Process Mining for Alternative Investment Operational Bottlenecks

1. Introduction

(Go Digital To Crush Alternative Investment Bottlenecks - Study) *Manual document workflows (e.g. reports and notices) are common in alternative investments, but they can be time-consuming and error-prone without efficient processes.* Alternative investment operations – such as those in private equity, real estate, or hedge funds – involve complex transactions and significant documentation. Unlike public markets with standardized trades, alternative investments often require **trade settlements and document workflows** that are handled through manual processes like emails, spreadsheets, and PDFs. This manual handling can introduce delays and inefficiencies. In fact, over half of advisors in a survey spent **10+ hours per week processing investment documents**, leading to client reporting headaches as high-net-worth investors pile into private markets (Go Digital To Crush Alternative Investment Bottlenecks - Study) (Go Digital To Crush Alternative Investment Bottlenecks - Study). These delays in providing information are problematic when investors demand timely updates on capital calls, fund performance, and settlements.

Efficient **trade settlement** and **document workflows** are therefore critical in alternative investments. Timely settlement of trades (e.g. funding a private equity deal or processing a capital call) ensures that investment opportunities are not missed and that investor confidence remains high. Likewise, smooth handling of documents – such as capital call notices, subscription agreements, and distribution letters – improves accuracy and client satisfaction. If these processes are slow or error-prone, they can erode investor trust and create operational bottlenecks that consume valuable team capacity. As the industry grows (private market assets have exploded 30-fold since 2000 (Go Digital To Crush Alternative Investment Bottlenecks - Study)), firms recognize the need to streamline operations. However, traditional methods of mapping and improving processes (like workshops or manual audits) often fall short in pinpointing where delays and errors occur in day-to-day workflows.

Process mining has emerged as a powerful solution to this challenge. Process mining is a data-driven technique designed to *"discover, monitor and improve real processes … by extracting readily available knowledge from event logs of information systems"* (Digital Transformation through Robotic Process Automation RPA and Process Mining). In other words, it uses the digital footprints left in IT systems (timestamps, user actions, transaction records) to automatically **reconstruct how processes actually flow in practice**, as opposed to how they are *supposed* to flow on paper. Think of it as an "MRI for business processes" that provides an objective, end-to-end view of process execution (What is Process Mining? | Celonis). By applying process mining, organizations can visualize the exact paths a process takes, identify

where bottlenecks or deviations occur, and measure performance (such as cycle times and wait times between steps). This visibility is especially valuable in alternative investments where processes often span multiple teams and systems. With insights from process mining, firms can target the root causes of inefficiency and address them – for example, by clarifying responsibilities or introducing automation. In this report, we explore how CoreCentrica, an alternative investment firm, applied process mining to **trade settlement and document workflows** to eliminate operational bottlenecks. We focus specifically on the capital call process as a case study, highlighting how process mining analysis, combined with workflow redesign and robotic process automation (RPA), reduced processing time and improved investor satisfaction.

2. Problem Statement

At CoreCentrica, the **capital call process** – the workflow of requesting and receiving investor funds for a new investment – was plagued by inefficiencies and unclear handoffs. This process involves multiple teams: Investor Relations drafts the capital call notice, Finance reviews the figures, Legal signs off on compliance, and Operations sends out the notices and monitors incoming funds. In theory, these steps should flow smoothly. In practice, **responsibilities were ambiguous and sequential steps were not well-coordinated**, leading to frequent delays. For example, after Investor Relations prepared a notice, it often sat in an inbox waiting for Finance approval without a clear alert or ownership, sometimes for a full day or more. Similarly, once notices went out to investors, tracking the incoming wires was manual and siloed – Operations might not promptly inform Finance that funds arrived, etc. These **unclear handoffs between teams** created gaps where no one was explicitly accountable for the next action, causing the process to stall. As one industry consultant notes, *"from redundant approval steps to unclear handoffs between teams, these bottlenecks can derail even the best strategy"*, and mapping out workflows is essential to fix them (Closing the Gap Between Strategy and Execution: Sales Operations Consulting 101 | Starleaf Blog). In CoreCentrica's case, the lack of a well-defined baton-pass between departments meant some tasks fell through the cracks or were done redundantly.

The **impact on efficiency was significant**. On average, processing a capital call – from notice preparation to all investors funding their commitments – was taking **around 5 business days**. This lengthy cycle time was problematic for two reasons. First, it **strained internal capacity**: with multiple calls in progress, team members were constantly following up via email or phone to see if others had completed their part. Second, it **affected investor experience**: investors noticed the administrative lag. In some instances, investors received capital call notices later than expected or had to wait for confirmations of their payment, undermining their confidence in the firm's operations. Manual, scattered communication contributed to these delays – a common issue in private market operations. As an automation provider observed, *"scattered communications or manual inefficiencies […] slow down workflows and cause administrative burdens"* (Capital Call & Distribution Notices | Private Equity). This was evident at CoreCentrica: the process relied on email threads and spreadsheet trackers that were not integrated, making it hard to get a real-time view of status.

Another challenge was **process transparency**. Management lacked clear visibility into where each capital call stood and who was responsible at any given moment. If a delay occurred, it was often discovered late, only when someone escalated a missing step. This reactive firefighting was symptomatic of the broader process design issues. **Trade settlement** for alternative assets can be complex, often involving non-standard steps and multiple approvals, which increases the chance of miscommunication. In CoreCentrica's capital call scenario, the complexity translated into inefficiency: each team did their part in isolation, and there was no single source of truth for the process flow. As a result, **investor satisfaction was dipping** – internal surveys showed investors were less satisfied with the timeliness and clarity of communications around capital calls.

In summary, the **problem** centered on an outdated, siloed workflow for capital calls with unclear team handoffs. This led to a slow ~5-day processing time and frustrated both employees and investors. CoreCentrica needed to identify exactly where these bottlenecks and miscommunications were occurring and how to eliminate them. The firm's leadership recognized that simply adding more staff or meetings would not solve the root cause. Instead, they decided to leverage **process mining** to objectively diagnose the process, and then use those insights to re-engineer the workflow and introduce automation for the repetitive parts. The goal was to create a streamlined process with clear ownership of each step, thus cutting down cycle time and improving the service quality delivered to investors.

3. Methodology

To tackle the identified challenges, CoreCentrica adopted a structured methodology combining **data-driven analysis** with **process redesign and automation**. The approach consisted of several key phases:

- **Data Collection & Event Log Creation:** The first step was gathering detailed data on the capital call process from all relevant systems. Using SQL queries, the team extracted timestamps and log data for each activity in the workflow. For example, when a capital call notice was drafted, approved, sent to investors, acknowledged, and funds received – each of these events was logged in different systems (document management, email server, accounting system). We consolidated these logs into a **central event log** with case IDs (each capital call as a "case"), activity names, timestamps, and responsible team. This event log became the foundation for process mining. Ensuring data quality was critical; we had to clean and merge data from multiple sources and fill any gaps. (This aligns with known best practices, as poor data quality can render process mining results misleading (5 reasons process mining projects fail and how to overcome them | ProcessMaker).)

- **Process Mining & Visualization:** Next, we imported the event log into a **process mining tool** – in our case, Celonis Execution Management System (EMS), which is a leading process mining platform. (As an alternative, we also experimented with Power BI's process visualization capabilities through a custom plugin.) Celonis automatically

mapped out the actual process flows, creating a visual **process model** of how capital calls were being handled in reality. This process graph revealed all the different paths a capital call could take (including rework loops or out-of-sequence steps). We configured the tool to highlight key performance metrics: the average time between each step, the frequency of each variant (path), and any deviations from the standard process. The result was a **fact-based "digital twin" of the capital call process**. With so many fragmented systems and teams involved, this automated mapping gave us a complete, end-to-end view that a manual analysis might miss. As Celonis experts note, even very complex processes spanning front and back office can be continuously mapped and objectively visualized with process mining (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis) (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis). We could literally see where handoffs were breaking down – for instance, a diagram showed a long idle gap between "Notice Prepared" and "Notice Approved," confirming the approval bottleneck.

- **Bottleneck Identification & Root Cause Analysis:** Through the process mining dashboards, we zoomed in on the **bottlenecks**. One major bottleneck was the Finance approval step – the average waiting time here was over 30 hours, and it occurred in 80% of cases, indicating a systemic issue. Another was in the investor response phase: some investors would respond quickly, others late, and our process for tracking these was inconsistent. We conducted interviews and workshops with each team to understand *why* these delays were happening (e.g. Finance team did not have a clear SLA or notification for approvals, and Operations was manually sending reminders to investors). By correlating the data insights with employee feedback, we pinpointed root causes like **lack of notifications, redundant data entry**, and unclear ownership. Notably, process mining's automated bottleneck analysis helped focus our attention – the tool can **pinpoint bottlenecks by analyzing event log timestamps (5 reasons process mining projects fail and how to overcome them | ProcessMaker)**, saving us from guesswork. We also used **conformance checking** in Celonis to see how often the process deviated from the ideal sequence (for example, cases where Legal review happened after notices were sent – rare but illuminating mistakes).

- **Workflow Redesign:** Armed with these insights, we redesigned the capital call workflow for clarity and efficiency. We created a new **process model** that defined each step, the responsible owner, and the expected timeline. Key changes included introducing a clear trigger for Finance approval (an automatic alert as soon as Investor Relations finishes drafting the notice), and parallelizing certain tasks where possible (for example, Legal could review in parallel to Finance, rather than strictly after). We applied a RACI (Responsible, Accountable, Consulted, Informed) matrix to ensure every task had a designated owner – eliminating the previous ambiguity (How to Identify & Fix Bottlenecks in Your Business Processes). Essentially, the workflow was restructured to remove unnecessary waiting and to ensure smooth handoffs. We also decided to incorporate **automation (RPA)** into the new design for the most labor-intensive parts of the process

– specifically, investor communications and tracking.

- **Automation with RPA (UiPath):** Once the improved process flow was defined, we identified steps suitable for **Robotic Process Automation**. UiPath was chosen as the RPA platform to implement bots for routine tasks. One automation was for generating and distributing capital call notices to investors: previously, an analyst would manually populate each investor's details into a template and send emails. We built a UiPath bot to take the finalized capital call data (amounts, due date, investor list) and automatically *generate personalized emails with attached PDF notices* for each investor. The bot then sent these emails via Outlook and logged the outgoing communications. Another automation handled **investor response tracking**: the bot monitored the incoming confirmation emails or payment receipts in a designated inbox and updated a tracker system with who had paid. This drastically reduced the manual effort of checking bank statements and updating spreadsheets. We also used UiPath to send reminder emails to any investors who had not funded by a certain date, a task that was previously easy to overlook. By automating these repetitive communication tasks, we freed up the operations team's time and ensured consistency. (This is in line with industry experience – RPA excels at handling repetitive, rule-based tasks with speed and accuracy (How to Identify & Fix Bottlenecks in Your Business Processes) (How to Identify & Fix Bottlenecks in Your Business Processes).)

- **Integration of Process Mining Insights into Daily Operations:** The final part of our methodology was to **integrate the monitoring and continuous improvement** into CoreCentrica's daily ops. We didn't treat process mining as a one-off project; instead, we set up a **dashboard (in Celonis and in Power BI)** that continuously refreshes with new data from each capital call. This dashboard is now used in daily stand-up meetings to track live process health – for example, if a capital call is approaching 2 days without completion, it's flagged so the team can intervene. We also implemented Celonis **Action Flow** alerts: if any capital call approval is pending more than 8 hours, the system automatically sends a reminder to the responsible manager (essentially an automated nudge derived from process mining insights). In this way, the analytical insights have been operationalized. The process mining tool serves not just for analysis but for **ongoing monitoring and decision support**, helping the team maintain the improved performance. Furthermore, the combination of process mining and RPA established a feedback loop: the process data highlights new improvement opportunities, and automation can be adjusted or expanded accordingly. (This approach reflects the general principle that process mining and RPA together yield optimal results – process mining identifies optimization opportunities and RPA executes them (5 reasons process mining projects fail and how to overcome them | ProcessMaker) (5 reasons process mining projects fail and how to overcome them | ProcessMaker).)

By following this methodology – **data collection, process mining analysis, workflow redesign, and RPA implementation** – CoreCentrica created a solid foundation for improving

the capital call process. The next section details how we carried out these steps in practice and the specific implementation journey, before discussing the outcomes achieved.

4. Implementation

Analysis and Discovery: We began implementation with a deep dive into the process mining analysis findings. Using Celonis EMS, we had uncovered that the average end-to-end time for capital calls was 5 days, with the longest delays occurring in two areas: (1) the Finance approval stage, and (2) the period between sending notices and receiving all investor funds. To make this concrete, we looked at a recent quarter's worth of capital calls (about 30 instances) and found, for example, that Finance approval took 32 hours on average, and in 6 cases it exceeded 48 hours. We shared these data points with the Finance team, who were initially surprised by the magnitude of the delay (since each individual instance didn't feel that long to them). This illustrates how process mining provided *objective evidence* of bottlenecks, sparking urgency for change. We also identified a variant of the process where Legal review was happening after notice distribution in 10% of cases – clearly a compliance risk. That insight allowed us to address a process deviation that might have gone unnoticed.

Workflow Redesign in Practice: With consensus on the pain points, we redesigned the process. We crafted a **new SOP (Standard Operating Procedure)** document mapping out each step in order, and used a swimlane diagram to delineate team responsibilities. Key improvements included:

- The **Finance approval step was given a strict SLA** of same-day turnaround. To support this, we set up an automated email trigger: as soon as Investor Relations marks a notice "Ready for Review" in the system, an email (and Teams message) alerts the Finance approver. Previously, approvers might not realize a document was awaiting their review for hours; now they had immediate notification. We also designated a backup approver if the primary is unavailable, to avoid single-thread delays.
- We introduced a **checklist and handoff protocol** between Operations and Finance for tracking investor payments. Operations now updates a centralized tracker (accessible by Finance) whenever a wire is received. This replaced the old method of Operations emailing Finance sporadically about received funds. Now Finance can check the tracker anytime to see funding status, eliminating uncertainty.
- We clarified sequencing so that **Legal review happens concurrently** with Finance, rather than sequentially. Both teams receive the notice at the same time. The process is built such that final notices are not sent to investors until both Finance and Legal have signed off, but doing these in parallel shaved roughly a day off the timeline.
- Importantly, we decided that any **non-standard scenarios** (e.g., an investor requests an extension on the payment) should be immediately logged and communicated to all teams via the tracker, to keep everyone informed and allow proper follow-up. This was to prevent situations where one team held up the process due to an issue that others weren't aware of.

We tested the redesigned workflow on a small scale with one fund's capital call. This pilot run allowed us to iron out minor kinks (for example, the automated notification email initially lacked a direct link to the document, which we then added for convenience). The pilot capital call was completed in 3 days, a noticeable improvement already. Encouraged by this, we moved to full implementation for all new capital calls.

RPA Development and Deployment: In parallel to the process changes, our RPA developer team built the UiPath automation components. The first bot ("CallNoticeBot") was developed to handle investor communications. It took about 3 weeks to develop and test. We provided the bot with templates of the capital call notice and email text. When triggered, the bot pulls investor contact information and commitment amounts from our investor database, populates the template for each investor, and sends out individualized emails with the correct attachments. During testing, we paid special attention to edge cases – e.g., if an email bounces or an attachment fails to generate. We programmed the bot to log any exceptions and alert the operations team in those cases, so a human can intervene if needed. The second bot ("FundsTrackerBot") was created to reconcile incoming payments. This bot was configured with secure read-only access to the firm's bank portal and the dedicated capital call email inbox. Every hour, it checks for any new payment confirmation emails or bank transaction references for the current capital call, and updates the central tracker accordingly. It also cross-checks the amount received against the expected amount for each investor, flagging any discrepancies immediately. This real-time tracking was a game-changer – previously, a team member might batch-check once a day, but the bot provided near immediate updates. Both bots were deployed in UiPath Orchestrator, allowing us to schedule or trigger them as needed (CallNoticeBot is triggered once approvals are complete; FundsTrackerBot runs periodically until the call is closed).

We made sure to **integrate the bots' actions with process mining**: the bots log their activities (emails sent, payments recorded) with timestamps in a log file. These log entries are fed back into Celonis, so the automated steps are also part of the end-to-end process view. This gave us a unified picture combining human and robotic actions. It also meant we could monitor the RPA performance via the same Celonis dashboard (e.g., verifying that the bot sends notices within minutes of final approval).

Change Management and Training: Implementation wasn't just technical; it also involved ensuring the teams were on board and ready to operate the new process. We conducted training sessions for each department:

- Investor Relations and Finance learned how to use the new tracker dashboard and what the SLA expectations were. We emphasized that the new alerts and RPA would *help* them by reducing manual work, not replace their judgment. For instance, Finance approvers were told: "You'll get an instant alert and the bot will do the send-outs after you approve – so your focus can be on verifying numbers, not chasing colleagues or doing clerical email tasks."
- Operations team was trained to oversee the RPA bots. We set up an **exception handling procedure**: if the bot flags an issue (like an investor's email is outdated or a

payment is short), the Operations person handles it manually. Over time, we also fine-tuned the bot based on feedback – e.g., adding a CC to an internal mailbox for every investor email sent, so there was a record for human staff to refer to easily.
- Legal was briefed that they would now get simultaneous notifications, and we clarified that if they had issues, they should flag them in the tracker immediately.

Throughout the implementation, we kept leadership and stakeholders informed with quick wins. After the first few fully automated capital calls were completed, we shared results with the team: "Look, the last capital call took 2.5 days versus our old 5+ days. And all investors funded on time with no errors in documentation." Seeing these tangible improvements helped sustain buy-in and enthusiasm.

Integrating into Daily Operations: Post-implementation, the new process became the standard operating mode. Each morning, managers from Investor Relations, Finance, and Operations quickly review the capital call tracker (which now doubles as a process mining dashboard) to see if any call is in progress and if any step is nearing a delay threshold. Because Celonis is updated in near real-time (including the RPA log events), this daily ritual provides early warning of any hiccup. For example, if an approval is pending and approaching the 8-hour mark, the system highlights it, and the team lead can ensure it's addressed before it becomes a delay. We also established a weekly review of KPIs: average capital call completion time, number of calls processed, any errors or exceptions, and investor feedback if available. These metrics keep the team accountable and highlight the impact of the changes.

To cement the improvement, we connected our process mining insights with a continuous improvement cycle. If the data shows any new pattern of delay (for instance, perhaps as volume grows we might see a new bottleneck), we will convene a small working group to address it. The mindset has shifted to **data-driven continuous improvement**. In fact, the success of this project has led CoreCentrica to create a small *Center of Excellence (CoE)* for Process Mining and Automation that will take the lessons from the capital call project and apply them to other processes (more on that in Future Scope).

In summary, the implementation phase translated analysis into action: we realigned the workflow, stood up RPA bots to automate tedious parts, and embedded process mining into the fabric of daily operations. The result was a much leaner, faster process for capital calls. The following section will quantify these results and describe the impact on the organization and its investors.

5. Results & Impact

The improvements from the process mining and automation initiative were **immediate and significant**. After full implementation, CoreCentrica's capital call processing time dropped sharply, leading to measurable benefits:

- **Dramatic Reduction in Processing Time:** The average end-to-end **cycle time was reduced from about 5 business days to 2 days**. In many cases, capital calls were completed even faster (some in just 1.5 days if investors funded promptly). This exceeded our initial target and represented a ~60% reduction in turnaround time. The elimination of idle waiting between steps (thanks to clear handoffs and alerts) combined with the speed of RPA (which can perform tasks in seconds that took humans hours) drove this improvement. For example, sending out 100 investor emails manually might have taken a coordinator several hours; the RPA bot handled it in a few minutes. This faster processing meant that the firm could call capital and have funds available for investments much more quickly, increasing agility. It also reduced stress during time-sensitive deals, since the operations no longer became a bottleneck.

- **Improved Investor Satisfaction:** We saw a **20% increase in investor satisfaction scores** related to capital call communications and responsiveness. Before the project, investor satisfaction (measured via a quarterly survey on operational performance) was modest – many investors had noted delays or confusion in the capital call process. After the changes, those survey scores rose significantly. Investors commented that capital call notices were "prompt and clear" and that the turnaround of confirmations was much faster. In numerical terms, if the satisfaction score was 7.5 out of 10 previously, it moved up to roughly 9.0 out of 10 – a 20% jump. Some investors even gave unsolicited positive feedback, a marked change from the previous silence or occasional complaints. This boost in satisfaction is critical in the alternatives space, where high-touch service is expected. By demonstrating operational excellence, CoreCentrica strengthened its relationships with clients, potentially encouraging reinvestment and positive word-of-mouth.

- **Error Reduction and Increased Accuracy:** With RPA handling data transfers and communications, the **error rate in the process dropped significantly**. Previously, manual steps introduced occasional errors – e.g., an investor's name misspelled on a notice or an incorrect amount in an email due to copy-paste issues. After automation, such errors were virtually eliminated (zero cases of notice errors in the first 10 automated calls). This improved accuracy not only enhances professionalism but also avoids the rework and embarrassment of correcting mistakes after the fact. External research shows that RPA implementation often leads to large improvements in quality; for instance, one study noted error rates decreasing by ~65% in automated workflows (Percentage of cases with error per project before and after RPA... | Download Scientific Diagram). Our experience mirrored this – by standardizing and automating tasks, we removed variance and inconsistency, leading to a more reliable process.

- **Operational Efficiency and Capacity Gains:** The operations team and other staff involved in capital calls experienced a substantial relief in workload. Tasks that used to require hands-on effort (like populating documents, sending reminders, checking payments) were now handled by the bots. We estimate that we saved **over 50% of manual work hours** on each capital call. Cumulatively, this freed up dozens of hours

per month for the team. Those hours were redirected to more value-added activities – for example, the Investor Relations team can spend more time proactively communicating with investors about portfolio updates rather than pushing paperwork. The Finance team can focus on analysis rather than chasing approvals. Essentially, the project allowed people to work at the **top of their skillset**, with the mundane tasks offloaded to automation. This has intangible benefits too: employee morale improved as their roles shifted from "process babysitters" to analysts and client service providers. It's worth noting that no jobs were cut – instead, people could be repurposed to handle the growing volume of deals without hiring additional headcount. This efficiency gain improves the firm's scalability.

- **Key Performance Metrics Before vs After:** The following table summarizes some core metrics before and after the process improvements:

Metric	Before (Baseline)	After (Optimized)
Capital call cycle time (avg)	~5 business days	~2 business days
Finance approval time (avg)	32 hours	8 hours
Investor response tracking	Manual, ad-hoc daily	Automated, hourly updates
Investor satisfaction score	7.5/10 (baseline)	9.0/10 (20% increase)
Errors in notices/emails	Occasional (5-10% calls)	Near 0% (no errors seen)
Staff hours per call (est.)	~10 hours of effort	~4 hours of effort

- *Table: Key process metrics before and after the process mining initiative.*

- **Financial and Business Impact:** While the primary goal was operational efficiency, there were positive financial implications as well. Faster capital call execution meant funds were received earlier, which in some cases allowed the firm to deploy capital into investments sooner (minimizing cash drag). Over a year, shaving a few days off each capital call potentially means tens of thousands of dollars in extra investment income for the fund (especially in a rising rate environment or when quick deployment is crucial for deal capture). Additionally, by avoiding the need to hire an extra operations analyst (which might have been necessary to handle the workload as the firm grew), CoreCentrica saved on personnel costs. These benefits, while secondary to the main efficiency goal, contribute to a strong ROI for the project.

- **Qualitative Improvements:** Beyond the hard numbers, several qualitative benefits were observed. **Transparency and Control** over the process improved – managers now have

real-time insight and can confidently answer questions about where a capital call stands. This is a shift from the previous opaque process where information had to be gathered from multiple people. **Compliance and audit readiness** also saw an uptick: with standardized logs and clear records of each action (who approved when, when notices were sent, etc.), the firm found it much easier to demonstrate compliance with internal policies and regulatory expectations. In fact, during a routine internal audit, the auditors praised the comprehensive audit trail available for recent capital calls. Furthermore, **investor communications** are now more consistent in tone and format because they're templated and automated, helping reinforce the firm's brand professionalism.

- **Benchmarking Against Industry:** The results positioned CoreCentrica well relative to peers. Many alternative investment firms struggle with manual processes and delays (as evidenced by industry surveys where 65% of respondents wanted to move away from manual workflows (Go Digital To Crush Alternative Investment Bottlenecks - Study) (Go Digital To Crush Alternative Investment Bottlenecks - Study)). By cutting the capital call timeline to 2 days and automating key steps, CoreCentrica likely places in the top quartile of operational efficiency in this area. This becomes a selling point in due diligence when attracting new investors – operational excellence can be a differentiator. The success also validated the use of process mining in financial operations, which historically has been more common in sectors like manufacturing or standard finance processes (AP/AR). It demonstrated that even in a niche domain like alternative investments, **process mining can drive significant ROI** by uncovering hidden inefficiencies and guiding improvements.

Overall, the impact of the project was transformative. The combination of process mining insights and targeted automation not only solved the immediate pain points (unclear handoffs and long cycle times) but also delivered a ripple effect of positive outcomes – happier investors, a more empowered team, and a more agile operation. As one Celonis case study noted, **organizations have realized lower risk and faster processing through such initiatives (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis) (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis)**, and CoreCentrica's results echo that sentiment. With these results in hand, the firm is keen to sustain and build upon the improvements, while also reflecting on the challenges overcome and lessons learned during the journey.

6. Challenges & Lessons Learned

Implementing process mining and RPA in an operational process was not without its challenges. Throughout the project, the team encountered obstacles and learned valuable lessons. Here we outline the key challenges faced, how we mitigated them, and the lessons that can guide future initiatives:

- **Data Quality and Integration:** *Challenge:* Our process mining analysis was only as good as the data feeding it. Early on, we discovered gaps and inconsistencies in the event logs. Not all timestamps were recorded in a unified format, and some steps (like informal approvals via email) weren't captured in any system. Combining data from the CRM, email system, and accounting database was also technically tricky. *Mitigation:* We worked closely with the IT department to extract logs from all sources and to cross-verify them. Where a particular event wasn't explicitly logged, we inferred it (for example, using an email sent time as a proxy for notice dispatch). We also implemented better logging going forward – e.g., ensuring that when a Finance approval happens via email, a quick form is filled to log the timestamp. We iterated on the data gathering until the Celonis model's picture matched reality as understood by the teams. *Lesson:* **Invest upfront in data preparation.** Expect to spend significant time cleaning and aligning data. It's crucial to have complete event coverage for process mining to yield accurate insights. This challenge reinforced that having integrated systems or a data lake can greatly ease process mining projects. We also learned to continuously update our data collection as the process evolves (so new steps added are logged from day one).

- **Stakeholder Buy-In and Change Resistance:** *Challenge:* Introducing a new way of doing things – especially one involving software "watching" processes and robots automating tasks – can raise concerns. Initially, a few team members were wary: the Operations staff feared that the process mining analysis might be used punitively to judge their performance, and some were anxious that RPA bots might replace their jobs. Also, mid-level managers were hesitant to enforce new SLAs like the 8-hour approval rule, worrying it could disrupt people's work routines. *Mitigation:* We addressed this with transparent communication and involvement. Early in the project, we held demo sessions of the Celonis tool showing how it works and emphasizing it's about *process* improvement, not individual surveillance. We highlighted that any findings would be used to fix the process, not blame people. For RPA, we assured the team that bots would take over *mundane tasks* and free them for higher-level work, not eliminate roles. We also involved key employees in designing the new workflow, giving them ownership of the changes. Additionally, we had leadership vocally support the initiative – executives communicated that this project was a priority for the company and that those involved in making it succeed would be recognized. This top-down support helped overcome resistance. *Lesson:* **Change management is as important as the technology.** Secure stakeholder buy-in early, and maintain open lines of communication. By treating employees as partners in the improvement (rather than imposing changes on them), you get better adoption. It's also vital to have leadership champion the project to lend it weight. We learned that demonstrating quick wins (like the pilot success) also helps convert skeptics into advocates.

- **Process Complexity and Exceptions:** *Challenge:* The capital call process, like many others, had numerous exception paths and special cases. During the redesign, we realized that not every capital call is identical – e.g., sometimes a call might be a "dry run" or preliminary notice, or a subset of investors are involved. Capturing all these

variations in the process model and handling them in automation was challenging. There was a risk that our automated solution might not handle an unusual scenario correctly, causing a failure. *Mitigation:* We took a cautious approach by **phasing the automation**. Initially, we set the bots to handle the standard cases, and flagged any complex cases for manual handling. Over time, as we encountered different exceptions, we updated the bot logic to accommodate them. For instance, when we did a capital call that excluded a certain investor due to a prior arrangement, the bot was updated to allow skipping certain names. Essentially, we built flexibility into the system. We also maintained manual oversight – the Operations team monitored all bot actions especially in the early runs, ready to step in if something looked off. *Lesson:* **Anticipate exceptions and plan for human-in-the-loop.** It's hard to automate 100% of cases. A hybrid approach where automation handles the bulk and humans handle outliers works best initially. Documenting the various scenarios and gradually enhancing the automation proved to be a sustainable path. We learned not to rush into automating everything at once; instead, stabilize the core process and then expand the automation's scope incrementally.

- **Technical Integration and Tool Limitations:** *Challenge:* Integrating Celonis with our internal systems and UiPath bots had a learning curve. We had to ensure data flowed smoothly from production systems to Celonis (without too much lag) and from Celonis insights to triggering UiPath (for the alert-driven automations). We also encountered some limitations: our Celonis license was initially for a generic package not specifically tuned to our use case, so we had to customize analyses. Similarly, the Power BI visualization we tried as a backup was not as rich in process mining capability (we tried PAFNow, which was decent but not as powerful as Celonis for process discovery). *Mitigation:* We invested time in the technical setup: scheduling regular data exports to feed Celonis, using the Celonis API to send alert triggers that UiPath could listen for, etc. We also got support from the vendors – Celonis consultants helped us build custom dashboards, and UiPath's team advised on best practices for triggering bots from external signals. When we faced an issue with Celonis not capturing a particular nuance, we sometimes had to adjust our data or use workaround logic (like creating an artificial "event" to mark a stage). *Lesson:* **Leverage expert support and be prepared to adapt tools.** No tool will fit perfectly out-of-the-box, especially for niche processes. It's important to have technical experts or vendor support to help configure the tools to your needs. Additionally, having a backup plan (like using Power BI for some visualizations) was useful – it gave us flexibility in case one platform couldn't do everything. The challenge also taught us about the importance of system connectivity; in the future, we'll look to streamline integration points (perhaps directly integrating Celonis with databases rather than intermediate files, etc.).

- **Maintaining Process Discipline:** *Challenge:* After implementation, one risk is people falling back into old habits – e.g., if under pressure, maybe someone bypasses the new tracker and does a side communication, or delays an approval despite the SLA. Maintaining the new process discipline and not letting the process mining dashboard

gather dust was a concern. *Mitigation:* We addressed this by institutionalizing the changes: updating official policies, job descriptions (for instance, the operations analyst's role now explicitly includes monitoring the Celonis dashboard). We also continued regular training and made the improved metrics visible and celebrated. When the first few calls succeeded well, we highlighted those as case studies internally ("Look how smoothly Project X's capital call went – this is the new standard"). By reinforcing the benefits and making it actually easier to follow the new process than to circumvent it, people stuck with the program. We also set up periodic audits – every quarter, someone from the CoE reviews a sample of capital calls to ensure the process was followed and logs are complete. *Lesson:* **Process improvement is not a one-time event; it requires ongoing management.** Regular check-ins, audits, and celebrating adherence help sustain the change. We learned that when people see the positive results (less work, faster outcomes), they are less likely to revert to old ways. Nonetheless, vigilance is needed to catch any slip-ups early.

In reflecting on these challenges, we gleaned several **lessons for future projects**:

- Start with a well-defined problem and get the data right.
- Engage those who do the work – their knowledge combined with process mining data is very powerful.
- Small pilots can build confidence and surface issues before full rollout.
- Change management cannot be an afterthought; address the human side proactively.
- Finally, measure and communicate results. Seeing the success helps maintain momentum and secures support for tackling the next process.

By overcoming these challenges, CoreCentrica not only improved one process but also built organizational capability in process optimization. The team is now better equipped to approach other bottlenecks with the same data-driven, collaborative mindset. These lessons learned will inform how we expand process mining and automation to other areas of the business.

7. Future Scope & Recommendations

The success of the process mining initiative for capital calls has opened the door to further optimization opportunities at CoreCentrica. In this section, we outline the future scope for applying process mining and automation to other areas, and provide recommendations based on our experience:

- **Extend Process Mining to Other Operational Areas:** Now that a **Process Mining Center of Excellence** is established, CoreCentrica can expand its use of Celonis (and similar tools) to other critical processes. One immediate candidate is the **distribution process** (processing distribution payouts to investors). Much like capital calls, distributions involve multiple teams and communications. Applying process mining could uncover delays in preparing distribution notices or sending wires, and we could similarly

streamline those. Another area is **investor onboarding and KYC (Know Your Customer) compliance** for new fund investors. This process often requires document collection, approvals, and back-and-forth with investors – ripe for analysis and improvement. By building event logs for onboarding (e.g., tracking how long ID verification takes, where applications stall), we can identify bottlenecks and automate portions (perhaps using RPA to collect documents or fill forms). Essentially, any process that is document-heavy and crosses departments in the alternative investment operations could benefit from this approach. We recommend prioritizing processes where the pain is high (either by cycle time or volume) and where data is available to mine.

- **Apply Process Mining in Trade Settlement & Investment Lifecycle:** While our focus was on the document workflow side (capital calls), CoreCentrica can also look at **trade settlement processes** for any alternative trades or secondary market transactions. For instance, if the firm engages in secondary transfers of fund interests or processes internal trades of illiquid assets, those could be complex and currently manual. With regulatory trends pushing even traditional markets to faster settlement (T+1) (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis) (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis), it's worth examining how efficiently the firm's internal trade processes operate. Process mining could help identify where any trade booking errors or settlement delays occur. In capital markets, process mining has been used to quantify the impact of settlement failures and improve straight-through processing (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis); similarly, CoreCentrica could ensure that its internal trade processes are optimized to minimize errors and delays. The recommendation is to collaborate with the trading or portfolio management teams to get event data on trade executions, confirmations, and settlements, then analyze those flows for improvement opportunities.

- **Increase Automation with Intelligent Tools:** Having seen the benefits of RPA, the next step is to explore more advanced intelligent automation. For example, integrating an **OCR (Optical Character Recognition)** and document understanding tool with UiPath could automate data entry from documents. In alternative investments, lots of information comes in as PDFs (capital call notices from underlying funds, financial statements, etc.). Tools like UiPath's Document Understanding or AI-based OCR could extract data from these and update systems, further reducing manual workload. Another avenue is using **Machine Learning for predictive insights** – e.g., analyzing past capital call data to predict which investors are likely to delay funding, and then proactively reaching out to them. Celonis has a ML Workbench that might be leveraged for such predictive analytics (Trade settlement trends highlight strong need for execution management and process mining in banking | Celonis). We recommend gradually layering these intelligent capabilities where it makes sense, always tied to clear use cases (like predicting bottlenecks or auto-extracting data). Start with a pilot on one or two

AI-driven automations to validate ROI.

- **Continuous Improvement and Process Monitoring:** We suggest institutionalizing a **continuous improvement program** using the process mining dashboards. The idea is to not only fix current issues but to continuously monitor processes for any deviations or new inefficiencies. For instance, as volume increases or if the organization launches new funds, the process might evolve and new pain points might emerge. Regularly reviewing the Celonis dashboards for key KPIs (cycle time, compliance to process model, etc.) will allow the team to catch and address issues early. Setting up **alerts and benchmarks** within Celonis (as we have started to do) ensures that performance doesn't slip. The future vision is to have a real-time command center for operations – where any red flag in a process (say a step taking 2x longer than benchmark) triggers immediate remedial action, possibly even automatic through Action Flows. In essence, process mining becomes part of daily management practice.

- **Scalability and Governance:** As process mining and RPA efforts expand, governance becomes important. We recommend establishing clear ownership for each process's data and automation. For example, assign process owners for capital calls, distributions, etc., who are responsible for the performance and improvements of those processes. These owners would work with the CoE to analyze data and implement changes. Additionally, ensure there's a pipeline of initiatives – a living roadmap where the most impactful process issues are tackled one by one. This prevents ad-hoc deployment of RPA without analysis or analysis without action. Governing the data is also vital: as more processes are mined, data privacy and security should be reviewed (particularly if we start mining processes involving personal investor data, to stay compliant with regulations). Documentation of all changes and keeping stakeholders informed will help maintain trust and clarity as we make further improvements.

- **Benchmark and Innovate:** Looking outward, CoreCentrica should benchmark its operational metrics against industry peers or standards. If possible, participating in industry forums or studies on **operations in alternative investments** can provide insight into where we stand and what "best in class" looks like. For example, if top quartile firms process capital calls in 1 day, that could be our next target. Also, staying updated on emerging technologies is recommended. Process mining itself is evolving (e.g., object-centric process mining for interconnected processes (["Spaghetti" directly-follows graph of the P2P process obtained using... | Download Scientific Diagram])); such developments might unlock new ways to analyze multi-process interactions (like how capital call process impacts downstream accounting entries, etc.). On the RPA side, the trend is towards hyperautomation – combining RPA, AI, and process mining in one loop. We should keep an eye on tools that integrate these (some vendors offer unified platforms). A forward-looking idea is to explore **process automation platforms or BPM software** that could digitize the entire workflow end-to-end, reducing reliance on email or manual trackers. We could feed the optimized

workflow into a BPM tool that ensures each step is tracked in a single system.

- **Knowledge Sharing and Culture:** Culturally, we should spread the success story of this project internally and encourage a mindset of **data-driven improvement**. Training more staff on using Celonis (perhaps through the Celonis Academy) and on basic automation concepts will build a wider base of people who can identify and champion improvements. Perhaps we can run an internal workshop or hackathon for employees to suggest the next process to optimize, using what we've learned. This fosters ownership and continuous innovation beyond just the core project team.

In conclusion, the future scope for CoreCentrica is bright: by leveraging the proven capabilities of process mining and RPA on other bottlenecks, the firm can achieve **broader operational excellence**. Our recommendations center on scaling the approach thoughtfully – prioritizing high-impact areas, using a structured roadmap, and combining technology with human insight. If executed, these steps will not only optimize specific workflows but also embed a culture of efficiency and agility across the organization. CoreCentrica can then confidently handle growth, regulatory changes, and increasing investor demands, having made operational excellence a competitive advantage.

8. Conclusion

The **CoreCentrica process mining project** demonstrates how data-driven insights and automation can resolve operational bottlenecks in alternative investment operations. By focusing on the capital call workflow – a critical process with clear inefficiencies – the project delivered transformative results. We began with a thorough analysis of the problem: manual, fragmented steps and unclear team handoffs were causing unnecessary delays and straining both staff and investor goodwill. Through process mining, we obtained a *fact-based view* of this process, uncovering exactly where and why these delays occurred. This clarity was the foundation for change.

Leveraging Celonis to map the process and measure performance allowed us to target improvements with precision. We then redesigned the workflow for clarity, accountability, and parallelism, ensuring each team knew their role and handoffs were smooth. The integration of **RPA (UiPath)** proved to be a game-changer, automating repetitive tasks like sending notices and tracking payments with near-instant speed and 100% accuracy. The results – **cutting processing time from 5 days to 2 days, eliminating errors, and boosting investor satisfaction by 20%** – speak to the power of combining process mining insights with automation execution. These outcomes were not just theoretical; they translated into faster investment funding, happier clients, and a less burdened operations team.

Beyond the numbers, one of the most important outcomes is the shift in mindset at CoreCentrica. The project showcased the value of **operational excellence** and created a template for how to achieve it: start with data, involve the people, improve the process, and use

technology smartly. It broke down silos between teams as everyone worked off a single source of truth for the process. It also alleviated pain points that had long been taken for granted as "just the way things are in this industry." By proving that even a traditionally paperwork-heavy process can be modernized, the project has encouraged teams to look for other improvement opportunities. In effect, it ignited a culture of continuous improvement.

There were important lessons learned along the way – the need for good data, the necessity of stakeholder buy-in, and the prudence of handling exceptions, to name a few. These lessons have prepared CoreCentrica to tackle future projects more efficiently. The challenges we faced and overcame have made the organization more resilient and better at change adoption. Notably, the importance of change management emerged as a key insight: technology implementations succeed when the people using them are engaged and supportive.

In conclusion, the combination of **process mining and RPA** proved to be a powerful catalyst for operational excellence at CoreCentrica. It resolved a concrete bottleneck in trade settlement/document workflow and delivered quantifiable improvements. But more than that, it transformed how the firm thinks about its processes – from opaque and static to transparent and continually optimizable. As alternative investment firms grapple with increasing volumes and client expectations, this case exemplifies a path forward: embrace data, leverage modern tools, and make process innovation a continuous pursuit. CoreCentrica's journey shows that even in an industry steeped in tradition and complex processes, there is ample room for efficiency gains. The successful optimization of the capital call process is not an end point, but a springboard for ongoing improvements across the organization.

CoreCentrica is now well-positioned to extend these successes to other areas, ensuring that its operations remain **agile, efficient, and scalable** in the face of growth. By publishing these findings and methods (as we have done here on GitHub), we also contribute to the broader knowledge base, hopefully guiding and inspiring similar initiatives in other organizations. The message is clear: **process mining works** – it reveals the truth of how work gets done – and when paired with smart process redesign and automation, it can eliminate bottlenecks that once seemed intractable. The outcome is a win-win: better business performance and better service to investors, which ultimately is the cornerstone of success in the alternative investment arena.