

CAPCO | DIGITAL

HOW TO SAVE MONEY AND REDUCE RISK IN CLIENT OFFBOARDING



OVERVIEW

Capco has used data science and its financial services expertise to reduce the regulatory and resourcing risk during the offboarding process

The financial services industry has witnessed considerable hype around data science and machine learning in recent years. However, a quick Google search will confirm that there are very few concrete examples of it being put in practice in large institutions and delivering tangible results.

Here at Capco, we strongly believe that data science can add significant value in financial services across multiple functions with high returns on investment. This latest series 'Applied Data Science in Financial Services' aims to highlight the common yet painful problems which

Capco has solved using advanced analytics techniques.

Our third article focuses on an important but perhaps under-appreciated operational problem: client offboarding. Although it might sound straightforward, it can often be incredibly complex - open trading positions need to be closed and several highly manual processes need to be performed in specific orders. Banks often struggle to allocate scarce resources effectively to deal with this process and to meet their regulatory deadlines. The result? Increased risk and money wasted on expensive external resources.

Here's the story of how we helped a large bank overcome just this problem.

THE PROBLEM

All financial institutions focus on their onboarding process. A lot of work goes into making the process as slick and timely as possible (first impressions matter!) while satisfying all the regulatory requirements. With clients becoming used to quicker processing times due to technological improvements and increasingly stringent Know Your Client (KYC) and anti-money laundering (AML) requirements, this is certainly no easy task.

In comparison, the problem of offboarding clients has less focus but it is still a big issue. So why would a bank want to offboard clients and lose out on potential revenue? There are a number of different possible reasons, including:

- 1. Change of strategy** – Relevant clients will need to be offboarded if a bank decides to discontinue certain products, cease to provide certain services or even close entire departments.
- 2. Cost** – Maintaining a client on the books isn't cost free. Depending on the type of client, fixed costs such as regular

KYC checks and constant AML monitoring can be significant. If the client costs more to service than the revenue they generate, then they act as a drag on group profitability. Also, let's not forget Pareto's Principle – **often 80 percent of the revenue is generated by 20 percent of the clients**. So offboarding unprofitable clients will enable a greater focus on the most important accounts.

- 3. Regulatory demand** – Regulations often require financial institutions to offboard clients, through reasons ranging from client failure to pass AML and/or terrorist funding (TF) checks, to the requirement to maintain proper data quality on internal systems.
- 4. Client wants to leave** – self-explanatory!
- 5. Client is too risky** – If a client is at risk of engaging in activity considered to have too high a risk, reputational or financial, the bank might decide it is better to take the hit to revenue and offboard the client (often called 'managed exit').

For example, a change in credit risk may result in the bank ceasing to engage with a client.

Why is it important to do this process well, you might ask, if the clients are leaving in any case? Well, it very much depends on the reason a client is being offboarded. If clients are being offboarded due to regulatory demand, an inefficient process could land you in hot water with regulator. If the client is too

risky or too expensive to maintain, you could be exposing yourself to unnecessary risk or cost. And all this ignores the potential reputational damage of a poor customer experience.

For these reasons, having an efficient offboarding process is vital for the smooth running of any bank. Offboarding a client might sound simple but can in reality be a complex process involving several stages.

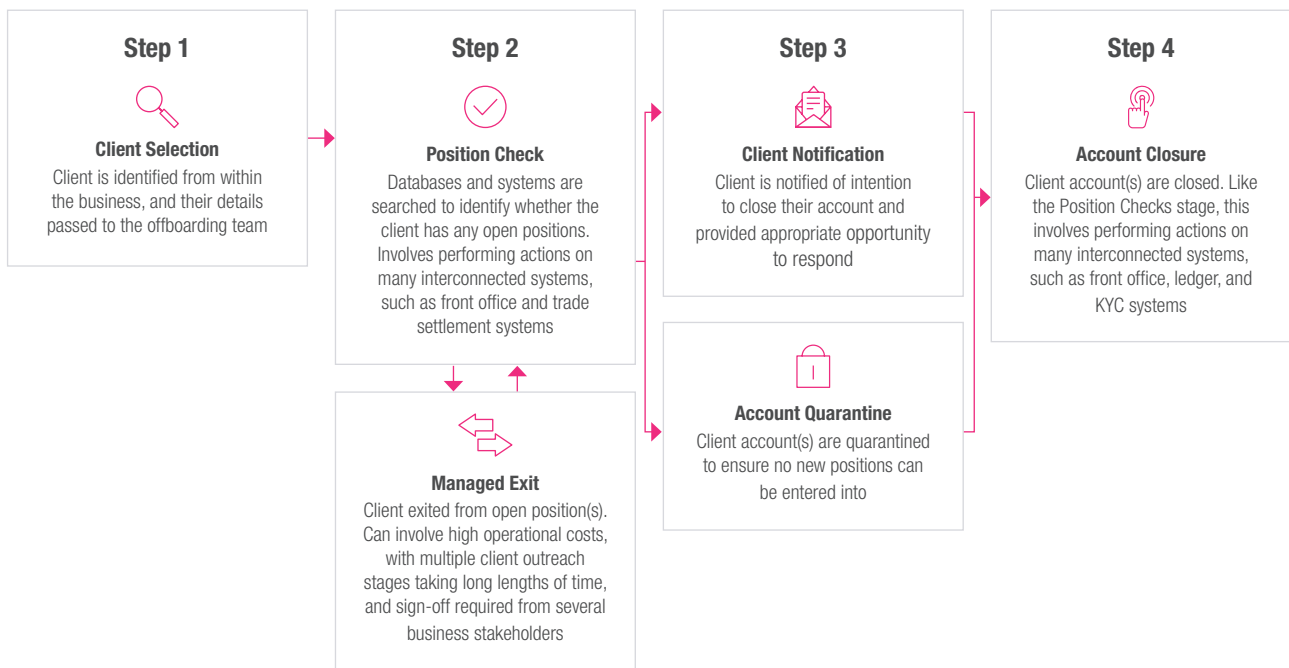


Figure 1: an overview of a typical offboarding process

Banks often risk underestimating the time required by assuming a fixed closure time per account and using the benchmark of a few accounts to estimate the average of the time spent across all clients.

The above may seem simple for a client with a few accounts but imagine a large corporate client with a dozen accounts, dealing in multiple complex and sometimes long-term products from different areas of the bank - all these various dependencies and subtasks can make estimating the time taken to offboard these clients fiendishly difficult. So, when a deadline, regulatory or internal, is set for offboarding a set of clients, it can often be difficult to know the risk of this deadline being missed.

All these challenges frequently result in a mad rush to hit the deadline as it looms ever closer, at the expense of temporary

staff needing to be hired and existing staff working evenings and weekends. A missed regulatory deadline can result in fines and potentially reputational damage as the client still appears on the bank's books but hasn't been remediated yet as per the demand.

Clearly this isn't ideal. What if there was a way to reduce these risks by:

1. accurately calculating the time required and
2. pinpointing the most effective ways to improve the whole process?

Read on to find out more.

CASE STUDY: PREDICTING CLIENT OFFBOARDING TIME TO USE RESOURCES EFFICIENTLY AND REDUCE RISK AT A TIER 1 GLOBAL BANK

Capco was engaged by a tier 1 global bank who sought to improve their client offboarding process. As a result of changing business requirements and strategy, the client had high volumes of clients that needed offboarding. These problems were compounded by limited data on offboarding complexity for each account, limited data on historic offboarding completion times and the additional challenge of strict regulatory time constraints.

Steps had already been taken to accelerate specific high-volume processes, such as using automation technologies like robotic process automation (RPA), but an understanding of how these improvements affected the overall end-to-end offboarding time was lacking. Specifically, the bank was unable to accurately estimate the proportion of clients that required a (much lengthier) managed exit. As a result, the bank was flying blind as to the likelihood of it meeting the regulatory deadlines in time.

The team followed a three-step iterative approach to build a model to predict the proportion of managed exits and therefore estimate the likely time taken to offboard a client population. This model allowed the bank to calculate the optimal sequence

of tasks to minimize the offboarding time, as well as identifying the highest impact areas for automation.

Step 1: Business understanding

The team began to build a well-rounded understanding of the bank's current offboarding process. This included knowledge of which systems were used and when, the rationale behind the current approach, the available data sources and which processes were the most time-consuming.

In particular, the team conducted several interviews with subject matter experts (SMEs) to understand the most important factors that affected offboarding time (especially managed exit time) and the necessary constraints, regulatory or otherwise, that needed to be factored into the design of the solution. Lastly, the team got to grips with the assumptions and methodology behind the bank's current process for estimating offboarding and managed exit time.

This knowledge enabled the team to form an initial view of how data science techniques could be used to improve the whole process.



Figure 2: An overview of the process for predicting offboarding time

Step 2: Exploration of data sources & breaking the data siloes

Next, the team performed a deep dive into the relevant data sources.

Capco typically works with data of different sizes and stored using different technologies, either on premise or on the cloud. Capco's data scientists can analyse data in CSVs or SQL databases but are also adept at using 'big data' technologies such as Hive, Pig and Spark.

In this particular case, data on previous offboarding times, key client information, details of client accounts and data on process methods (manual, RPA or other) was pulled from various key systems and systematically explored for insights. The datasets were then joined together to create a single enriched dataset, stored in a centralized location, which enabled a thorough investigation to realise patterns and interrelations within the data.

The team then proceeded to interrogate the data and ask key questions of it, such as:

- How did the offboarding time vary across different divisions of the bank?
- What proportion of particular processes were done manually, rather than using automation technologies such as RPA?

- How did the complexity of the account affect the client's offboarding time?
- How did the time taken to process a managed exit change with different products?
- Are there any processes that could be performed concurrently but are currently carried out sequentially?

This step in itself was valuable, as the team could now provide data-driven insights to the client on the biggest issues in the offboarding / managed exit processes and therefore identify key areas that required attention going forward.

Step 3. Calculating the offboarding time required

Now, as discussed, a significant part of the offboarding time can be taken up in the managed exit process i.e., unwinding open trading positions. Therefore, to accurately estimate the offboarding time, the team first needed to build an initial model to predict which clients required a managed exit.

Using the single enriched dataset from the previous step, the team utilized data on the number of accounts the client had, the account complexities, the business units in question and more to build the prediction model. An ensemble model was used and was designed to ensure that the model result was easily understandable and performed similarly well across all business

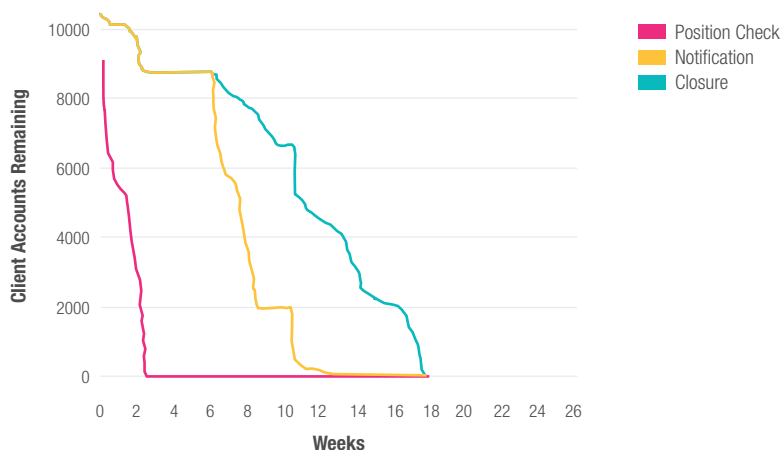


Figure 2: The estimated time taken to complete different stages of the offboarding process for a synthetic client population

units. The model was able to generalize well to unseen data and had an accuracy in excess of 90 percent.

The team then combined the results of the managed exit model with the enriched dataset from Step 2 to conduct a 'burn-down simulation', i.e., how long it would take to offboard a certain population of clients using the existing processes. The graph below is a representation of the estimated time required to clear different stages:

This simulation was constructed from a combination of various input parameters (such that an average employee works 40 hours per week), data on the number of staff members in different teams and an understanding of which processes used RPA vs processes which needed to be done manually.

This simulation provided a far more accurate estimation of the total time it was likely to take a population of clients to be offboarded. The immediate effect of this was threefold:

- **Reduction of cost & fines** – the bank was able to better manage their workforce, adding more resources to key bottlenecks in the process and mitigating the need to hire temporary staff to hit pressing deadlines
- **Reduction of regulatory risk** – the bank was able to be more proactive when engaging with the regulator as to what was realistic in certain timeframes
- **Identification of efficiencies** – the bank was more easily able to see the processing times by client type, portfolio and regional teams; this enabled them to identify opportunities which would give them the most ROI through automation.

IMPACT & CLIENT REACTIONS TO THE BESPOKE OFFBOARDING MODEL

Whilst this more accurate time estimation had immediate business benefits, the model was also able to be leveraged for much greater longer-term impact. For the simulation model not only estimated the offboarding time for the existing process, but also provided a view as to what extent the process itself could be improved in the future. Improvements considered included the impact of automating manual sub-tasks and re-distributing and re-prioritizing workloads. Below are three scenarios from the simulation model which show the potential time saving for an optimal process:

Being able to quantify the potential time saving between the current state and the optimal state (just shy of 30 percent reduction!) had many benefits. Firstly, the bank was able to

prioritize the best way to invest in automation, initially selecting the processes that would save the most time. Secondly, the bank was able to calculate the potential return on investment of improving different processes and come to a considered judgement on whether to proceed.

The client was delighted with the project outcome, noting the benefits of a clear visual representation of predicted offboarding rates, allowing direct pinpointing of process bottlenecks. The client also found high value in the ability to model new scenarios in order to identify optimal states. The tool has been used as a foundation for quantifying the benefits in a number of key strategy and change activities within the bank to date.

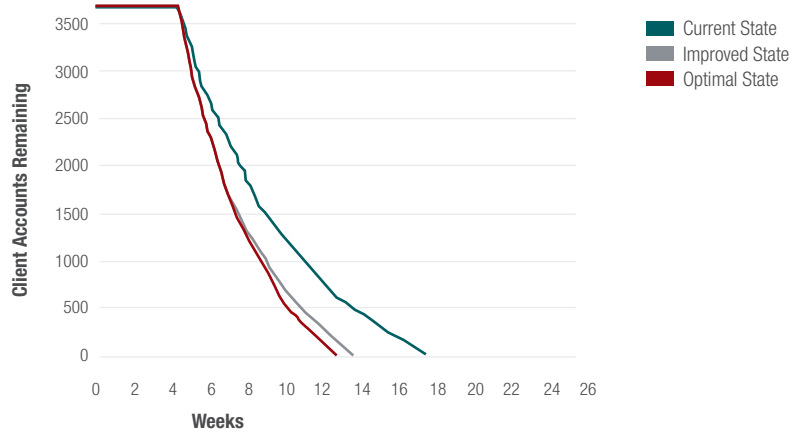


Figure 3: A burn-down chart showing the estimated total offboarding time for different scenarios

CONCLUSION

While this might seem like an intimidating process, it is often not an option to continue with the status quo. Just throwing more resources at the problem is not an effective solution, as years of experience has shown.

Making the best use of your available resources is at the heart of reducing the risk in the offboarding process. Our approach allows organisations to be:

- More proactive at dealing with regulators, giving the regulator confidence that they can hit deadlines
- Better at planning resource capacity, saving hundreds of thousands, if not millions, on overall resourcing cost.

Intrigued by our solution? Get in touch with our Data Science & Machine Learning capability lead, Riddhi Sen, on riddhi.sen@capco.com or our R&D Lead, Jibrán Ahmed on jibrán.ahmed@capco.com.

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ABOUT CAPCO

Capco is a global technology and management consultancy dedicated to the financial services industry. Our professionals combine innovative thinking with unrivalled industry knowledge to offer our clients consulting expertise, complex technology and package integration, transformation delivery, and managed services, to move their organizations forward.

Through our collaborative and efficient approach, we help our clients successfully innovate, increase revenue, manage risk and regulatory change, reduce costs, and enhance controls. We specialize primarily in banking, capital markets, wealth and asset management and insurance. We also have an energy consulting practice in the US. We serve our clients from offices in leading financial centers across the Americas, Europe, and Asia Pacific.

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