice. Thom supports Pega's Client Lifecycle Management and Know Your Customer applications as well as the development of financial crime case management solutions. Based in Massachusetts, he has spent 8+ years working in the financial services sector as a prosecutor, consultant, internal auditor and compliance professional, specializing in Anti-Money Laundering (AML) and Sanctions regulations.

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# 1. Automating for success: KYC and CLM

## Introduction

In the rush to fulfil their Know Your Customer (KYC) and Client Lifecycle management (CLM) obligations<sup>1</sup>, many Financial Institutions (FIs) have established large compliance departments. Often unwieldy and inefficient, these can comprise thousands of full-time employees (FTEs) engaged in repetitive customer due-diligence and onboarding tasks. Faced with continued pressure on their margins, however, and more demands to comply with regulation, FIs are now looking to eradicate some of the meaningless 'busywork' involved across the customer lifecycle, to save costs and to reallocate employees to more complex, investigative tasks. Banks also need to eliminate silos, both internally and to improve their clients' experience.

One key tool in achieving these goals is *automation*, enabling FIs to assist or even replace FTEs with relatively low-cost technology. Increasingly, FIs are also looking to enhance the effectiveness of their KYC and CLM processes with specific functionality – notably robotics, integrated solutions and Artificial Intelligence (AI) – to combine precise, configurable case management, processes and rules with the adaptability and flexibility these capabilities offer. FIs also need to be able to scale automation across lines of business, geographies, KYC rules, products and channels.

But automation does not work for every process in an FI. Before institutions can determine where to deploy it most effectively, they must assess which aspects of a particular process are best suited to it. KYC and CLM processes, and their components, are particularly well-suited to the techniques automation offers<sup>2</sup>.

In this report we:

- Examine these processes.
- Consider why automation is a useful tool for them.
- Suggest how FIs can develop a strong automated KYC process, while driving front- to back-office onboarding, transparency and competitive differentiation.

## Why KYC and CLM?

### Unpacking the KYC/CLM value chain

In a typical FI – a bank, say – the 'lifecycle' of a customer has three main areas of activity:

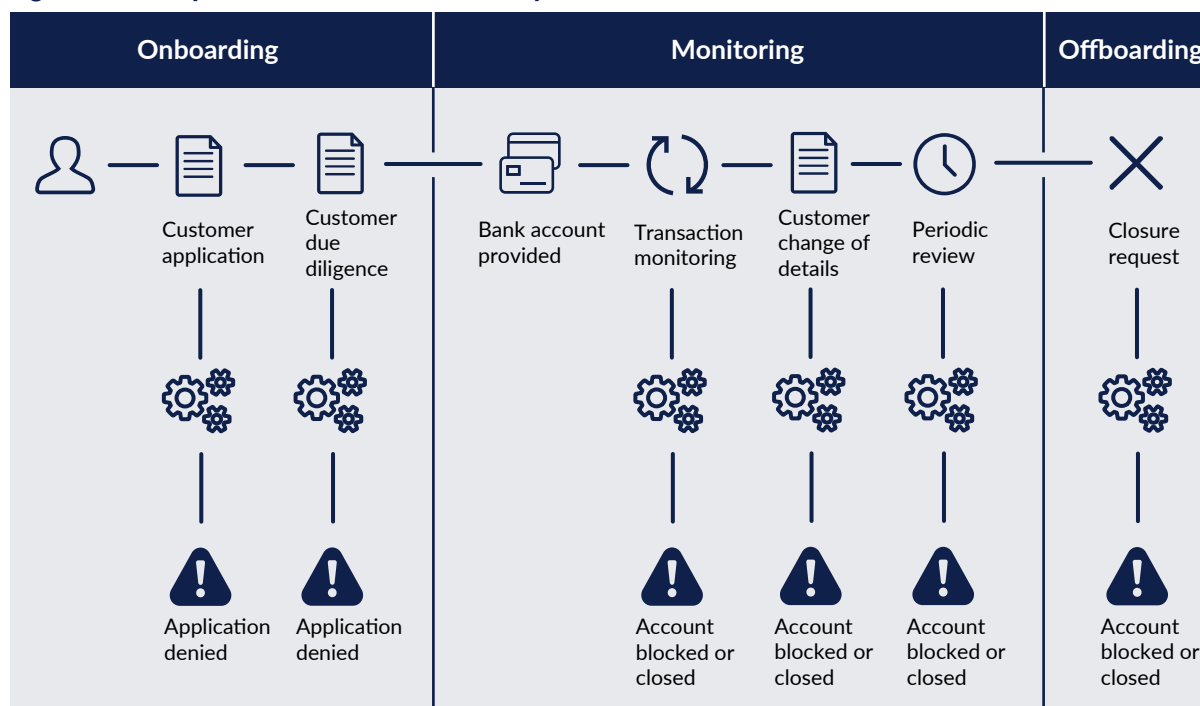
- **Onboarding.** Signing customers up to the FI's accounts and services.
- **Monitoring.** Keeping track of customers' day-to-day transactions, requests, loans and so on.
- **Offboarding.** Allowing customers to sever their connection with the FI – if they get an account elsewhere, for example.

<sup>1</sup> Such as the Foreign Account Tax Compliance Act (FATCA) in the US and the Fourth European Union Anti-Money Laundering (AML) directive.

<sup>2</sup> The customer lifecycle generally encompasses commercial and financial considerations as well as risk concerns; KYC is essentially the 'risk' component of CLM.

Each of these activities contains its own *value chain* that comprises a number of basic compliance functions FIs must perform (see Figure 1). This includes assessing customers' creditworthiness, performing due diligence (checking sanctions and political exposure or adverse media screening), and then monitoring the account for danger signs once it has been established. Once an account is closed, a number of further checks must be performed (such as ensuring that the account is fully closed, and that appropriate information is stored or deleted).

**Figure 1: KYC requirements in the customer lifecycle**



Source: Chartis Research

At each step in the chain there are risks<sup>3</sup> that must be mitigated with **controls**. For controls to operate effectively, the system must capture key **data elements**. FIs have consistently struggled to make this process more accurate, to improve the customer experience and make their own operations more efficient.

### Automating the controls

FIs can improve their efficiency by reducing the time they spend on these processes – and potentially the number of FTEs assigned to them – with **automation**. Before they can achieve the desired outcome, however, they must conduct a comprehensive *suitability analysis* to isolate those processes that are best suited to automation:

- Actions must be *consistent*, with identical steps performed *repeatedly*.
- Activity should be *template-driven* – in other words, data is entered into specific fields in particular areas in a repetitive manner.
- Activity should be *rules-based*.

<sup>3</sup> Of customers engaging in fraudulent activity, for example.

We believe automation can contribute to specific controls or data elements in different ways (see Table 1). While some processes require *significant human intervention* (the yellow areas in Table 1), some can be *somewhat automated* (the cyan areas) or *largely automated* (the green areas). Automation can be applied to each area, and human decision-making is almost always important at each point. A key factor, however, is how much *subjective human judgment* is required to finalize a given process stage. To analyze Ultimate Beneficial Ownership (UBO), for example, FIs might have to account for multiple indirect owners or looped ownership structures, particularly with non-public companies. And assigning quantitative values to a given entity ('25% ownership', for example) may require some qualitative judgment that needs to be assessed and recorded. Nevertheless, it's possible that some of these areas may become more suited to automation in future – as, say, more centralized repositories of UBO information are established.

Figure 2 shows a simplified onboarding process that illustrates how the various elements could operate in practice.

**Table 1: Automating the processes at each stage of the customer lifecycle**

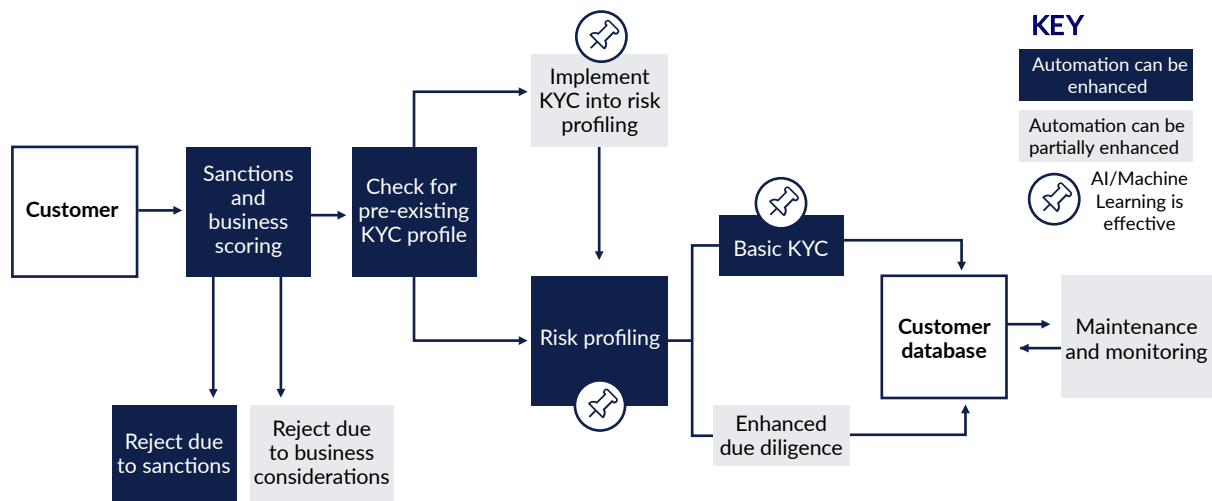
Onboarding	Monitoring	Offboarding
Identifying and verifying customers and addresses ***	Monitoring behavioral data (such as transactions and relationships with counterparties) **	Processing account closure data **
Identifying beneficial owners (i.e., those who ultimately 'own' or control a customer) *	Changing reference information (such as account numbers and sort codes) ***	Processing suspicious activity data **
Determining intention and product choice (i.e., determining which product is correct for which customer) **	Recording changes to beneficial ownership, company structures, customer information, address data, etc. **	
Checking initial verification sources (external/third-party information and watchlists) ***	Recording new customer information ***	Producing and storing documentation around processes **
Processing negative news data ***	Determining requirements for new identity and verification data ***	
KYC check **	Triggering event-based assessments **	
Fraud check **	Operating fraud and transaction-monitoring systems **	Calculating and recording credit risk exposure data ***
Credit score check **	Fraud checks *	



Onboarding		Monitoring		Offboarding	
Searching lists of prohibited customers	***	Developing and monitoring Customer Risk Assessment Model (CRAM)	**	Distributing reports to Financial Intelligence Units and Suspicious Activity Reports	***
Knowledge Base Authentication check	***	Politically Exposed Persons (PEP) and sanctions screening	***	Enacting intelligence and information-sharing protocols (i.e., updating a consortium)	***
Developing a CRAM	**	Periodic reviews based on CRAM rating	*		
PEP and sanctions screening	***				
Customer due diligence procedures (i.e., complying with specific regulations or bank policies)	***	Transaction and fraud monitoring alerts	***	Updating exit lists (i.e., lists of departed customers)	***

Key: \*: process must be largely manual; \*\*: process has some potential for automation; \*\*\*: process can be largely automated  
Source: Chartis Research

**Figure 2: Enhanced automation in the onboarding workflow**



Source: Chartis Research

## Enhancing automation: robotics, integration and AI

In Figure 2 we can also see how almost every part of this particular KYC and onboarding process has at least some capacity for automation – and how this automation can be further enhanced. Specifically, there are three possible enhancements:

- Robotics.** While the term ‘robotics’ may conjure up images of machines sitting at desks, in this context it refers to the use of software to replace humans. Typically this will involve ‘screen-scraping’, macros and recording functionality to capture and replicate repetitive work. And although robotics processes generally operate without reconfigured core software, they must be

integrated with the underlying case management and the overall application to ensure effective controls.

- **Integrations.** The ability to link software (whether third-party software or that from a neighboring solution set) is an important element in automating data. Effective Application Program Interfaces (APIs) determine how features and data are transferred from one component to another. More flexible and configurable APIs can be used to support context-aware, event-driven integration that enables FIs to apply business rules to the solutions, which are in turn 'plugged' into the CLM application. This application can then use that data 'smartly', employing AI and rules to drive outcomes from it and further automating processes.
- **Artificial intelligence (AI).** This is seen by many as a natural extension of automation: FIs can apply AI tools to change the nature of the automated process. Machine Learning (ML) techniques, for example, can be used to transform 'static' automation into 'dynamic' automation, which responds to inputs without human intervention and/or offers more appropriate outcomes, recommendations and analysis.

However, one of the risks of AI is that there are often no limits to the results it produces, or how those results are interpreted. Another core risk is that unconstrained AI can learn 'risky' behavior. By employing control and transparency and applying AI within these controls, risks can be mitigated – even for complex tasks. FIs can establish defined rules for each stage of the process, so users cannot perform actions that are not permitted. By automating and monitoring the account, FIs can address the rules-setting and boundary conditions around analytics. By standardizing these precisely defined elements within the application and case structure, FIs can ensure that AI tools function more effectively, with more comprehensible and controllable results.

The benefits of enhanced automation are clear: fully automating processes is difficult, and FIs can often glean cost savings by giving employees automated support rather than replacing them entirely. Again, a suitability analysis is important here, to determine which parts of the KYC and end-to-end CLM chain can benefit from assisted automation, and which can be fully passed over to unattended automation.

## Case study: automation in action – Artificial Intelligence in wealth management

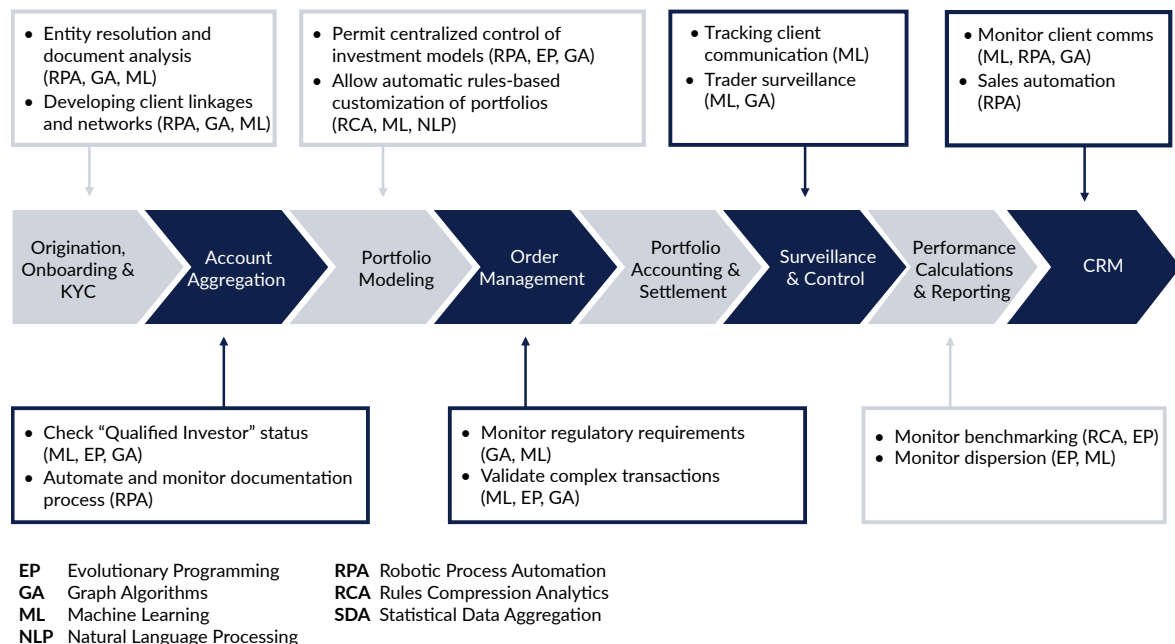
One area where automation can reap dividends is *wealth management*. Wealth management processes often rely on highly trained professionals who can only monitor a limited number of high-value accounts. An automation-enhanced KYC application can free them up to devote time to more productive and profitable tasks (such as onboarding more clients).

Figure 3 shows the onboarding and monitoring stages of a wealth management lifecycle in more detail<sup>4</sup>. Specifically, we have reviewed how AI can be applied at each step; the capabilities that can be introduced range from basic to relatively complex:

- Evolutionary programming and ML for analysis.
- Rules compression for benchmarking.
- Statistical data aggregation to deliver information to users of the system.
- Natural Language Processing, to scan documentation that would otherwise have to be manually searched and transcribed.

FIs should conduct a cost-benefit analysis at each step of the process to determine which techniques are most efficient in terms of time and cost savings.

**Figure 3: Automating wealth management onboarding**



Source: Chartis Research

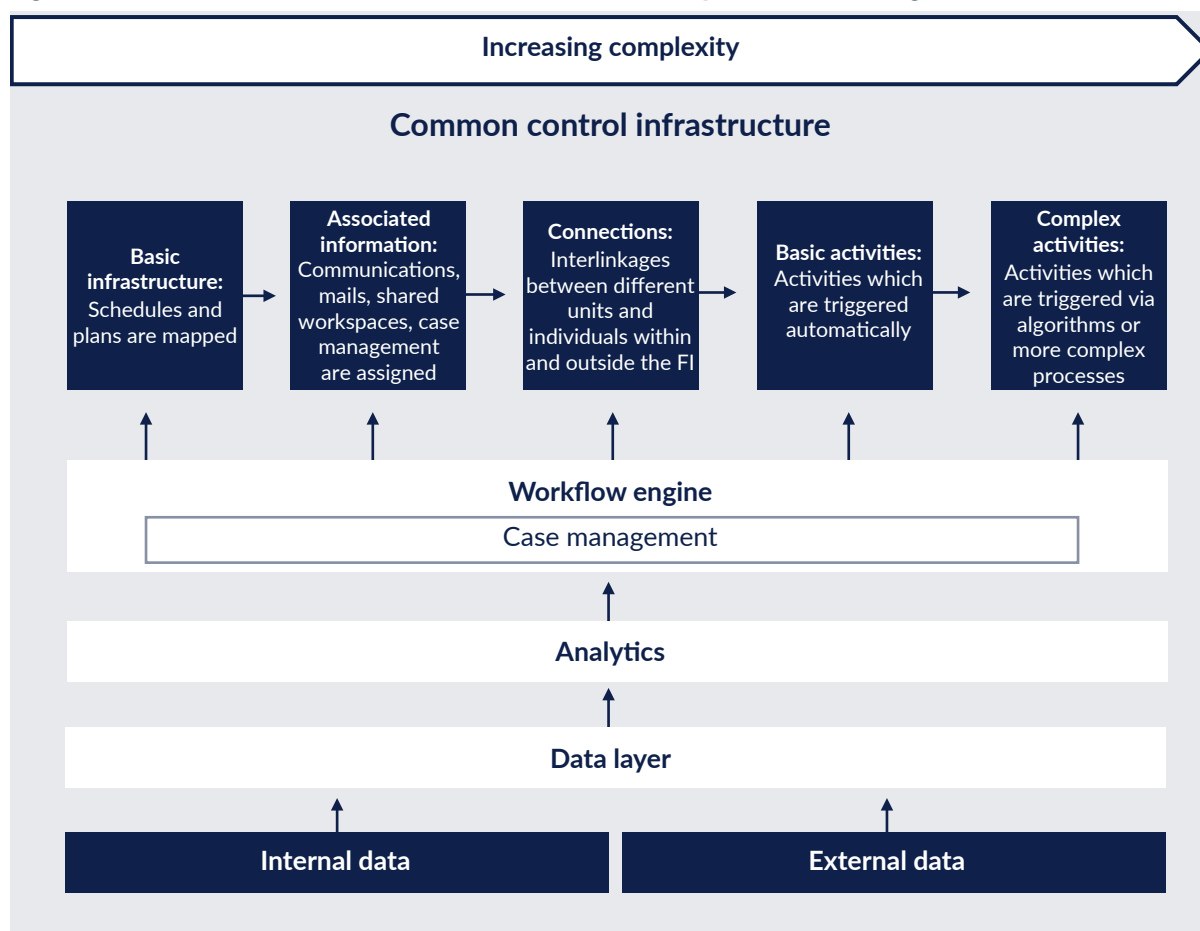
<sup>4</sup> Note that to preserve anonymity this represents a 'blended' case study, which combines insights obtained from a number of firms into an overview of the wealth management value chain.

## 2. Key steps to success

### Developing a single infrastructure for an automation workflow

Once FIs have identified the elements of their KYC and end-to-end CLM processes that are best suited to automation, they can turn their attention to implementing the right system. In most cases they can use a single infrastructure for enhanced automation. We can think of the construction of this workflow as a process that moves from establishing the basic infrastructure to layering more complex activities (such as algorithmically triggered processes) on top. In Figure 4 this progression is shown from left to right.

**Figure 4: Unified KYC/CLM architecture with automation, rules, process, case management and AI**



Source: Chartis Research

Each of these points of growing complexity is enabled by data, analytics and the digital automation engine (which governs the unified rules, process and case management infrastructure). Having a common infrastructure helps to minimize impedance and mismatches as an FI attempts to simplify its end-to-end CLM and KYC processes.

The database environment in the data layer (whether NoSQL, SQL or something else) may vary, but as long as a common data model is used FIs will find it easier to optimize the workflow. Users will also be able to compare graphs and databases more efficiently, allowing them to focus on establishing and defining business processes, schedules and events, rather than on configuring their infrastructure. This in turn will lead to more harmonized, and more efficient, activities and processes.

## Conclusion: building and using a solution

Bringing together automation, case management, AI, data and models into a common framework can be particularly challenging within larger FIs, which often have complex bureaucratic requirements and conflicting stakeholders, as well as tangled data flows, siloed infrastructure and legacy systems. Addressing these issues from within the tangle itself is a particular challenge, although it may be possible to layer scalable applications from external providers on top of existing architecture, using a 'wrap and renew' approach. A packaged solution can offer a number of technical advantages, including the ability to combine out-of-the-box functionality with integrated robotics, integration and AI capabilities.

Many firms are struggling to strike a balance between people and technology. Reducing compliance headcount can send the wrong message to senior stakeholders and regulators, but FIs are also facing increasing pressure to prove the return on investment of their systems. Increasingly, scalability and being able to do more with less are becoming prized assets. A unified KYC technology across their enterprise can drive IT simplification, faster onboarding and compliance and ultimately, competitive differentiation.

By using automation to make investigations and due diligence processes more efficient, FIs can free up staff to work on more complex issues, adding considerable value. In addition, by automating processes, FIs will also be able to address the lack of expertise within the marketplace – many are struggling to find highly trained KYC/CLM professionals who can combine technical and business knowledge. Automation means that they can place their valuable supply of experts where they are most needed. Ultimately, a unified KYC and CLM technology architecture can enable FIs to enhance the automation of tasks and processes across the organization.

### Some key considerations:

In measuring the efficacy of a CLM system, there are some important questions to ask:

- Is AI integrated into the KYC and CLM technology? How are AI and robotics controlled within the technology?
- Can the KYC technology scale across an FI, whether institutional-, wealth- or consumer-focused?
- How is the KYC technology adopting robotics?
- Is there a consistent underlying architecture?
- How agile is the KYC technology?
- How is third-party data managed through APIs? What does the AI technology do with the data?
- What is the user experience from front office through to operations and the customer?

### 3. How to use research and services from Chartis

In addition to our flagship industry reports, Chartis also offers customized information and consulting services. Our in-depth knowledge of the risk technology market and best practice allows us to provide high-quality and cost-effective advice to our clients. If you found this report informative and useful, you may be interested in the following services from Chartis.

#### For risk technology buyers

If you are purchasing risk management software, Chartis's vendor selection service is designed to help you find the most appropriate risk technology solution for your needs.

We monitor the market to identify the strengths and weaknesses of the different risk technology solutions, and track the post-sales performance of companies selling and implementing these systems. Our market intelligence includes key decision criteria such as TCO (total cost of ownership) comparisons and customer satisfaction ratings.

Our research and advisory services cover a range of risk and compliance management topics such as credit risk, market risk, operational risk, GRC, financial crime, liquidity risk, asset and liability management, collateral management, regulatory compliance, risk data aggregation, risk analytics and risk BI.

Our vendor selection services include:

- Buy vs. build decision support
- Business and functional requirements gathering
- Identification of suitable risk and compliance implementation partners
- Review of vendor proposals
- Assessment of vendor presentations and demonstrations
- Definition and execution of Proof-of-Concept (PoC) projects
- Due diligence activities.

## For risk technology vendors

### *Strategy*

Chartis can provide specific strategy advice for risk technology vendors and innovators, with a special focus on growth strategy, product direction, go-to-market plans, and more. Some of our specific offerings include:

- Market analysis, including market segmentation, market demands, buyer needs, and competitive forces
- Strategy sessions focused on aligning product and company direction based upon analyst data, research, and market intelligence
- Advice on go-to-market positioning, messaging, and lead generation
- Advice on pricing strategy, alliance strategy, and licensing/pricing models

### *Thought leadership*

Risk technology vendors can also engage Chartis to provide thought leadership on industry trends in the form of in-person speeches and webinars, as well as custom research and thought-leadership reports. Target audiences and objectives range from internal teams to customer and user conferences. Some recent examples include:

- Participation on a 'Panel of Experts' at a global user conference for a leading Global ERM (Enterprise Risk Management) software vendor
- Custom research and thought-leadership paper on Basel 3 and implications for risk technology.
- Webinar on Financial Crime Risk Management
- Internal education of sales team on key regulatory and business trends and engaging C-level decision makers

## 4. Further reading

- *RiskTech100® 2018*
- *Financial Crime Risk Management Systems: Market Update 2017*
- *Data Integrity and Control in Financial Services: Market Update 2018*
- *Spotlight: Artificial Intelligence in finance: a primer*
- *Spotlight: Quantifying cyber risk in financial institutions*

For all these reports see [www.chartis-research.com](http://www.chartis-research.com).