

Metropolitan Data and Reporting

Current State Assessment

**MARKMAN
GROUP**



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Executive Summary

Project Background and Context

Objective: The Metropolitan project is an initiative aimed at evaluating and enhancing the organization's operational, data and reporting processes. This initiative seeks to identify inefficiencies, streamline interdepartmental workflows, improve system integration, and ensure compliance. The primary goal is to provide a robust and structured approach to data management and decision-making across departments, leveraging advanced tools and automation.

Scope: The project covers a detailed assessment of the organization's key workstreams, including Deal Team, Asset Management, COCD Pillar, Operations, Finance, Investor Relations, Operating Experts, Legal, and IT. It focuses on evaluating the effectiveness and utilization of core systems such as PIPE, LP360, Atom Invest, and DealCloud, ensuring that these tools align with business needs and operational demands. Through this assessment, Metropolitan aims to establish a clearer understanding of its data flow, interdependencies and reporting structures, paving the way for strategic improvements.

Context: This initiative is a key component of Metropolitan's broader strategy to optimize its operational framework, enhance reporting accuracy, and strengthen compliance and governance mechanisms. The organization has recognized challenges in data consistency, system integration, and manual processes, which impact workflow efficiency and decision-making. The discovery sessions and process walkthroughs conducted as part of this initiative have provided insights into bottlenecks and improvement opportunities across departments.

To address these challenges, Markman Group has engaged in a structured approach that involves reviewing existing workflows and report process creation, mapping data interactions and validating findings with stakeholders. The project aims to deliver actionable recommendations that will drive efficiencies, reduce manual dependencies, and create a more streamlined and automated reporting environment.

Key Objectives

- **Streamlining Dependencies:** Departments such as Asset Management and Investor Relations rely on overlapping data inputs and processes, leading to inefficiencies and delays. The project seeks to refine these dependencies by creating standardized workflows and improving cross-team collaboration.
- **Data Infrastructure Improvement:** Existing tools such as PIPE, LP360, and DealCloud are critical for data management but require enhanced integration to improve consistency and reduce redundancies. Ensuring seamless connectivity between these systems will enhance data accuracy and reporting efficiency.
- **Process Optimization:** Current workflows involve a significant amount of manual data reconciliation, leading to errors and inefficiencies. Identifying opportunities for automation and implementing structured validation steps will help improve turnaround times and reporting quality.

- **Compliance Assurance:** Regulatory and investor reporting is a key focus area, requiring stringent controls over data integrity and process transparency. The project aims to standardize reporting formats and governance frameworks to ensure compliance with internal and external requirements.
- **Enhanced Decision-Making:** Providing leadership and stakeholders with real-time access to actionable insights through improved reporting capabilities and system enhancements.
- **Automation of Tasks:** Reducing manual interventions by automating data collection, report generation, and distribution to minimize errors and improve efficiency.
- **Long-Term System Scalability:** Developing a flexible data pipeline and infrastructure that can grow with the business and adapt to future needs.
- **Data Governance and Security:** Strengthening data governance frameworks and security measures to safeguard sensitive financial and operational data.

Assessment Methodology

- **Data Collection:** Extensive discovery sessions and walkthrough meetings were conducted with key stakeholders across all workstreams, including Deal Team, Asset Management, COCD, Operations, Finance, Investor Relations, Legal, Operating Experts and IT. Additional system deep dives were conducted to understand data flow and dependency mapping. Documentation reviews were performed to assess current processes and reporting structures.
- **Analysis:** Workflows were mapped, bottlenecks were identified, and system integration points were evaluated. The assessment included a gap analysis of existing vs. desired reporting capabilities, pinpointing inefficiencies in data entry, reconciliation, and accessibility. Core platforms such as PIPE, LP360, and DealCloud were analyzed for their alignment with business objectives and technical capabilities.
- **Validation:** Findings were cross-referenced with departmental stakeholders to ensure alignment with operational objectives. Stakeholder feedback was incorporated to refine identified issues, prioritize strategic initiatives, and propose viable solutions for automation, integration, and compliance enhancement. Validation sessions also included testing and piloting proposed improvements in controlled environments before full-scale implementation.

Overview of Findings

1. System Integration Challenges

Metropolitan faces inefficiencies due to limited integration between key tools such as PIPE, LP360, Atom Invest, and DealCloud. During fund reconciliations, discrepancies frequently arise as DealCloud and PIPE generate different results for identical fields like deal ownership, sector classification, and commitment

tracking. These discrepancies force teams to manually verify and correct data, leading to delayed reporting cycles and increased risk of errors.

Additionally, data from Atom Invest and PIPE lacks real-time validation, leading to misalignments in valuation processes. The manual intervention required to ensure consistency across systems has resulted in inaccuracies in portfolio reporting, necessitating last-minute adjustments before submission to investors.

LP360's limited integration with other platforms causes data consistency issues, particularly in fund-level financial reporting. Manual reconciliation is often needed to align LP360 outputs with data from PIPE and Atom Invest, increasing the risk of inaccuracies.

DealCloud's integration with PIPE and Atom Invest is not fully optimized, contributing to discrepancies in deal tracking and reporting. The entry of closed deals into Atom Invest from Deal Cloud is a manual process, following standardized checklists but lacking automated synchronization.

These integration challenges across all core systems force teams to rely heavily on manual processes, reducing efficiency and increasing the likelihood of errors.

2. Data Integrity and Ownership Issues

The lack of a clearly defined responsibility for updating DealCloud post-deal closure has led to persistent data discrepancies between DealCloud and PIPE. For example, ownership of data is not systematically transferred from the Deal Team to Asset Management, resulting in outdated and inaccurate records in DealCloud. This issue was highlighted in several quarterly investor reports, where ownership and sector classifications were misrepresented, necessitating manual reconciliations.

Furthermore, the absence of a structured process for transferring sectors and funding updates from the Deal Team to Asset Management has led to misclassifications and reporting errors. Sector reclassifications made in PIPE were not consistently reflected in DealCloud, causing discrepancies in quarterly reports. Additionally, amendments and loan restructures are not systematically tracked in DealCloud, forcing Operations to rely on manual amendment trackers to maintain accurate records. The reliance on manual interventions to correct these issues highlights the critical need for a robust data ownership framework and standardized update protocols.

3. Manual Processes in Reporting

There is a heavy reliance on manual data extraction and report preparation across multiple teams, which is prone to errors and leads to delays in delivering insights. The Asset Management team manually compiles income reports from PIPE and valuation files to produce quarterly summaries. For instance, during quarterly reporting, discrepancies in financial data between systems or the different reports required manual reconciliation to ensure consistency, leading to delays. Despite using Macabacus for data transfers, formatting and resizing remain manual tasks, contributing to extended report finalization times.

Additionally, Fact Sheet creation remains a labor-intensive process, involving repetitive manual formatting despite the availability of automation tools, further extending report preparation timelines.

Investor Relations also relies heavily on manual processes for compiling quarterly reports, which increases the risk of data inconsistencies and slows down the reporting cycle. The manual consolidation of data from multiple systems, including LP360 and DealCloud, requires considerable time and effort, leading to delays in the delivery of investor communications.

4. Underutilization of Core Systems

Tools such as DealCloud and LP360 are not fully leveraged for their intended capabilities. For example, DealCloud's potential remains underutilized due to inconsistent data practices and the absence of standardized workflows. Teams are not fully leveraging the system's capabilities, such as conditional fields that allow for specific fields to become visible or mandatory based on deal stages, and robust relationship management. Additionally, the platform's task and workflow automation tools, which could streamline routine processes like reminders and approval workflows, remain underused.

During pipeline reviews, add-ons were frequently entered as new transactions, which inflated metrics and misrepresented deal activity. For example, Operating Experts seemed to have worked on very few add-ons, when they were misclassified as new deals in the system. This misclassification complicates performance tracking and undermines the reliability of reporting metrics, forcing teams to rely on manual adjustments.

The lack of usage on these core functionalities and adherence to standardized usage protocols further limits the system's effectiveness, contributing to data inconsistencies and inefficiencies.

Strategic Recommendations

1. IT Oversight (Architecture)

The Data Lake and SQL Database architecture represents the most optimal and future-proof solution for the firm's data needs. By consolidating all data into a centralized, structured system, this approach establishes a single source of truth, eliminating fragmentation across multiple tools and manual files. It ensures consistent, validated, and well-governed data, reducing errors and inefficiencies in reporting, investor communications, and analytics.

This architecture provides long-term scalability, enabling seamless integration of additional data sources as the business evolves. It enhances data governance and security through automated quality checks, standardized KPIs, and controlled access to sensitive information. Furthermore, this model facilitates real automation in Power BI, Alteryx, and other tools, eliminating repetitive manual work.

An additional advantage is the foundation it sets for advanced analytics and AI/ML capabilities, which will be crucial for forecasting, risk assessment, and strategic decision-making. While other solutions may offer quicker implementations, they lack the robustness needed to support future data-driven initiatives.

Given the firm's moderate data volumes, implementing this architecture will not be excessively costly and will lead to long-term cost efficiencies by reducing manual efforts, preventing data inconsistencies, and

ensuring smooth operations across all teams. This makes the Data Lake and SQL Database architecture a strategic investment for both immediate improvements and sustainable growth.

2. Governance Improvements

1. Data Ownership & Accountability

Establish clear data ownership throughout the investment lifecycle to ensure smooth transitions between departments and minimize data discrepancies. For instance, automate deal ownership transfers in DealCloud upon deal closure, assigning Asset Management as the new owner. Currently, unstructured handoffs have resulted in delayed updates and reporting errors due to unclear responsibilities.

Implement a Deal Ownership Log to track ownership changes and designate Data Stewards responsible for regular audits and correcting historical data inconsistencies. For example, the absence of ownership reassignment after deal closures led to discrepancies in DealCloud and PIPE, causing delays in investor reporting. Automated notifications should be sent to relevant teams during ownership transitions to streamline accountability.

2. Access Control & Security Compliance

Implement Role-Based Access Control (RBAC) and enforce security protocols to protect sensitive data and ensure accountability for modifications. For example, Finance should have exclusive rights to update NAV figures, while Investor Relations can only view them.

Establish audit logs to track all data modifications and implement temporary access controls for sensitive data, ensuring that only authorized personnel can access critical information for limited periods. The lack of such protocols has resulted in unauthorized modifications to legal contracts and financial data, increasing compliance risks.

3. Data Lexicon & KPI Catalogue

Develop a company-wide lexicon to standardize definitions of key terms and classifications across DealCloud, PIPE, LP360, and Atom Invest. This lexicon will serve as a reference for consistent terminology, ensuring uniform data interpretation across departments.

In addition to traditional definitions, establish a comprehensive data point registry that identifies the "golden source" for each critical data element. For instance, discrepancies in deal names between PIPE and DealCloud highlight the need to define which system holds the authoritative data. The registry should specify the source of truth, data owner, and system of record for each data point, alongside usage guidelines to ensure consistent data management practices.

Create a KPI catalogue detailing metric definitions, calculation methods, data ownership, and reporting frequencies. Standardizing these definitions will reduce discrepancies such as inconsistent "broker vs. non-broker" understanding between teams and improve the accuracy of performance tracking and decision-making processes.

4. Reporting Governance

Establish a comprehensive reporting governance framework to ensure accuracy, consistency, and compliance across all reporting activities. Utilize Business Intelligence (BI) tools like Power BI to automate investor reporting workflows, integrating data from PIPE, LP360, and DealCloud to maintain a single source of truth. Implement automated data validation checks to identify discrepancies early in the reporting process, reducing the need for manual corrections.

Introduce standardized reporting templates and create a centralized repository for all reporting documents to ensure uniformity in presentation and content. Implement structured approval processes where Finance, Operations, and relevant stakeholders must review and sign off on reports before publication. These processes should include version control and audit trails to track changes and ensure accountability.

Additionally, align reporting frequencies and formats across departments to minimize redundancies and inconsistencies. Addressing these gaps will improve the reliability and efficiency of the firm's reporting mechanisms.

3. Process Improvement

1. Streamlining Data Entry and Validation

Automate data entry processes to reduce reliance on manual inputs, minimizing errors and improving efficiency. Introduce real-time validation mechanisms to ensure data accuracy across PIPE, Atom Invest, and DealCloud. Automated workflows can streamline data consolidation and validation, reducing time spent on manual reconciliations.

2. Enhancing Workflow Automation

Leverage automation tools like KNIME, Alteryx, Power Automate or Power BI to standardize and automate routine reporting tasks. Implement automated pipelines for data extraction, transformation, and loading (ETL), eliminating repetitive manual work and freeing up resources for higher-value tasks. Utilize workflow automation in DealCloud to manage deal lifecycle stages, approval processes, and task assignments.

3. Optimizing Cross-Departmental Collaboration

Establish centralized communication platforms and standardized handoff protocols between teams to improve collaboration and data consistency. Regular cross-departmental meetings can ensure alignment on data definitions, reporting standards, and process improvements. Introduce shared dashboards to provide real-time visibility into key metrics across departments, promoting transparency and accountability.

4. Reducing Reporting Redundancies

Consolidate reporting tools and templates to minimize duplication of effort and ensure consistent data presentation. Implement version control and centralized reporting repositories to track document changes and maintain uniformity. Align reporting schedules and formats across teams to streamline workflows and reduce redundancies.

5. Maximizing System Capabilities

Develop standardized protocols for utilizing existing system functionalities across departments. For example, teams should fully leverage workflow automation features in i.e. DealCloud to minimize manual interventions and reduce reporting time. Enhancing the use of these tools will not only improve data accuracy but also free up resources for strategic initiatives.

Incentivize teams to adopt system features by incorporating usage metrics into performance reviews, ensuring accountability for both individual and departmental adoption rates. By fostering a culture of continuous improvement and embracing technology, Metropolitan can drive greater operational efficiency and data consistency.

Current State Overview

Organizational Structure

Overview

Metropolitan's organizational structure is designed for strategic leadership, investment execution, and operational efficiency. The firm operates through four primary divisions:

1. **Senior Management** – Provides overall governance, risk oversight, and firm-wide leadership.
2. **Investment Committee** – Exercises final investment decision-making authority.
3. **Investment Management** – Responsible for deal sourcing, underwriting, and asset management.
4. **Business Management** – Oversees finance, investor relations, legal, and operations.

With 31 professionals as of December 2024, Metropolitan maintains a highly specialized and disciplined team, ensuring robust investment strategy execution.

1. Senior Management

Key Executives

- **Paul Lisiak** – Managing Partner, Chief Investment Officer (CIO) | 26 years of experience | University of Pennsylvania
- **Julian Weldon** – General Counsel, Chief Compliance Officer (CCO) | 27+ years of experience | University of East Anglia
- **Stephen Faughnan** – Managing Director | 26+ years of experience | Pace University, NYU Stern

2. Investment Committee

Committee Members

- **Paul Lisiak** – Managing Partner, CIO
- **Adrian Blumfield** – IC Member | 30+ years of experience | University of Cambridge, London Business School
- **Fred Ganning** – IC Member | 30+ years of experience | Seton Hall University

3. Investment Management

Investment Sourcing & Underwriting

- **George Alifragis** – Head of Operating Expert Network
- **Richard Lin** – Managing Director
- **Maithili Purandare** – Vice President (OE)
- **Max Segal** – Principal
- **JD Sheldon** – Principal
- **Adam Weber** – Principal
- **Shirley Wang** – Associate (OE)
- **Prakarsh Jain** – Data Analyst

- **Jake Barrett** – Senior Associate
- **Chris Dolan** – Associate
- **Alex Roesch** - Associate
- 500+ Operating Expert Network – Provides specialized industry insights.

Asset Management

- **Alex Verba** – Managing Director
- **Wilmer Cerdá** – Vice President
- **Anthony Siragusa** – Vice President
- **Brandon Perdue** – Associate
- **Aaron Dalal** – Associate
- **Jack Deperrior** – Associate

Total Investment Management Team: 17 Professionals

4. Business Management

Finance & Accounting

- **Douglas Gold** – Chief Accounting Officer & Senior Vice President
- **Yuan Tian** – Controller
- **Kris Suthivong** – Assistant Controller
- **Casey Park** – FP&A Manager
- **Tara Battaglia** – Sr. Fund Accountant

Investment Operations & Reporting

- **Jason Bircann** – Vice President
- **Sean Browne** – Senior Ops Associate
- **Mackenzie Matscherz** - Reporting & Ops Associate

Investor Relations

- **Scarly Almonte** – Senior Associate

Firm Operations

- **Kevin O'Block & Megan Krishnamurthy** – Vice Presidents, Office of the CIO
- **Benjamin Bertan** – Associate General Counsel
- **Ellie Mohammadi** – Executive Assistant to CIO
- **Nicole Robinson** – Office Manager

Total Business Management Team: 14 Professionals

Key Systems and Tools

Metropolitan utilizes several core systems to manage data, reporting, and operational workflows. These systems include PIPE, LP360, Atom Invest, and DealCloud, each playing a distinct role in supporting various teams and processes.

1. PIPE

PIPE serves as a centralized data management and analytics platform, consolidating investment data from Excel models stored on SharePoint. It integrates multiple investment models into a cash flow table with over 600,000 rows, supporting detailed financial analysis and reporting. The Operations team uses PIPE for maintaining and reconciling investment models, tracking principal and interest payments. The Asset Management team relies on it for portfolio health tracking and delinquent payment monitoring. The Finance team extracts fund-level performance data from PIPE for financial statements and compliance documentation.

Challenges:

- Data quality issues from mismatched formats and incomplete fields.
- Manual dependency for data publishing and updates.
- Complex navigation requires advanced user familiarity.
- Disjointed inter-team processes leading to reporting gaps.
- Inconsistent data definitions between legal and cash management views.
- Manual additions required for legacy deals.
- Commitment tracking challenges due to multiple interpretations.

2. LP360

LP360 is designed for investor-specific data management, primarily supporting the Investor Relations team. Built on a Power BI semantic model, it consolidates data from fund administrator extracts stored on OneDrive. LP360 simplifies the generation of detailed cash flow and contribution reports through automated processes and pivot-based reports.

Challenges:

- Underutilization by Investor Relations, who often rely on Finance for reports.
- Quarterly update cycles limit real-time data access.
- Data accuracy issues due to reliance on external administrator templates.
- Manual reconciliation is needed to align outputs with PIPE and Atom Invest data.

3. Atom Invest

Atom Invest is the primary portfolio management platform, aggregating and validating data from PIPE, borrower reports, and other financial models. It supports comprehensive tracking, analysis, and reporting of investment performance. The system enhances portfolio health tracking and facilitates decision-making

with real-time, traceable metrics. While some integration with PIPE exists via Excel plugins, key processes like deal entry from DealCloud remain manual.

Challenges:

- Inconsistent portfolio company data formats requiring manual remapping.
- Limited automation and integration with other systems.
- Significant manual effort for financial statement mapping.
- Limited customization options as it operates as an off-the-shelf system.
- Not all pillars are onboarded, limiting full portfolio visibility.

4. DealCloud

DealCloud functions as an ad-hoc platform for contact and relationship management within the Asset Management team. It tracks deal lifecycle stages, centralizes information for analysis, and supports CRM management. DealCloud integrates with teams like Deal Team, Operating Experts, and Investor Relations but faces adoption challenges.

Challenges:

- Process adherence issues with tracking amendments and additional fundings.
- Unclear workflows between teams and limited system adoption.
- Need for restructuring and better-defined responsibilities.
- Misclassification of add-ons as new transactions, skewing performance metrics.
- Underutilization of conditional fields and workflow automation tools.

By addressing these challenges and optimizing the integration and utilization of these systems, Metropolitan can significantly enhance data accuracy, reporting efficiency, and overall operational performance.

Existing Data Infrastructure

The firm's current data infrastructure is fragmented, relying on multiple disconnected systems, including DealCloud, QuickBooks, Atom Invest, PIPE, LP360, and a separate Massena AWS database for COCD. Reporting processes are manual and heavily Excel-based, requiring frequent data downloads, manual adjustments, and consolidation efforts across these tools. Data is stored across OneDrive, shared drives, and investor portals like DX Portal and ShareFile for final investor-facing reports.

How Data is Accessed and Processed:

- PIPE and LP360 are Power BI semantic models built on Excel-based data stored in OneDrive. PIPE focuses on investment models, while LP360 is used for investor tracking. Both systems allow structured reporting via predefined Excel queries, but accessing the right data often requires technical support.

- Massena AWS Database holds COCD-related data, stored separately from reporting systems.
 - Other Systems (DealCloud, QuickBooks, Atom Invest, Anduin, Fund Admin Data, Bank Statements)
 - These tools do not have automated extractions, requiring manual data downloads at scheduled intervals or on an ad-hoc basis.
 - Data is pulled via Excel exports, PDF extractions, or manually entered into spreadsheets for further processing.

This introduces potential inconsistencies and delays, as teams must regularly check for updates and maintain version control.

Challenges with Current Reporting:

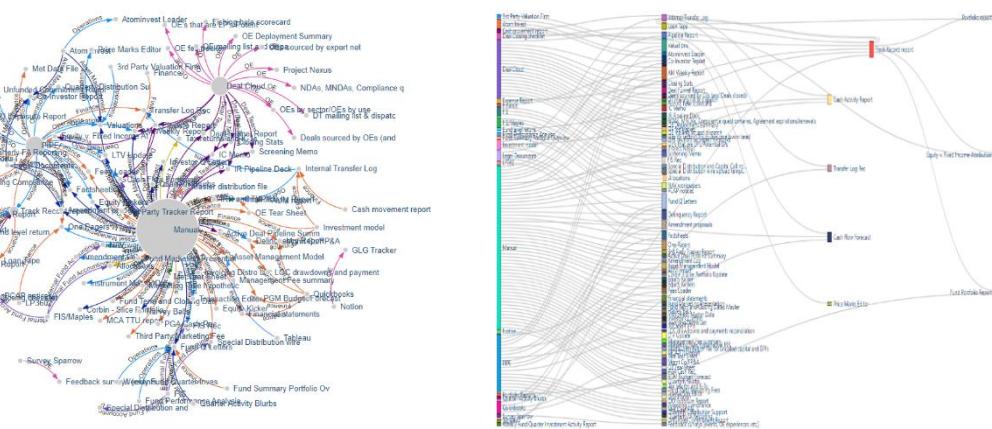
For many reports, the team extracts raw data from these systems, refines and enhances it manually in Excel, and compiles final outputs in Excel, Word, PowerPoint, or PDFs. While predefined queries in Excel help retrieve structured data from PIPE and LP360, significant manual effort is required to complete reports, update figures, and maintain consistency.

The lack of automation and centralized data storage results in inefficiencies, potential data inconsistencies, and heavy reliance on manual workflows. With multiple systems, scattered data storage, and dependence on technical users for data extraction, reporting is time-consuming, error-prone, and difficult to scale as the firm grows.

Interdepartmental Dependencies

Reporting Dependencies

Overview



Network graphs -Report/Deliverable with Data Sources and Data Source Owner

Metropolitan's reporting framework relies on multiple data sources and interdepartmental collaboration to produce key deliverables. While this structure enables a comprehensive and detailed approach to financial and operational reporting, it also creates challenges related to inefficiencies, delays, and a reliance on cross-functional coordination. The complexity of data dependencies introduces bottlenecks, particularly when inputs are not formally documented or centrally stored, making it difficult to track and validate information. This section outlines key reporting dependencies, the challenges they introduce, and potential areas for improvement.

Reporting Workflow and Data Dependencies

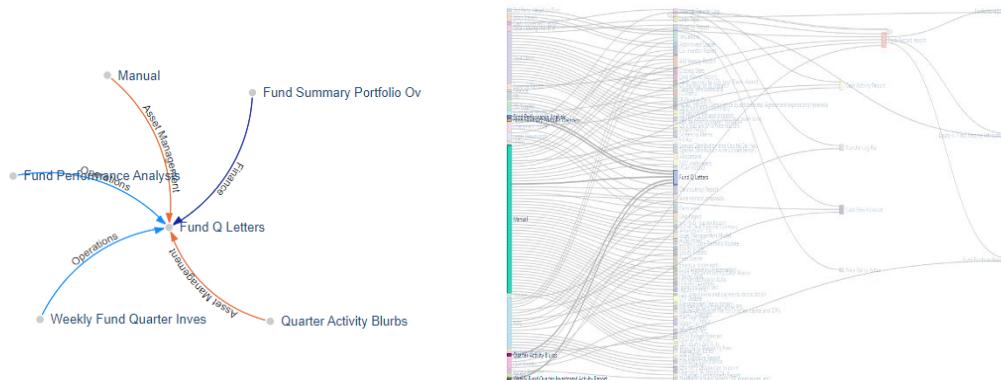
Metropolitan's reporting process is heavily dependent on data and contributions from various teams, including Deal Teams, Asset Management, Fund Accounting, Financial Planning and Analysis (FP&A), Investor Relations, and Operations. The primary challenges in this workflow include:

1. **Cross-Functional Dependencies** – Many reports require input from multiple teams, resulting in delays when availability and reporting timelines are misaligned.
 2. **Manual Data Handling** – A sizable portion of data originates from manual inputs, increasing the risk of errors, inefficiencies, and misaligned information across teams.
 3. **Lack of Centralized Documentation** – Several reports require insights from Asset Managers and Deal Team members that are not formally recorded, making tracking and consistency difficult.
 4. **Limited Transparency on Data Sources** – Many report owners have minimal visibility into the origins and quality of the data they rely on, making issue resolution complex and increasing validation efforts.

A substantial portion of the data flows within Metropolitan are manually managed or depend on previously generated reports, further compounding the complexity. This lack of a streamlined and automated reporting system leads to inefficiencies, delays, and a higher likelihood of data inconsistencies.

Key Reports and Their Dependencies

Fund Quarterly Letter

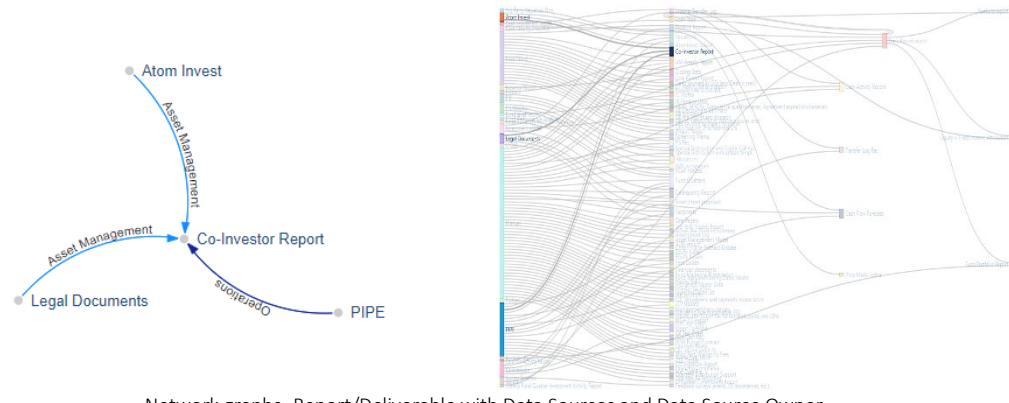


Network graphs -Report/Deliverable with Data Sources and Data Source Owner

The Fund Quarterly Letter is a critical investor-facing document that requires integration across multiple teams and internal reports.

- **Contributors:**
 - **FP&A** – Provides financial performance metrics and forward-looking projections.
 - **Fund Accounting** – Supplies financial statements and net asset value (NAV) calculations.
 - **Asset Management** – Delivers investment performance updates and valuation insights.
 - **Investor Relations** – Integrates the financial and operational narrative for investors and finalizes the report.
- **Challenges:**
 - The report requires inputs from multiple internal deliverables, making alignment complex.
 - Reliance on manual data handling increases inefficiencies and the risk of inconsistencies.
 - Dependencies on undocumented insights make it difficult to ensure data accuracy and completeness.

Co-Investor Report



The Co-Investor Report serves as an essential update on co-investment performance, requiring integration from multiple sources.

- **Contributors:**
 - **Operations Team** – Supplies execution updates and investment structuring details.
 - **Asset Management** – Provides real-time performance data and portfolio risk assessment.
 - **Investor Relations** – Prepares the final report and ensures consistency with broader investor communications.
- **Challenges:**
 - The preparation process lacks structured workflows, leading to an ad hoc approach to data collection.
 - Uncoordinated reporting cycles across teams result in inefficiencies and inconsistencies.
 - Reliance on scattered documentation makes it difficult to track and validate data sources.

The interconnected nature of these reports highlights the need for improved documentation and automation to enhance efficiency and accuracy.

Main Challenges and Pain Points

Metropolitan faces several recurring and critical challenges that affect operational efficiency, data accuracy, and reporting capabilities:

1. **Data Silos and Integration Gaps:** A lack of seamless integration between PIPE, LP360, Atom Invest, DealCloud, and external platforms like Tableau and AWS SQL (Massena) creates isolated data sources, inconsistent datasets, and reporting inefficiencies.
2. **Overreliance on Manual Processes:** Manual workflows for data updates, report preparation, and reconciliation introduce errors, delays, and strain on resources. This includes manual data extraction from legal documents and repetitive updates to standard materials.
3. **Inconsistent Data Governance:** Variability in data entry, validation, and maintenance across systems results in discrepancies that complicate decision-making. The absence of standardized KPIs and a comprehensive data lexicon exacerbates these issues.
4. **Training and Adoption Barriers:** Limited system training and resistance to change hinder the full adoption of advanced tools like Power BI, DealCloud and Atom Invest, affecting efficiency and data utilization.
5. **Dependency on External Vendors:** Reliance on third-party systems like AWS SQL (Massena) limits internal control over data management and increases operational costs. Vendor collaboration delays further hinder process efficiency.
6. **Ad Hoc Data Requests:** Frequent unplanned queries require accessing and compiling data from multiple sources, diverting resources from routine tasks and introducing potential inaccuracies.
7. **Reporting and Analytics Limitations:** The lack of a unified reporting approach results in redundant efforts, delayed insights, and underutilization of visualization platforms like Power BI and Tableau.

Detailed Departmental Analysis

Asset Management

Roles and Responsibilities

The Asset Management Team maintains primary responsibility for managing all credit-related matters within the portfolio companies. Their core mandate encompasses securing collateral and resolving complex situations, including defaults and related issues, and strategically deploying capital offensively and defensively. The team's fundamental objective is to optimize investment returns as originally underwritten while ensuring comprehensive protection of the firm's capital. In their day-to-day operations, they function as strategic partners to portfolio companies, providing essential input through the life of the investment.

Core Responsibilities:

1. Managing Credit-Related Issues

The Asset Management (AM) Team oversees comprehensive day-to-day credit operations with portfolio companies. Through close collaboration with portfolio company management teams and internal Metropolitan teams, they maintain detailed oversight of companies' financial positions and address emerging challenges throughout the business cycle. Their responsibilities encompass:

- Collateral Security: The team implements comprehensive protocols to secure and maintain proper collateral valuation in alignment with investment parameters. They maintain proactive measures to safeguard Metropolitan assets against potential adverse scenarios.
- Complex Situation Resolution: When encountering defaults, forbearance requirements, foreclosure situations, or maturity-related challenges, the team executes extensive resolution measures. This includes conducting negotiations with portfolio companies, structuring deal restructuring initiatives, and overseeing distressed asset management to maintain and optimize investment returns.

2. New Deals and Amendments

While the AM team's primary focus centers on existing investment management, they maintain significant involvement in new deal oversight and existing deal amendments. Their approach parallels Deal Team methodologies but requires more focused due diligence, including:

- New Investment Evaluation: The team conducts focused analysis and assessment of new opportunities, with focus on controls, downside protection, reporting, KPI monitoring, operational workings, and milestones.
- Existing Deal Amendments: The AM team executes amendments to existing investment terms, ensuring alignment with portfolio companies' current financial circumstances. This may include implementing maturity date extensions or restructuring payment schedules, as necessary.

3. Default Scenario Management

When default situations arise, particularly in cases involving forbearance, foreclosure defaults, or maturity misses, the AM team implements comprehensive management protocols:

- **Forbearance Management:** In situations where portfolio companies face challenges meeting financial obligations, the team negotiates detailed forbearance agreements to restructure repayment terms while maintaining asset protection measures.
- **Foreclosure Default Resolution:** For defaults potentially leading to asset liquidation or foreclosure, the team ensures comprehensive protection of Metropolitan interests and maintains strict adherence to legal and financial requirements throughout the process.
- **Maturity Issue Handling:** When companies encounter maturity date challenges, the AM team intervenes to negotiate extensions, validate repayment plan viability, and implement risk mitigation measures.

4. Quarterly Reporting and Valuations Process

The Asset Management (AM) team ensures comprehensive oversight of the valuation process across the entire portfolio. They prepare quarterly reports, including valuations, memos, and other documentation, to provide updates on the financial health and status of portfolio companies.

- **Valuation Process Management:** The team oversees and executes systematic valuation procedures to ensure accurate and insightful assessments of the portfolio's fair market value. This includes:
 - Implementing strategic vendor selection [assuming this is valuation firms?] for credit evaluations.
 - Executing phased valuation approaches based on transaction activity.
 - Engaging directly with third-party valuation firms.
 - Conducting comprehensive reviews and validations of valuation assessments.
 - Strategically determining final valuation positions.
 - Managing internal valuations for designated positions.

Through these efforts, the team calculates and assesses the fair market value of investments, providing critical insights into asset performance and ensuring the portfolio is accurately represented in internal financial reports.

- **Documentation Requirements:** Significant material movements in investment valuations or other noteworthy developments are documented through detailed memos for senior management review. The team additionally prepares comprehensive presentation materials for Valuation Committee review of material changes.
- **Investor Communication:** The team ensures systematic distribution of quarterly reports to investors, maintaining transparency and effective communication regarding portfolio performance metrics.

Strategic Partnership Objectives

Beyond day-to-day management and quarterly reporting obligations, the AM team maintains its focus on functioning as effective strategic partners to portfolio companies, providing comprehensive insights through complex financial situations. Their mission encompasses:

- **Return Optimization:** Implementation of strategic measures to ensure investments deliver anticipated capital returns while maintaining effective risk management protocols.
- **Loss Mitigation:** In distress scenarios, the team executes diligent measures to minimize potential losses while ensuring implementation of sustainable financial recovery strategies.

Organizational Structure and Collaboration

The Asset Management team maintains a structured organizational framework to ensure effective portfolio oversight:

- Team Composition:
 - Junior Asset Managers execute initial financial analysis and data standardization to support senior asset managers.
 - Senior Asset Managers provide strategic oversight, guide portfolio direction, and engage in negotiations with counterparties.
 - Systematic collaboration with Operations, Finance, and Deal teams ensures comprehensive portfolio management
- Collaboration Framework

The Asset Management Team acts as a central hub for portfolio oversight and operational efficiency, ensuring seamless coordination with all critical business functions:

- Legal Department: Collaborates on deal amendments, regulatory compliance, and financing document reviews. Provides guidance on risk mitigation strategies, supports collateral enforcement, and coordinates with external deal counsel to execute amendments, forbearance documents, and strategize go-forward plans.
- Deal Team: Engages in the transition from deal closure to portfolio management, ensuring smooth handoffs and alignment on transaction terms. Works together on amendments, extensions, and performance monitoring.
- Investor Relations Team: Supplies data and insights for investor reporting, fund performance updates, and compliance disclosures. Supports IR in crafting portfolio summaries and facilitating investor communication.
- Finance and Fund Accounting Teams: Works closely on fund-level financials, including valuation processes, expense allocations, and performance reporting. Collaborates on cash flow management, investment distributions, and regulatory filings.
- Operations Team: Ensures accurate data ingestion and standardization of investment models. Collaborates on reporting frameworks, delinquency tracking, and reconciliation processes for effective portfolio monitoring.

- External Vendors and Third-Party Service Providers: Manages relationships with fund administrators and external advisors to ensure accurate and timely data delivery. Coordinates reporting for fund operations, valuations, and regulatory compliance.

Tools

Primary Tools

1. Atom Invest

Atom Invest serves as the primary portfolio management platform, facilitating comprehensive tracking, analysis, and reporting of investment performance. The system supports departmental objectives through streamlined portfolio company management, precise financial data maintenance, and standardized performance metric tracking.

Implementation:

- Evolution pillar is fully implemented with up-to-date data
- Other pillars (Real Estate, Whiskey, COCD) are in implementation phase
- Monthly financial statements are being received and processed for Evolution pillar credits
- Approximately 40-50 portfolio companies are being managed through the system

Key Functionality:

- Data Integration: Facilitates systematic data importation from external sources, particularly PIPE, through specialized Excel plugins.
- Portfolio Management: Maintains comprehensive tracking of investment metrics, including balances, coupon payments, profit share arrangements, and loan documentation.
- Performance Analytics: Enables systematic calculation and monitoring of key performance indicators based on incoming financial data streams.

Financial Data Management:

- Standardized mapping of portfolio company financial statements
- One-time mapping process for new companies
- Automated template generation for recurring submissions
- KPI and covenant calculation capabilities
- Excel plugin available for data extraction

Integration Framework:

The integration framework currently relies on manual processes rather than automated data synchronization for valuation management and tracking. While some processes are systematic, there is no

true integration in place for certain key workflows. Here is a breakdown of the current status and future potential:

- **PIPE Integration:** Data importation from PIPE is performed using specialized Excel plugins for comprehensive analysis and tracking capabilities. While systematic, this process still involves manual intervention for accuracy and consistency checks.
- **DealCloud Integration:** The entry of closed deals into Atom Invest is a manual process. This follows standardized deal closure checklist protocols established by the Deal Team. There is currently no automated synchronization between DealCloud and Atom Invest.

Key elements:

- **Standardized Templates:** Templates are in place for financial statement uploads to ensure uniformity and accuracy.
- **Access Control:** System access is controlled for specific team members to maintain data security and integrity.
- **Future Integration Potential:**
 - Pre-integration capabilities exist between DealCloud and Atom Invest, making automation feasible in the future.
 - The possibility of leveraging APIs or direct integrations to streamline workflows is being explored.
 - Allowing valuation firms to access Atom Invest directly for financial statements is a future goal.
- **Standardization Goals:**
 - Standardize charts and graphs across portfolio companies for consistency and better visualization.
 - Integrate discount rates and valuation metrics into Atom Invest for seamless data analysis.

Challenges:

- Inconsistent portfolio company data formats require manual remapping.
- Not all pillars are currently onboard, limiting full portfolio visibility.
- Limited customization options, as the tool is primarily designed as an off-the-shelf system. While users cannot modify some fields, most can be adjusted to capture relevant data.
- The initial financial statement mapping process requires significant manual effort. However, once the system is set up, updating each credit monthly becomes a faster and more efficient exercise.
- Portfolio companies occasionally send data in different formats requiring remapping.

2. PIPE (Portfolio Investment Platform)

The system serves as the central investment general ledger, primarily used to gather balances at a specific point in time, whether principal or accrual. It plays a crucial role in supporting the Asset Management (AM) team, which focuses on the investment pipeline—a comprehensive aggregation of all individual investments, including both debt and equity.

Key components of its functionality include:

- Serving as the foundation for tracking and managing investment activities.
- Providing detailed insights into the financial performance and composition of the portfolio.

Key Functionality:

- Point-in-time balance tracking for principal, accruals, and additional loan data, including marks.
- Investment model integration for projections and tracking
- Automated daily ledger buildup

Data Access and Reporting:

- Excel-based queries available through Microsoft Fabric
- Pre-configured reports for standard metrics
- Real-time data publishing capabilities
- Controlled access for specific team members

Integration Points:

- Investment models serve as source data
- Updates managed through cloud-based system
- CSV exports available for reporting purposes
- Currently feeding data into Atom Invest.

Challenges:

- Inconsistent data definitions between legal and cash management views create confusion and complexities in metrics like commitments.
- Manual additions required for legacy deals are missing from the system, particularly in PIPE.
- Commitment tracking challenges due to multiple interpretations of definitions.
- Delays in data publishing impact downstream reports and decision-making processes.
- Manual balance tracking is needed for some legacy investments.
- Complex scenarios involving participation and co-investment require intricate handling.

Secondary Tools

1. DealCloud

DealCloud functions as an ad-hoc platform for contact and relationship management updates within the Asset Management team.

Usage Patterns:

- Contact and relationship management
- Storage of term sheets and market intelligence
- Ad-hoc document repository

- Integration with broader ecosystem including Deal Team, OE Team, and IR Team

Challenges:

- Process adherence issues with tracking amendments and additional fundings
- System needs cleanup and better structure
- Unclear workflow processes between teams
- Limited adoption by Asset Management team
- Need for better defined responsibilities across teams
- System requires restructuring for optimal use

2. Macabacus (Excel Extension)

An industry-standard tool that streamlines the integration between Excel and PowerPoint. It facilitates the systematic transfer of data through automated snapshotting, enables keyboard shortcuts, and provides various utility functions to enhance efficiency.

Usage Patterns:

- Automated Excel to PowerPoint conversion
- Snapshot capabilities for data transfer
- Link refresh functionality

Primarily utilized by Brandon for creating and formatting PowerPoint slides for the AM Weekly Report.

Challenges:

- Manual resizing required for all transferred content
- Formatting issues when transferring certain types of content
- Cannot properly handle some complex Excel tables
- Some slides require manual picture insertion due to transfer limitations
- Time-consuming formatting adjustments needed post-transfer
- Issues with cutting off content in certain scenarios

3. SharePoint

Functions as the centralized file storage and collaboration platform, focusing on AM Weekly Report maintenance and related documentation management.

Challenges:

- File organization and structure needs improvement
- Current personal folder dependencies need addressing
- Transition required from individual to team-based storage
- Need for better standardization of folder structures
- File access and permission management complexity

- Storage capacity and file size limitations

Processes

Overview

The Asset Management (AM) team is central to managing and optimizing investments from the moment a deal is closed through the lifecycle of the investment until its final exit. The team's structured processes are meticulously designed to safeguard capital, ensure compliance with loan agreements, and provide insightful reporting to key stakeholders. These processes are supported by data systems, collaborative workflows, and continual engagement with borrowers, internal committees, and external partners.

Upon deal closure, the AM team takes ownership of managing the investment. This includes direct collaboration with borrowers to ensure performance aligns with underwriting expectations, active monitoring of loan covenants, and prompt intervention to address any performance degradation. Key financial data—such as balance sheets, income statements, and cash flow statements—is collected and analyzed monthly. Historically maintained in Excel, Metropolitan is transitioning to Atom Invest, a system that streamlines the ingestion and analysis of financial information.

Weekly group meetings, regular one-on-one sessions with senior AM members, and discussions with the Investment Committee (IC) are integral to the team's operations, ensuring alignment on strategic priorities and proactive responses to emerging issues. Regular activities include risk assessments, liquidity monitoring, compliance tracking, and the management of amendments or additional capital funding requests for underlying borrowers.

The AM team also takes a data-driven approach to its responsibilities:

- **Monthly:** The team collects detailed financial and compliance data from portfolio companies to monitor loan performance, ensure covenant adherence, and prepare for valuations.
- **Quarterly:** The team provides inputs for valuations, quarterly memos, and other reports for senior management and Limited Partners (LPs). These memos detail any material changes or significant events, supported by valuations conducted either in-house or by third-party vendors such as Houlihan Lokey and Williams Marston.
- **Ad Hoc:** The team handles urgent requests from Investor Relations, Finance, and IC members, often involving high-priority credits or portfolio analysis.

The AM team also utilizes specialized tools and frameworks:

- **Harvey Balls Reporting:** A standardized risk assessment mechanism where individual asset managers input data to evaluate risk metrics. Key metrics contributing to the Harvey Balls Score calculation will be automatically sourced from Atom Invest starting in Q1 2025.
- **Liquidity Profile Monitoring:** Weekly reviews of upcoming maturities expected paybacks, and funding needs.

- **Amendment and Funding Management:** Addressing amendments and additional capital funding requirements. This activity should ideally be tracked in DealCloud, though inconsistencies in its use have occasionally led to data quality issues.

1. Key Processes

Where Asset Management Team is the Owner

1. Daily Activities

- **High-Priority Credit Monitoring**
 - Description: Proactively monitor high-risk credits, addressing time-sensitive borrower issues such as payment delays, covenant breaches, or amendments that require immediate intervention.
 - Objective: Safeguard investments and mitigate risks through swift action.
 - Tools Used: PIPE, Excel Dashboards, Compliance Alerts.
 - Dependencies: Real-time data from borrowers, PIPE updates, and internal communication channels.
 - Key Stakeholders: Asset Management Team, IC, and Borrowers.
- **Ad Hoc Analysis**
 - Description: Address unscheduled data requests from internal stakeholders, including IC, Investor Relations, and Finance, for borrower-specific or portfolio-wide insights.
 - Objective: Provide timely, actionable decision support.
 - Tools Used: PIPE, Excel, Atom Invest.
 - Dependencies: Access to accurate and up-to-date data repositories.
 - Key Stakeholders: Investor Relations, IC, Finance.
- **Loan Compliance Updates**
 - Description: Review daily compliance metrics, identify deviations, and initiate corrective actions.
 - Objective: Ensure compliance with loan agreements and regulatory requirements.
 - Tools Used: PIPE Dashboards, Compliance Certificates.
 - Dependencies: Borrower submissions, automated alerts from PIPE.
 - Key Stakeholders: Borrowers, Asset Management Team, Legal.

2. Weekly Activities

- **Team and Investment Committee (IC) Meetings**
 - Description: Weekly discussions on portfolio performance, liquidity needs, and high-priority risks, including amendments and strategic adjustments.
 - Objective: Align the team with strategies and decisions, proactively addressing portfolio risks.
 - Tools Used: PIPE, Meeting Minutes Templates.
 - Dependencies: Prepared reports, input from team members, and IC agendas.
 - Key Stakeholders: IC, Asset Management Team.
- **Liquidity Profile Monitoring**
 - Description: Analyze loan maturities, partial paydowns, and funding needs to manage liquidity effectively.

- Objective: Provide a real-time view of cash flows and align liquidity with investment strategies.
- Tools Used: PIPE, Excel Dashboards, Scenario Analysis Templates.
- Dependencies: Data on borrower repayments, scheduled maturities, and PIPE-generated insights.
- Key Stakeholders: Asset Management Team, Finance.

3. Monthly Activities

- **Borrower Data Collection and Validation**
 - Description: Collect financial statements, compliance certificates, and KPIs from borrowers, ensuring data accuracy and alignment with covenant requirements.
 - Objective: Monitor borrower performance and prepare for valuations and risk assessments.
 - Tools Used: Atom Invest, PIPE, Excel.
 - Dependencies: Timely borrower submissions and standard data templates.
 - Key Stakeholders: Borrowers, Asset Management Team.
- **Risk Assessment Using Harvey Balls**
 - Description: Evaluate borrower risks against predefined criteria and assign Harvey Ball scores for inclusion in IC reports. This process is expected to be automated with Atom Invest.
 - Objective: Provide a consistent and visual risk framework for decision-making.
 - Tools Used: Harvey Ball Templates, Excel.
 - Dependencies: Borrower performance data and historical trends.
 - Key Stakeholders: IC, Asset Management Team.
- **Amendment and Funding Management**
 - Description: Assess and process borrower requests for amendments or additional capital funding, ensuring alignment with investment objectives.
 - Objective: Support borrowers while preserving portfolio health.
 - Tools Used: PIPE, Excel, Amendment Logs.
 - Dependencies: Deal Team coordination and borrower communications.
 - Key Stakeholders: Deal Team, Borrowers.

4. Quarterly Activities

- **Valuations**
 - Description: Collaborate with third-party firms (Houlihan Lokey, Williams Marston) and perform internal valuations for select credits to assess portfolio value.
 - Objective: Deliver accurate, market-aligned valuations to Limited Partners (LPs) and IC.
 - Tools Used: PIPE, Valuation Models, Excel.
 - Dependencies: Financial data from borrowers, PIPE integration, third-party input.
 - Key Stakeholders: IC, Valuation Firms, LPs.
- **Quarterly Memos and Blurs**
 - Description: Draft memos summarizing material changes, significant borrower events, and portfolio updates for IC and LP communication.
 - Objective: Maintain transparency and trust among stakeholders.
 - Tools Used: Memo Templates, Portfolio Dashboards.

- Dependencies: Input from Asset Management Team and PIPE data.
- Key Stakeholders: IC, Investor Relations, LPs.
- **Co-Investor Reporting**
 - Description: Prepare detailed reports for co-investors, outlining shared investment performance and material developments.
 - Objective: Foster co-investor relationships through transparent and accurate reporting.
 - Tools Used: PIPE, Excel, Co-Investor Templates.
 - Dependencies: Portfolio data, co-investor agreements.
 - Key Stakeholders: Co-Investors, IC.

Where Asset Management Team is Involved but Not the Owner

1. Daily Activities

- **Loan Agency Operations**
 - Description: Collaborate with the Operations Team to track agency loan activities, including cash movements, borrower communications, and compliance with loan agreements.
 - Owner: Operations Team.
 - Role of Asset Management Team: Provide borrower-specific performance insights and assist with escalated borrower issues.
 - Dependencies: Loan documents, data from PIPE, and borrower inputs.
 - Tools Used: PIPE, Excel, Investment Models.
 - Blockers: Data inaccuracies or delays in borrower submissions.
- **Pipeline Updates**
 - Description: Assist the Deal Team in maintaining accurate deal pipeline records, focusing on borrower-related updates, and ensuring alignment with portfolio goals.
 - Owner: Deal Team.
 - Role of Asset Management Team: Review borrower financials for new opportunities and participate in deal review discussions.
 - Dependencies: DealCloud, borrower submissions.
 - Tools Used: DealCloud, PIPE.
 - Blockers: Inconsistent or incomplete data from DealCloud.

2. Weekly Activities

- **Portfolio Reporting for Investment Committee (IC)**
 - Description: Collaborate with the Finance Team to prepare weekly portfolio performance updates for IC meetings, highlighting key performance metrics and liquidity needs.
 - Owner: Finance Team.
 - Role of Asset Management Team: Contribute borrower-specific insights and ensure accuracy of credit-related data.
 - Dependencies: Financial data from PIPE, Finance Team input.
 - Tools Used: PIPE, Excel, IC Reports.
 - Blockers: Delays in report compilation.

- **Borrower Amendment Discussions**
 - Description: Participate in discussions on borrower amendment requests, focusing on risk assessment and strategic alignment.
 - Owner: Deal Team.
 - Role of Asset Management Team: Evaluate borrower risks and recommend adjustments.
 - Dependencies: Amendment logs, PIPE.
 - Tools Used: PIPE, Excel, Amendment Logs.
 - Blockers: Delays in decision-making or lack of complete borrower data.

3. Monthly Activities

- **Data Reconciliation with Finance Team**
 - Description: Assist the Finance Team in reconciling PIPE and LP360 data for accurate fund and portfolio reporting.
 - Owner: Finance Team.
 - Role of Asset Management Team: Provide borrower data and resolve discrepancies.
 - Dependencies: Updated PIPE and LP360 datasets.
 - Tools Used: PIPE, LP360, Excel.
 - Blockers: Mismatched or outdated data in systems.
- **Investor Reporting Support**
 - Description: Provide data to the Investor Relations Team for the preparation of investor communications, including fund summaries and co-investor updates.
 - Owner: Investor Relations Team.
 - Role of Asset Management Team: Supply borrower updates and material event summaries.
 - Dependencies: PIPE data, investor reporting schedules.
 - Tools Used: PIPE, Excel.
 - Blockers: Limited timeframes for report generation.

4. Quarterly Activities

- **Charge-Off Debt Analysis (COCD)**
 - Description: Collaborate with the COCD Pillar Team and Messina to evaluate charge-off debt performance and its impact on portfolio health.
 - Owner: COCD Pillar Team.
 - Role of Asset Management Team: Validate borrower performance metrics and interpret data for portfolio impact.
 - Dependencies: Messina data, Tableau.
 - Tools Used: Tableau, AWS SQL, PIPE.
 - Blockers: Data lag between Messina and internal systems.
- **Fund Accounting Coordination**
 - Description: Support the Finance and Fund Accounting Teams in reconciling cash flows and preparing fund-level financial reports.
 - Owner: Finance and Fund Accounting Teams.
 - Role of Asset Management Team: Validate borrower repayment details and ensure alignment with fund accounting records.
 - Dependencies: Fund Administrator reports, PIPE, LP360.
 - Tools Used: LP360, PIPE.

- Blockers: Delays in data submissions from fund administrators.
- **Audit and Compliance Support**
 - Description: Work with the Legal and Compliance Teams to review borrower agreements and adherence to covenants during quarterly audits.
 - Owner: Legal and Compliance Teams.
 - Role of Asset Management Team: Provide borrower performance data and compliance status.
 - Dependencies: Compliance dashboards, PIPE.
 - Tools Used: PIPE, Compliance Templates.
 - Blockers: Gaps in borrower compliance reporting.

2. Frameworks and Deliverables

Data-Driven Approach

- Transition from Excel-based processes to automated systems has improved accuracy and efficiency.
- Currently, the team relies on centralized systems like PIPE and Atom Invest to manage investment data, track performance, and streamline reporting.

Structured Deliverables

- Daily: Updates on compliance metrics, high-priority borrower interventions, and ad hoc analyses.
- Weekly: Liquidity reports and IC memos highlighting performance risks and strategic needs.
- Monthly: Borrower performance data and Harvey Ball risk assessments.
- Quarterly: Valuation reports, memos, and co-investor updates.

Collaboration Frameworks

- Engagement with Borrowers: Continual collaboration to ensure covenant compliance and timely resolution of issues.
- IC Engagement: Proactive discussions on borrower performance, portfolio risks, and amendment approvals.
- Vendor Coordination: Alignment with third-party valuation vendors for consistent and accurate portfolio valuations.

Compliance Tracking

- A robust system ensures that covenant breaches are flagged immediately and addressed proactively through IC discussions and borrower engagement.

3. Challenges

- Data Standardization: Borrowers frequently submit non-standardized data, requiring manual intervention.
- Amendment Tracking: Amendments and funding requests are inconsistently recorded, leading to reporting gaps.

- Automation Gaps: Integration and training on existing systems (PIPE, Atom Invest) need improvement to reduce manual workflows further.

Through these structured workflows, the AM team ensures that Metropolitan's investments are effectively monitored, risks are mitigated, and stakeholders are consistently informed with accurate and timely reporting.

Process Workflow Overview

1. Monthly Portfolio Companies' Data Management Process

Overview

A sizable portion of the data used by the Asset Management (AM) team comes directly from portfolio companies. This data is essential for monitoring loan covenants, generating key performance indicators (KPIs), and supporting quarterly valuations and reporting processes. The data typically includes:

- Balance Sheets
- Income Statements
- Cash Flow Statements
- Compliance Certificates
- Covenant Compliance Data
- KPI data from the borrowers

The team maps these financial statements to a standardized reporting structure. This mapping is conducted during the initial data submission, and portfolio companies are encouraged to submit future data in the same format. If KPIs or covenants need to be monitored, the AM team creates calculations based on the received data to consistently track metrics.

Issue Reported:

- Portfolio companies occasionally submit data in non-standardized formats, requiring manual adjustments to fit the standardized structure. This process is time-intensive and introduces inefficiencies in subsequent workflows.

Linked to Reports:

- Quarterly Reports: Prerequisite for valuations, quarterly memos, and co-investor updates.
- Weekly Updates: Data feeds into high-priority risk assessments and liquidity monitoring.

Steps

1. Step 1: Sending Requests and Reminders

At the beginning of each month, Asset Managers initiate data requests:

- **Onboarded Companies:** Automated reminders are sent via Atom Invest, specifying required data, acceptable formats, and submission deadlines.

- **Non-Onboarded Companies:** Manual emails are sent by Asset Managers, detailing the same requirements and deadlines.

This step ensures timely communication of expectations but is occasionally hindered by late responses or non-compliance with standard formats, particularly from non-onboarded companies.

Owner: Asset Managers

Tools Used: Atom Invest (automated reminders), Email (manual requests)

Blockers:

- Late responses from portfolio companies
- Non-standardized responses

2. Step 2: Data Submission by Portfolio Companies

Portfolio companies submit data through two primary channels:

- **Atom Invest:**

- Onboarded companies upload data directly to the platform.
- The system pre-validates submissions for format compliance and structure.
- Data becomes accessible to the AM and Operations teams.

- **Email:**

- Non-onboarded companies send data in various formats (Excel, PDFs, scanned documents).
- Submissions are tracked manually and stored temporarily in SharePoint or Box for validation.

This step is critical for data acquisition but often faces challenges with incomplete submissions or manual tracking inefficiencies for non-onboarded companies.

Owner: Portfolio company finance teams (submissions); Asset Managers (tracking and storage)

Tools Used: Atom Invest, Email, SharePoint, Box

Blockers:

- Delays in submission
- Inconsistent or non-standardized formats

3. Step 3: Data Review and Validation

Once data is submitted, the AM team performs a detailed review:

- **For Atom Invest Submissions:**

- Automated validation ensures consistency, alignment with reporting templates, and completeness.
- Asset Managers perform additional checks for covenant compliance and borrower performance.

- **For Email Submissions:**
 - Data is manually validated using custom Excel templates.
 - Compliance Certificates are compared against covenant terms in PIPE.
 - Financial statements are cross-checked with historical data for discrepancies.

This step ensures data is accurate and suitable for integration, though manual validation can be time-consuming and subject to errors for non-standardized submissions.

Owner: Asset Managers

Tools Used: Atom Invest (automated validation), Excel (manual validation), PIPE (compliance and historical checks)

Blockers:

- Time-intensive manual validation
- Missing or erroneous data

[4. Step 4: Escalation for Missing or Erroneous Data](#)

If submissions are incomplete or incorrect, Asset Managers escalate issues to portfolio companies:

- Follow-ups are conducted via email, requesting clarifications or resubmissions.
- Persistent delays are escalated internally for prioritization and resolution.

This step is essential for ensuring data completeness and minimizing disruptions to downstream processes.

Owner: Asset Managers

Tools Used: Email (follow-ups and escalations)

Blockers:

- Delayed responses from portfolio companies
- Prolonged resolution timelines

[5. Step 5: Passing Validated Data to Operations](#)

Validated data is prepared and transferred to the Operations Team for ingestion into PIPE:

- **For Atom Invest Submissions:**
 - Operations Team accesses and ingests the data directly, requiring no additional action from the AM team.
- **For Manual Submissions:**
 - AM team compiles the data into standardized Excel summaries aligned with Atom Invest templates.
 - Summaries are shared via shared drives or email for processing.

This ensures all validated data is integrated into the reporting pipeline, enabling compliance tracking and performance monitoring.

Owner: Asset Managers (data preparation); Operations Team (data ingestion)

Tools Used: Atom Invest, Shared Drives, Email, Excel

Blockers:

- Errors in manual summaries
- Coordination delays between AM and Operations

Automation and Dependencies

This process is partially automated:

- Atom Invest: Automates submissions, pre-validation, and data access for onboarded companies.
- Manual Processes: Non-onboarded submissions require manual intervention for tracking, validation, and formatting.

Dependencies:

- Timely and accurate submissions from portfolio companies.
- Access to Atom Invest and SharePoint for data tracking and validation.
- Coordination between Asset Management and Operations teams.

Input: Financial statements, compliance certificates, covenant data.

Output: Validated data integrated into PIPE for downstream reporting.

Stakeholders

- Primary Owners:
 - Asset Managers: Responsible for requests, validation, and escalations.
- Contributors:
 - Portfolio Companies: Submit financial and compliance data.
 - Operations Team: Access and process validated data in PIPE.

6. Valuations Process

Overview

The Valuation Process is a critical quarterly activity within the Asset Management (AM) team's responsibilities, ensuring accurate and consistent determination of the fair market value of all assets in Metropolitan's portfolio. This process serves to provide transparency to stakeholders, support regulatory compliance, and inform strategic decisions by senior management, Limited Partners (LPs), and co-investors.

Valuations are conducted with external valuation vendors (Houlihan Lokey and Williams Marston), internal teams, and the Valuation Committee. Some valuations are handled internally for specific assets where external assessments are not required, often for legacy investments, small positions, or lingering equity positions where debts are already paid off. This quarter (Q4 2024) marks the first involvement of the Operations team, who manage the Valuation Meeting Template and update data.

Exceptions include credits internally evaluated by the Asset Management team using an Excel template from third-party vendors. These typically involve legacy investments or small positions.

The process begins with a kickoff email outlining the quarterly timeline. Asset Managers then scope which deals go to specific service providers, followed by Phase 1 and Phase 2 call setups. Drafts are reviewed iteratively, with feedback loops involving vendors and internal teams. The process culminates in Valuation Committee meetings and final report preparation, with ad-hoc sessions for significant valuation movements.

Throughout the quarter, Operations ensure data consistency and updates in PIPE. By adhering to this structured approach, Metropolitan achieves reliable valuations while addressing evolving challenges in the process.

Linked to Reports:

- Quarterly Valuation Reports: Detailed analysis of asset valuations.
- Quarterly Memos: Summarized insights for the Investment Committee and LPs.
- Co-Investor Reports: Updates aligned with ownership stakes.
- Investor Relations Reports: Leveraging valuation data for quarterly letters and investor communications.

The Valuation Process consists of several interconnected steps to ensure accurate and reliable results. These activities involve multiple stakeholders and tools to coordinate efficiently.

Steps

1. Step 1: Data Preparation

The first step in the valuation process involves compiling and preparing all necessary data. The team collects financial statements, compliance reports, and performance metrics from portfolio companies. This data is validated for accuracy and completeness to ensure a robust foundation for valuations. Historical performance metrics and compliance data are retrieved from PIPE, while material events, such as covenant breaches or payment delays, are identified for further analysis.

- Financial Statements from portfolio companies (Balance Sheets, Income Statements, and Cash Flow Statements).
- Compliance data (e.g., covenant compliance reports).
- Historical performance metrics retrieved from PIPE.
- Identification of material events (e.g., covenant breaches, performance deviations, or payment delays) that may affect asset valuations.

The prepared data is validated for accuracy and completeness to ensure a robust foundation for the valuation process.

Tools Used:

- PIPE: For data retrieval, compliance metrics, and performance tracking.
- Excel: For manual cross-checks and data compilation.

Owner: Asset Managers.

Blockers:

- Late or incomplete submissions from portfolio companies.

- Errors or inconsistencies discovered during validation.
- Transactions at the end of the reporting period, thus requiring additional review time.

2. Step 2: Scoping and Engagement with Third-Party Valuation Vendors

The team conducts a scoping exercise to determine which third-party vendors (Houlihan Lokey or Williams Marston) are suitable for each credit. They categorize credits into Phase 1 or Phase 2:

- **Phase 1:** Credits with no expected activity (e.g., amendments or payments) before the valuation date. All relevant data is sent to vendors early in the process.
- **Phase 2:** Credits with anticipated activity are evaluated closer to the valuation period to account for potential changes.

The team collaborates with third-party valuation vendors, such as Houlihan Lokey and Williams Marston, to conduct external valuations. After scoping, it is securely transferred to third-party vendors like Houlihan Lokey and Williams Marston. These vendors analyze the data, incorporating market inputs such as interest rates, comparable transactions, and economic conditions. They then produce draft valuation reports for review by the AM team and the Valuation Committee:

- **Data Transfer:**
 - Validated data is shared with vendors via secure channels (e.g., shared drives or encrypted emails).
- **Valuation Analysis:**
 - Vendors assess the data and incorporate market inputs, such as interest rates, comparable transactions, and economic conditions.
- **Draft Valuations:**
 - Vendors provide preliminary valuation reports for review by the Asset Management team and Valuation Committee.

Coordination is crucial at this stage to address vendor requests for additional data and manage response delays. Shared drives or encrypted email channels are used for secure data transfer, with Asset Managers acting as primary liaisons to ensure smooth communication.

Tools Used:

- Shared Drives or Email for data transfer.

Owner: Asset Managers oversee the process and act as the primary liaison with vendors.

Blockers:

- Delays in vendor response times.
- Requests for additional or clarified data.

3. Step 3: Internal Valuation for Select Assets

For certain credits or investments not assigned to third-party vendors, internal valuations are performed by the AM team. This involves analyzing financial performance trends and applying relevant benchmarks to estimate fair values. Results are validated for consistency with vendor-provided valuations when applicable.

- Financial performance is analyzed using historical trends and market data.
- Benchmarks are applied to derive fair value estimates.
- Results are reviewed for consistency with vendor-provided valuations (where applicable).

Tools Used:

- PIPE: For financial and historical data.
- Excel: For modeling and analysis.

Owner: Senior Asset Managers.

Blockers:

- Insufficient market benchmarks for unique or niche assets.
- Complexity in valuation methodologies.

[4. Step 4: Review and Validation by Valuation Committee](#)

Draft valuations, whether vendor-provided or internally generated, undergo review by the Valuation Committee. The committee validates key assumptions, methodologies, and market comparable, providing feedback to the team and vendors to address discrepancies. Once all concerns are resolved, the valuations are approved for final reporting:

- Validation: The committee reviews key assumptions, methodologies, and market comparable used in the valuations.
- Feedback: Discrepancies or areas requiring further analysis are communicated back to the AM team and vendors.
- Approval: Once satisfied, the committee approves the valuations for final reporting.

Tools Used:

- Meeting platforms (e.g., Teams) for discussions.
- Email for exchanging drafts and feedback.

Owner: Valuation Committee, with support from Asset Managers.

Blockers:

- Discrepancies between internal and vendor-provided valuations.
- Lengthy review cycles impacting reporting deadlines.

[5. Step 5: Finalization and Reporting](#)

Once approved, valuations are consolidated and integrated into quarterly reports. These include detailed reports:

- Quarterly Valuation Reports: Detailed analysis of asset valuations and commentary on significant portfolio changes, presented in PowerPoint format.
- Quarterly Memos: Summarized insights for the Investment Committee and Limited Partners.
- Co-Investor Reports: Updates for co-investors aligned with their ownership stakes.

The finalized reports are distributed to relevant stakeholders via secure platforms, ensuring accuracy and transparency.

Tools Used:

- PIPE: For report integration and data aggregation.

- Excel and PowerPoint: For memo preparation and presentations.

Owner: Asset Managers finalize reports; Operations Team ensures proper integration into PIPE.

Blockers:

- Delays in obtaining final approval from the Valuation Committee.
- Errors during report compilation and presentation.

[Automation and Dependencies](#)

Efforts to optimize the valuation process include integrating metrics and templates into Atom Invest, standardizing reporting formats, and exploring automation opportunities. These initiatives aim to reduce the current six-week duration, which bottlenecks other processes like Investor Relations reporting.

Automation:

- Partially Automated:
 - Atom Invest and PIPE streamline data validation and reporting inputs.
 - Vendor interactions and internal valuation steps require manual coordination.

Dependencies:

- Accurate and timely submissions from portfolio companies.
- Effective coordination with valuation vendors and the Valuation Committee.
- Reliable access to market benchmarks and historical performance data.

[Stakeholders](#)

- Primary Owners:
 - Asset Managers: Oversee data preparation, vendor coordination, and reporting.
- Contributors:
 - Valuation Committee: Reviews and approves valuations.
 - Vendors: Conduct third-party valuations and provide draft reports.
 - Operations Team: Integrates finalized valuations into PIPE and downstream reporting.

[6. Risk Assessment Using Harvey Balls](#)

[Overview](#)

The Risk Assessment Using Harvey Balls is a standardized method used by the Asset Management (AM) team to evaluate and communicate risk levels associated with portfolio companies. The process integrates data from financial statements, covenant compliance reports, and operational updates to derive a visual representation of risk. These assessments feed into weekly IC discussions and quarterly reporting, allowing stakeholders to identify high-risk assets and prioritize mitigation strategies.

Steps

1. Step 1: Data Compilation

The AM team gathers data necessary for risk scoring, including:

- **Financial Statements:** Income Statements, Balance Sheets, Cash Flow Statements.
- **Covenant Compliance Data:** Reports on borrower adherence to loan agreements.
- **Operational Updates:** Material events or disruptions affecting the portfolio, such as management changes or regulatory impacts.

The data is collected from monthly portfolio submissions via Atom Invest (for onboarded companies) or email (for non-onboarded entities). PIPE is used to retrieve historical compliance metrics and performance data for validation.

Owner: Asset Managers.

Tools Used: PIPE, Atom Invest, Excel tracking files maintained by each Asset Manager.

Blockers:

- Delayed or incomplete data submissions.
- Data inconsistencies requiring clarification.

2. Step 2: Individual Risk Scoring

Asset Managers evaluate the compiled data to assign Harvey Ball scores for each portfolio company. Scores are based on key factors:

- **Financial Performance:** Stability of cash flows, liquidity, and profitability.
- **Covenant Compliance:** Degree of adherence to loan terms.
- **Operational Risks:** Impact of material events or changes in borrower operations.

Each manager inputs scores into an internal risk assessment template. Scoring reflects their interpretation of the data and aligns with pre-defined risk criteria, ensuring consistency.

Owner: Asset Managers.

Tools Used: Excel templates.

Blockers:

- Subjectivity in scoring methodologies among team members.
- Challenges in aligning scores across similar assets.

3. Step 3: Consolidation and Review

The AM team consolidates all individual scores into a master document:

- **Consistency Check:** Scores are reviewed for uniformity across similar assets.
- **High-Risk Flags:** Investments with significant risks are flagged for immediate IC attention.

- **Validation:** Senior Asset Managers validate consolidated scores to ensure alignment with portfolio objectives.

Owner: Senior Asset Managers.

Tools Used: Excel (master scoring document).

Blockers:

- Time-intensive consolidation and review processes.
- Misalignment in scoring requiring resolution.

[4. Step 4: Integration into IC Reports](#)

Finalized Harvey Ball scores are incorporated into:

- **Weekly IC Updates:** Highlight high-risk assets requiring urgent focus.
- **Quarterly Reports:** Provide an aggregated view of risk across the portfolio.

Reports include visual Harvey Ball summaries, supported by commentary on high-priority risks and recommendations.

Owner: Asset Managers (report preparation); Operations Team (data integration).

Tools Used: PIPE, PowerPoint, Excel.

Blockers:

- Formatting errors during report creation.
- Delays in data integration impacting reporting timelines.

Challenges

- **Manual Scoring:** Scoring relies heavily on manual input, introducing potential inconsistencies.
- **Data Dependencies:** Timely and accurate data from portfolio companies is critical for reliable assessments.
- **Subjectivity:** Scoring can vary due to differing interpretations of risk among team members.

Stakeholders

- Primary Owners:
 - Asset Managers: Responsible for data collection, scoring, and integration into reports.
- Contributors:
 - Senior Asset Managers: Validate and oversee scoring consistency.
 - Investment Committee: Utilizes Harvey Ball assessments for risk evaluation and decision-making.

Reports

Overview

The Asset Management Team is responsible for generating, validating, and distributing reports that offer stakeholders clear insights into portfolio performance, compliance metrics, and strategic priorities. These reports are tailored to meet the needs of internal teams, senior management, Limited Partners (LPs), and external stakeholders. They are categorized based on their frequency and purpose, including Quarterly Reports, Weekly Reports, and Ad-Hoc Reports. Each report follows a structured process that leverages both internal and external data sources to ensure accuracy, consistency, timeliness, and alignment with stakeholder needs.

1. Quarterly Reports (Valuations, Memos, Co-Investor Reporting, etc.)

- **General Description**
 - Quarterly Reports are comprehensive documents detailing the performance, valuations, and material changes within Metropolitan's investment portfolio. These reports are essential for senior management, LPs, and internal teams to assess financial health and investment performance.
 - Purpose: Provide an updated, accurate view of the portfolio's financial status and any momentous events affecting investments.
 - Stakeholders: Senior Management, Limited Partners, Finance Team, Operations Team, and the Investment Committee.
 - Frequency: Prepared every quarter, with additional updates for material events or changes in investments.
- **Workflow**
 - Raw Data Preparation
 - Data Sources:
 - PIPE: Core investment data provided by the Operations Team, including loan balances, equity shares, and borrower updates.
 - Third-Party Valuation Firms: Inputs from firms like Houlihan Lokey and Williams Marston for external assessments.
 - Internal Valuations: Conducted by the Asset Management Team to select credits where external valuations are not used.
 - Dependencies: Timely submission of data from PIPE and valuation firms, borrower performance metrics, and updates on compliance.
 - Data Transformation
 - Process:
 - Standardize data from PIPE, third-party valuation reports, and internal analyses into a consistent format.
 - Integrate Quarterly Memos/Blurbs summarizing significant borrower events or material price movements.
 - Align key metrics such as fair market values, loan balances, and returns across all sources.
 - Validation
 - Steps:
 - Cross-check valuations with PIPE and third-party reports.

- Verify alignment of returns, loan values, and fair market values across all sources.
 - Responsibility: A collaborative effort between the Asset Management Team and Finance Team.
- Distribution
 - Finalized reports are reviewed internally before sharing with senior management and Limited Partners.
 - Reports are uploaded to SharePoint for secure access and archival purposes.

2. Weekly Reports

- General Description
 - Weekly Reports provide a snapshot of the portfolio's performance, focusing on high-priority credits, compliance metrics, and other ongoing developments. These reports are critical for maintaining visibility into portfolio health and addressing emerging issues.
 - Purpose: Ensure stakeholders have up-to-date insights into portfolio status and immediate priorities.
 - Stakeholders: Investment Committee, Deal Team, Senior Management, and the CEO.
 - Frequency: Weekly, as the most frequently updated report.
- Workflow
 - Raw Data Preparation
 - Data Sources:
 - PIPE: Loan balances, commitments, equity shares, and compliance data.
 - Deal Team and Finance Team updates: Includes new amendments, defaults, and non-compliance cases.
 - Dependencies: Timely updates from PIPE and input from Deal and Finance Teams.
 - Data Transformation
 - Process:
 - Standardize and clean raw data to ensure consistency and accuracy.
 - Update sections such as Portfolio Summary and High-Priority Credit List based on the latest developments.
 - Validation
 - Steps:
 - Cross-reference data with PIPE, financial statements, and borrower updates.
 - Ensure all metrics reflect the current status of the portfolio.
 - Distribution
 - Reports are emailed to the Investment Committee, Deal Team, and Senior Management.
 - Stored on SharePoint for easy internal access.

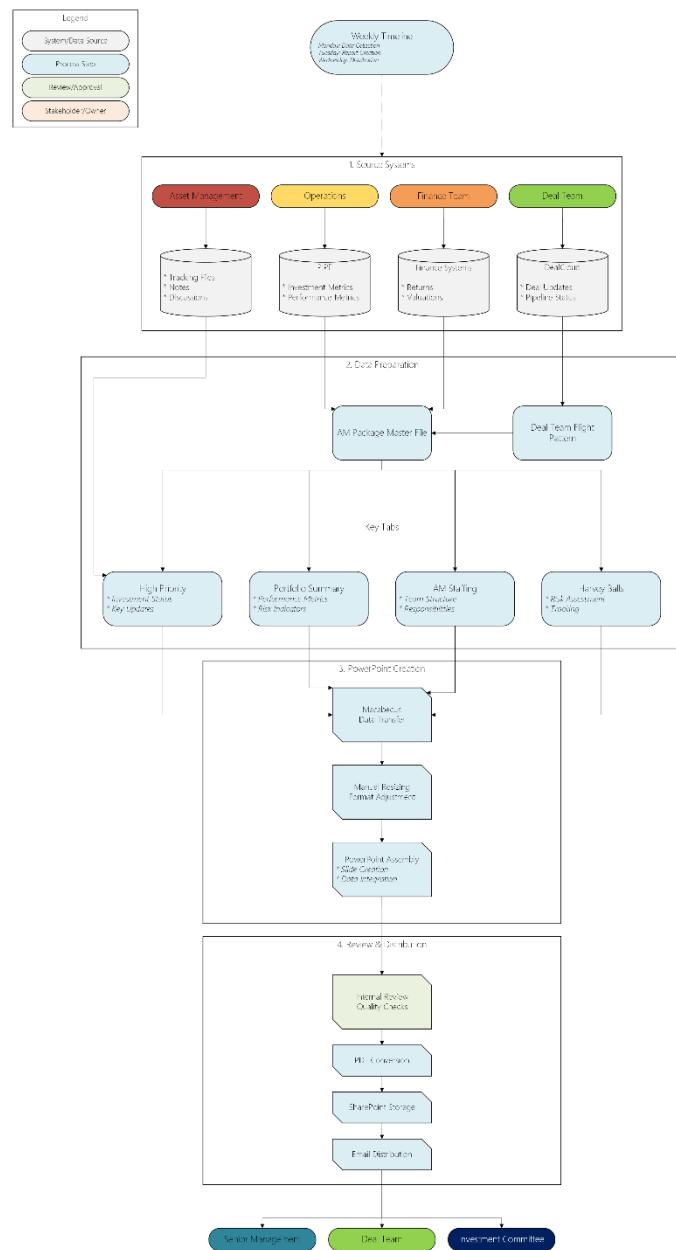
3. Ad-Hoc Reports

- General Description
 - Ad-Hoc Reports are created in response to specific, urgent requests from stakeholders. These reports typically address high-priority credits, unexpected events, or detailed analyses required by Investor Relations, Finance, or Operations.

- Purpose: Provide tailored insights and solutions to address stakeholder inquiries or respond to urgent developments.
- Stakeholders: Investor Relations, Finance Team, Operations Team, and Senior Leadership.
- Frequency: As required (ad-hoc).
- **Workflow**
 - Data Input Gathering
 - Data Sources:
 - PIPE: Core portfolio data.
 - Borrower performance updates and relevant financial metrics.
 - Scope: Defined by the specific stakeholder request, which could include credit summaries, performance analyses, or detailed financial breakdowns.
 - Data Transformation
 - Process:
 - Tailor the data to meet the specific requirements of the request.
 - Ensure clarity and include visualizations or summaries where applicable.
 - Validation
 - Steps:
 - Cross-check data with PIPE and financial reports for accuracy.
 - Verify alignment with portfolio-wide metrics.
 - Distribution
 - Reports are formatted based on stakeholder preferences (Excel, PDF, PowerPoint).
 - Delivered via email or uploaded to SharePoint for internal reference. ☎

Report Workflow Overview

1. AM Weekly Report Creation Process



1. Use Case:

The Asset Management (AM) Weekly Report is a critical document generated every week to provide stakeholders with a comprehensive update on the status of Metropolitan's investments. It includes:

- Current performance of investments.
- Any new proposals or amendments to existing loans.

Stakeholders:

- Deal Team.
- Chief Investment Officer (CIO).
- Investment Committee (IC) Members.

2. File Storage:

The definitive version of the AM Weekly Report is stored in a dedicated personal SharePoint folder, ensuring accessibility for updates and distribution.

3. Data Sources:

The report integrates data from multiple teams and systems to ensure a comprehensive view. Key sources include:

- PIPE: Provides core investment data, updated by the Operations Team.
- Deal Team: Supplies updates regarding new proposals, amendments, and any key developments.
- Finance Team: Contributes data such as loan balances, returns, and fair market values.
- Asset Management Team: Shares Factsheets and valuation data for inclusion in the report.
- Harvey Balls Reports: Used for risk assessments and evaluation of investment performance.

4. Key Performance Indicators (KPIs):

The AM Weekly Report tracks the following KPIs:

- Loan balances and commitments.
- Investment performance metrics.
- Risk metrics (via Harvey Balls).
- Portfolio health indicators.

5. PowerPoint Creation:

The AM Weekly Report is presented in PowerPoint format, updated weekly using the AM Package Master File. The process includes Brandon using the Macabacus extension to manually "snapshot" relevant tabs from the AM Package Master File. The exact clicks and steps taken to create the document are already documented. Tabs include:

6. Preparing the AM Package Master File

Brandon begins the process by updating the relevant tabs in the AM Package Master File, ensuring all data is current and accurate. Key updates include:

1. High Priority Tab:

- Updates investment names, loan balances (commitments), defaults/non-compliance flags, responsible Asset Manager, and any notable developments or reasons for discussion.
 - Ensures that each Asset Manager has contributed commentary for their assigned investments.
2. Portfolio Summary Tab:
 - Combines valuation data and metrics from the Harvey Balls Summary Tab.
 - Manually input specific fields like Equity/Warrants where required.
 3. AM Staffing Tab:
 - Manually updates the team structure, highlighting each Asset Manager's responsibilities.
 4. Exhibit A Tab:
 - Adds updated Factsheets for review, assigning page numbers and verifying accuracy.
 5. HB Over Time Tab:
 - Updates historical data on investment performance, ensuring exited deals are noted and column names are revised where necessary.
 6. Valuations Tab:
 - Cross-checks and integrates data from the most recent quarterly valuation file.

7. Generating the PowerPoint

1. Snapshotting Excel Tabs

- Brandon uses the Macabecus extension to manually "snapshot" relevant tabs from the AM Package Master File. Tabs include:
 - High Priority.
 - Portfolio Summary.
 - AM Staffing.
 - Harvey Balls Summary.
- These snapshots are resized manually to ensure proper formatting within the PowerPoint slides.

2. Adding Data to PowerPoint

- Tabs from the AM Package Master File are incorporated into the PowerPoint template as follows:
 - High Priority Tab: Included as the "Asset Management Updates" slide, listing key investment details such as loan balances, responsible Asset Manager, defaults, and notable developments.
 - Portfolio Summary Tab: Added under "Portfolio Summary," providing an overview of portfolio health and metrics.
 - AM Staffing Tab: Presented as "Portfolio Categorization & AM Staffing," detailing team roles and responsibilities.
 - Harvey Balls Summary Tab: Incorporated into slides focused on risk assessments and investment performance.

3. Formatting

- Brandon ensures all slides are aligned and visually consistent, resizing snapshots or adjusting layouts, as necessary.

4. Finalizing the PowerPoint

- Converts the PowerPoint into PDF format for distribution.
- Saves the final document to the shared SharePoint folder for secure access by stakeholders.

8. Review and Distribution

- Internal Review:
 - PowerPoint is reviewed internally to confirm data accuracy and formatting before finalization.
- Stakeholder Distribution:
 - The finalized report is shared with the Deal Team, CEO, and Investment Committee Members via email.
 - Stored on the shared SharePoint folder for record-keeping and future reference.

9. Detailed Overview of Tabs in Tabs in 'AM Package Master File'

1. High Priority Tab

- Purpose: Serves as the agenda for weekly Asset Management meetings.
- Key Columns:
 - Investment Names: The name of each investment being discussed.
 - Loan Balance (Commitment): Current loan balance or committed amount for each investment.
 - Responsible Asset Manager: The Asset Manager assigned to oversee the specific investment.
 - Funds: Details about the fund associated with each investment.
 - Defaults/Non-Compliance Flags: Flags to highlight any default events or compliance breaches.
 - Developments and Reason for Discussion: Includes updates on key developments or specific reasons the investment requires discussion during the meeting.
- Update Process:
 - Each Asset Manager is responsible for updating their respective sections with relevant commentary and updates for the week.

2. AM Staffing Tab

- Purpose: Provides a clear view of the team structure and outlines the responsibilities of each Asset Manager.
- Update Process:
 - This tab is updated manually to reflect any changes in team structure or assignments.

3. New Factsheet Calendar Tab

- Purpose: Tracks the scheduling and creation of Factsheets.
- Update Process:
 - The team updates this tab manually to ensure the timely preparation of Factsheets and adherence to the reporting schedule.

4. Portfolio Summary Tab

- Purpose: Consolidates critical data about the portfolio, providing a comprehensive summary for weekly reporting.
- Data Inputs:
 - Manually Entered Fields: Includes specific fields like Equity/Warrants.
 - Automated Inputs: Pulls data from the Valuations Tab and Harvey Balls Summary Tab for metrics like investment performance and risk assessment.

5. HB AM Pack Tab

- Purpose: Focuses on risk assessment for each portfolio investment, drawing from the Harvey Balls Summary Tab.
- Special Considerations:
 - For exited deals, column names are updated manually to reflect the investment's completion status.

6. Exhibit A to C Tab

- Purpose: Maintains a record of Factsheets and their corresponding page numbers within the report appendices.
- Update Process:
 - When new Factsheets are added, the page numbers are updated manually to ensure accurate indexing.

7. HB Over Time Tab

- Purpose: Tracks the historical performance of investments over time, allowing for trend analysis.
- Update Process:
 - Exited deals are updated manually, with adjustments made to ensure accurate tracking of historical data.

10. External Team Contributions:

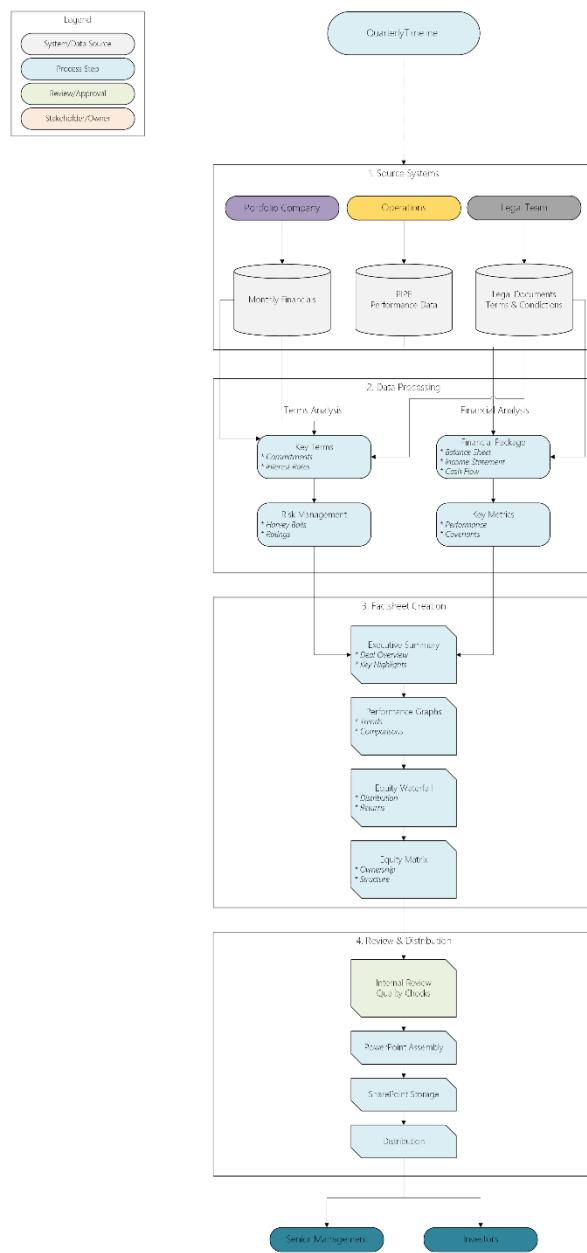
- Deal Team Flight Tracker: Maintained by the Deal Team, this tab is manually updated with pertinent information on new deals.
- Third-Party Tracker: Updated by Sean from the Operations Team, this tab captures information about external events impacting investments.

- Cash Forecast: Maintained by Casey from the Finance Team, this tab provides detailed cash flow projections.

11. Admin Weekly Inputs:

- HB Summary Tab: Managed by the Asset Management Team, this tab consolidates data from the Harvey Balls report, including detailed risk level assessments for each portfolio investment.
- Cumulative Updates Tab: Maintains a historical record of High Priority updates from previous weeks, ensuring continuity and reference for ongoing discussions.
- Valuations Tab: Contains valuation data sourced from the most recent quarterly valuation file, providing key metrics for portfolio analysis.
- Portfolio Summary (Pasted): Data in this tab is refreshed regularly from PIPE, with any missing legacy deals manually reviewed and added by Brandon to ensure completeness.

1. Fact Sheets Creation Process



1. Use Case:

The Fact Sheets are a critical quarterly deliverable, providing an in-depth analysis of each portfolio company's performance. These Fact Sheets are utilized to:

- Document key metrics.
- Track investment performance over time.
- Assess and evaluate risks.

Stakeholders:

- Asset Managers.
- Senior Management.
- Investors.

Frequency: Quarterly.

2. File Storage

The final Fact Sheets are compiled in PowerPoint format and stored in a designated SharePoint folder, ensuring accessibility for internal stakeholders and for distribution to Senior Management and Investors.

3. Data Sources:

The Fact Sheets integrate data from multiple sources to provide a comprehensive performance analysis. Key data sources include:

- Portfolio Companies: Monthly financial data provided via email, including:
 - Income Statements.
 - Balance Sheets.
 - Cash Flow Statements.
 - Accounts Payable Aging Reports.
 - Compliance Certificates.
- PIPE: Used to extract data for performance tracking.
- Legal Documents: Manually extracted data on key terms such as interest rates.

4. Key Metrics and Manual Data Entry:

Fact Sheets involve significant manual data entry and analysis to capture key metrics, including:

- Financial Package:
 - Income Statements.
 - Balance Sheets.
 - Cash Flow Statements.
 - Accounts Payable Aging Reports.
 - Compliance Certificates.
- Key Terms:

- Commitment.
- Current Balance.
- Interest Rate (from legal documents).
- Valuation (from quarterly valuation reports).
- Risk Assessment Scores (from Harvey Balls reports).

5. Fact Sheet Structure:

1. Standard Landing Page:

- Executive Summary: Includes key deal information such as deal name, closing date, asset manager, and major terms.
- Key Terms: Covers:
 - Commitment.
 - Current Balance.
 - Interest Rate.
 - Valuation.
 - Harvey Balls (risk levels).
 - Internal Rate of Return (IRR).
 - Multiple on Investment Capital (MOIC)

2. Graphs Tab:

Graphical representation of key metrics, including Revenue, EBITDA, and Covenant performance trends over time.

3. Equity Water Tab:

Tracks EBITDA distribution through an equity waterfall framework.

4. Equity Matrix Tab:

Tracks equity distribution, investment performance, and other critical financial metrics.

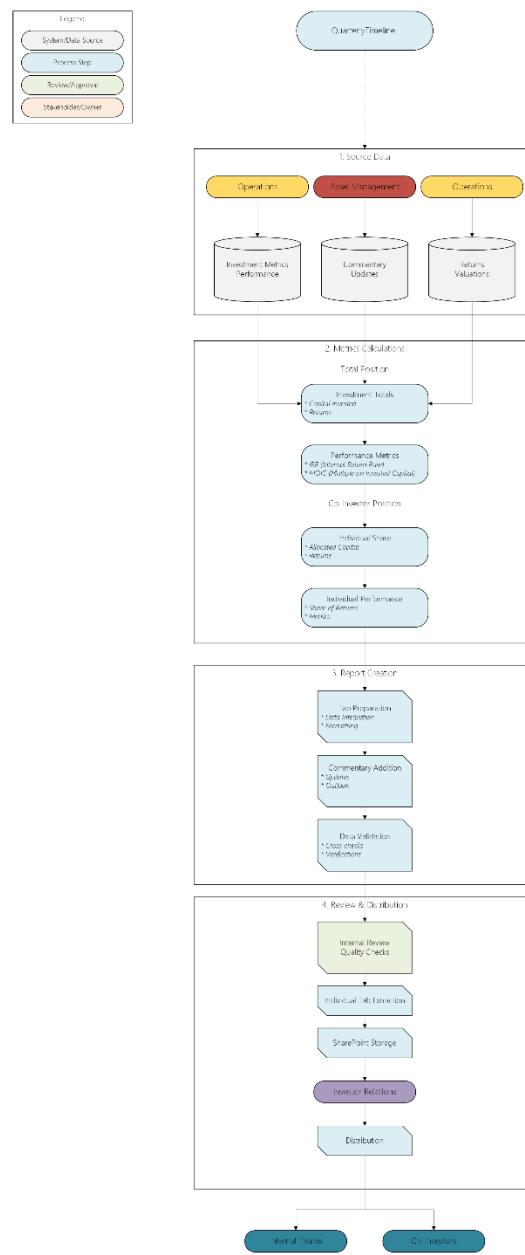
6. Goal for Automation:

- Objective: Transition of some Fact Sheet data to Atom Invest to automate the tracking of KPIs and streamline monitoring processes.
- Significance: Fact Sheets are among the most labor-intensive deliverables. While automation is expected to significantly enhance efficiency and accuracy, certain situation-specific elements will still require manual creation.

7. Distribution:

- Fact Sheets are compiled into an appendix containing all the latest fact sheets and updated quarterly in PowerPoint presentations.
- Recipients: Senior Management; Investors available upon request (not included in standard distribution).
- Purpose: Provide stakeholders with the latest financial and performance data for each portfolio company.

2. Co-Investor Report



1. Use Case

The Co-Investor Report is a critical quarterly document that underscores Metropolitan's dedication to transparency and precision in managing co-investor relationships. It provides each co-investor with a customized analysis of their individual investment position.

- Structure: Each co-investor has a dedicated tab in the report. For example, if Metropolitan is partnered with four co-investors in a deal, the file will include four separate tabs—one for each co-investor.
- Frequency: Quarterly.
- Stakeholders: The final report is distributed to each co-investor.

2. File Storage

- The complete report, containing all co-investor tabs, is stored in a centralized SharePoint folder for internal reference.
- Once finalized, individual tabs are extracted and shared with the respective co-investors.

3. Data Source

The Co-Investor Report integrates data from multiple teams and systems to ensure accuracy and comprehensiveness:

- Operations Team Contributions: Operations populates KPIs for both Metropolitan's total position and each co-investor's position, including:
 - Total \$ Invested: The total capital invested in the deal.
 - Principal Repaid: Amount repaid toward the principal.
 - Interest & Other Paid: Interest payments and other relevant distributions.
 - Total Unrealized Value: The unrealized value of the investment.
 - Additional metrics provided by Operations:
 - Valuation.
 - Gross Multiple on Invested Capital (MOIC).
 - Gross Internal Rate of Return (IRR).
 - Fair Value Price (Fair Value/Par).
- Asset Management Team Contributions: The Asset Management Team provides additional key metrics, including but not limited to:
 - Loan Compliance: Status of the loan's adherence to agreed terms.
 - Loan Compliance Details: Detailed notes on any compliance breaches or issues.
 - Anticipated Future Draws: Projected future capital draws for the investment.
 - Anticipated Liquidity Events: Upcoming events expected to generate liquidity for the investment.
 - Areas of Focus: Highlights specific areas requiring attention or monitoring.

4. Key Metrics and Updates

- **Operational Metrics:** Metrics such as Valuation, MOIC, and IRR are derived from PIPE and manually updated by Operations.

- **Loan Terms:** Key fields like Commitment and Interest Rate are monitored by the Asset Management Team but rarely updated, as these terms typically remain consistent after deal closure.
- **Tracking Data:** For metrics such as Loan-to-Value (LTV), the Asset Management Team references data from internal tracking files prepared for Fact Sheets.

5. Report Preparation

1. Compiling the Data:

- Operations Team populates metrics for both Metropolitan's total position and each co-investor's share of the investment.
- Asset Management Team adds commentary and fills out additional fields based on ongoing portfolio monitoring and tracking data.

2. Tab Customization:

- Each co-investor's tab is tailored to reflect their specific metrics, ensuring all relevant details are accurately populated.
- Tabs are reviewed individually to maintain consistency and completeness.

3. Extraction and Distribution:

- Once all tabs are finalized, each co-investor's tab is extracted from the main file.
- Extracted tabs are shared directly with the respective co-investors.

4. Review and Distribution

- Internal Review:
 - The complete file undergoes an internal review process, where both Operations and Asset Management Teams validate the accuracy of the data and metrics.
- Co-Investor Distribution:
 - Each extracted tab is sent to the respective co-investor via email, accompanied by any required supporting documentation by Investor Relations.

6. Challenges and Goals for Optimization

- Manual Updates: The report preparation process involves significant manual updates, particularly in tailoring individual tabs for each co-investor.
- Data Accuracy: Ensuring consistency between operational metrics and Asset Management commentary requires meticulous cross-checking.
- Automation Opportunities: Long-term plans include integrating this report into Atom Invest or similar tools to streamline data inputs and minimize manual intervention.

Pain Points and Challenges

The Asset Management Team at Metropolitan plays a critical role in managing investments, ensuring compliance, and delivering accurate and timely reports to stakeholders. Despite the team's structured workflows and reliance on robust tools like Atom Invest, PIPE, and DealCloud, several challenges persist across data management, reporting, and coordination processes. These challenges stem from dependencies on manual workflows, inconsistent data submissions, and limitations in existing systems.

This section outlines the key pain points and challenges faced by the Asset Management Team, categorized by process areas.

1. Data Submission Inconsistencies

Financial data provided by portfolio companies is often in non-standardized formats, requiring substantial manual mapping to align with internal reporting structures. Scoping exercises for phase one and phase two credits revealed inconsistencies in submitted data, such as varying formats for financial statements, which delayed the valuation process. During discussions on quarterly reporting, it was highlighted that some credit evaluation data required reformatting due to submission mismatches.

2. Manual Reporting Workflows

The preparation of AM Weekly Reports and Fact Sheets involves manual transformation and formatting, despite using tools like Macabacus for data transfer. Teams shared that Macabacus helps transfer data from Excel to PowerPoint, but resizing and formatting during presentation preparation remains manual. Income reports from PIPE and valuation files were manually combined to generate quarterly summaries.

3. Dependency on Team Coordination

Dependencies on other teams for data updates create bottlenecks and inconsistencies, particularly when updates between systems like DealCloud and PIPE are misaligned. Team reported that two systems might contain different results for the same field leading to discrepancies (e.g., Deal Team/Asset Management owner was updated, sector or pillar might also change over time).

4. Amendment and Funding Tracking Gaps

Amendments and additional funding requests are not consistently tracked in DealCloud, leading to incomplete records and monitoring challenges. Amendment logs manual file was introduced by Operation team recently. This was discussed during team calls emphasized the need for centralized tracking to address gaps in historical updates.

5. Vendor Collaboration Delays

Manual coordination with valuation vendors, especially if there are many credits planned for phase II (due to potential activity), results in prolonged process.

6. Ad Hoc Data Requests

Responding to unplanned queries often requires accessing and compiling data from multiple sources, diverting resources from routine tasks. It might happen that the Asset Management team needs to provide additional details on specific credits or deals.

7. Manual Data Extraction from Legal Documents

Metrics and financial terms within legal documents must be manually extracted. Even though most Asset Managers will know their credit in detail, they may still need to go through legal documents to confirm before providing information.

8. In Progress System Integrations

In progress onboarding of portfolio pillars in Atom Invest restricts real-time visibility and monitoring capabilities. During discussions on system use, it was noted that gaps in Atom Invest onboarding led to delays in creating comprehensive portfolio summaries.

9. Hypothetical Analysis Limitations

The lack of tools to model hypothetical scenarios hinders the ability to simulate changes in portfolio performance. During portfolio discussions, the team highlighted difficulties in performing "what-if" analyses to predict the impact of market changes. Scenario testing was flagged as a gap in Atom Invest's current capabilities, affecting strategic planning.

Recommendations

1. Specific Recommendations (Pain Points 1 & 6): Data Standardization & Automation

Specific Issues:

- Financial data from portfolio companies is submitted in non-standardized formats, requiring manual mapping to align with AM's internal structures.
- Inconsistent updates between systems (PIPE, Atom Invest, DealCloud) create discrepancies in deal ownership, financials, and performance tracking.
- No real-time validation between PIPE and Atom Invest, leading to data misalignment in valuations.
- Fact Sheet creation is manual and time-intensive, involving repeated manual formatting despite automation tools.
- Data inconsistencies between legal documents and financial systems require manual reconciliation.

A. Standardized Data Submission & System Alignment

1. **Mandate Standardized Financial Templates for Portfolio Companies**
 - a. Introduce structured submission templates (CSV/XLS formats) for financials, ensuring uniformity in reporting.
 - b. Automate ingestion of financials into Atom Invest and PIPE using validation rules to detect missing or inconsistent data.
2. **Automate Data Reconciliation & Validation**
 - a. Implement automated data syncs between Atom Invest, PIPE, and DealCloud to prevent mismatched deal records.
 - b. Develop automated validation dashboards to flag inconsistencies in financials and valuations before reporting.
3. **Enhance Fact Sheet Automation & Formatting Standardization**
 - a. Implement Power BI/Tableau templates for automatic report generation.
 - b. Remove manual resizing issues in Macabacus by enforcing standard formatting for reports.

2. Specific Recommendations (Pain Points 2 & 5): Reporting & Workflow Automation

Specific Issues:

- AM Weekly Reports, Fact Sheets, and Investor Memos requiring extensive manual rework to align metrics.
- Pipeline tracking inconsistencies in DealCloud and PIPE lead to reporting mismatches.
- No standardized ad-hoc reporting framework, requiring manual data pulls across multiple platforms.
- Time-consuming manual formatting and validation slow down reporting cycles.

A. Optimized Reporting Workflows & Self-Service Analytics

1. **Automate Report Generation & Scheduling**
 - a. Deploy self-service BI dashboards for AM Weekly Reports, reducing manual aggregation.
 - b. Automated scheduled report generation & email distribution.
2. **Enforce Pipeline Reporting Alignment**
 - a. Implement a DealCloud-PIPE sync protocol to ensure amendments, add-ons, and funding changes are reflected accurately.
 - b. Introduce automated deal classification tracking for real-time portfolio visibility.
3. **Create a Self-Service Ad-Hoc Reporting Framework**
 - a. Develop pre-configured reporting templates for frequently requested deal and valuation data.
 - b. Introduce centralized ad-hoc request tracking, reducing duplicate efforts across teams.
4. **Standardize Report Formatting Across Teams**
 - a. Create unified reporting templates to ensure consistency across all AM reports.
 - b. Automated formatting using BI tools to minimize manual intervention.

3. Specific Recommendations (Pain Points 3 & 7): Portfolio Monitoring & Compliance

Specific Issues:

- Inconsistent amendment tracking in DealCloud, leading to missing records.
- No automated triggers for borrower covenant breaches, requiring manual monitoring.
- Manual intervention in portfolio company monitoring, increasing response time for underperformance alerts.
- Inadequate visibility into real-time portfolio risks due to fragmented systems.

A. Risk Monitoring & Automated Compliance Tracking

1. Automate Covenant Compliance Alerts
 - a. Implement real-time compliance breach dashboards based on borrower financials.
 - b. Develop automated monthly covenant check reports integrated with PIPE.
2. Create a Structured Amendment & Funding Log
 - a. Centralize deal amendment history into PIPE to track funding changes, restructuring, and forbearance approvals.
 - b. Standardize deal modification approvals to enforce audit trials.
3. Enhance Portfolio Risk Analysis & Alerts
 - a. Develop automated risk heatmaps for distressed assets based on compliance history.
 - b. Automated dashboards to highlight underperforming borrowers, prompting intervention plans.
4. Integrate Real-Time Portfolio Monitoring Tools
 - a. Implement dashboards for continuous monitoring of key performance indicators (KPIs).
 - b. Link real-time monitoring with compliance systems for proactive risk management.
4. Specific Recommendations (Pain Points 3, 4 & 8): Cross-Team Coordination & Data Flow Management

Specific Issues:

- No structured handoff process between the Deal Team and Asset Management, leading to discrepancies in deal ownership.
- Delays in legal data extraction, requiring manual verification before reporting.
- Investor Relations reporting dependencies on manual inputs, slowing down quarterly reporting cycles.

A. Handoff & Collaboration Enhancements

1. Standardize Deal Transition & Ownership Tracking
 - a. Require a structured handoff checklist, ensuring Asset Management receives all deal-critical data.
2. Automate Data Extraction for Compliance Reporting
 - a. Continue investigating AI-powered document parsers to extract financial terms (e.g., interest rates, maturity extensions).

- b. Store key financial term summaries in PIPE for quick reference.
- 3. **Streamline AM & Investor Relations Coordination**
 - a. Automated data feeds for IR reports, removing manual inputs for quarterly updates.
 - b. Introduce real-time co-investor dashboards.
- 4. **Establish Centralized Communication Channels**
 - a. Use shared dashboards to provide transparent, up-to-date information accessible to all stakeholders.

Finance and Fund Accounting

Roles and Responsibilities

The Finance Department oversees the organization's financial operations and strategies, ensuring the seamless functioning of critical financial processes and compliance across all levels of the organization. It is organized into three key areas:

- **Accounting:** Handles Fund accounting, management accounting, tax compliance, tax structuring, and regulatory compliance. The team is responsible for maintaining accurate financial records, managing regulatory submissions, and overseeing transparent accounting processes for 19 Funds.
- **Financial Planning & Analysis (FP&A):** Focuses on budgeting, forecasting, cash flow management, and internal financial reporting. This team plays a pivotal role in supporting strategic decision-making and ensuring the organization's financial stability
- **Operations:** Oversees fund operations, manages loan administration to ensure accuracy and compliance, and handles internal and external reporting to meet stakeholder and regulatory requirements.

The Finance Department's mission is to maintain financial integrity, ensure regulatory compliance, and provide comprehensive financial support to meet the organization's strategic objectives.

Core Responsibilities:

1. Regulatory and Tax Compliance

- **Regulatory Compliance:** Regulatory compliance is a shared responsibility managed collaboratively by High Camp, the external compliance consultant, along with Metropolitan's finance and legal teams, ensuring adherence to legal requirements and maintaining accurate and transparent accounting processes for 19 Funds in total. These responsibilities include monitoring compliance standards, maintaining financial records, and producing reports that align with regulatory and operational needs, emphasizing that compliance extends beyond finance to include legal and external expertise.
- **Fund Administration:**
 - Fund administration is managed collaboratively by the Finance department and external fund administrators. Currently, three external providers are involved:
 - FIS administers Funds VI to VIII.
 - Maples oversees Funds 4 and 5.
 - Funds 3 and 3A are handled internally by the Finance department.
 - Phalanx prepares financial statements for Funds VI to VIII quarterly and for all other Funds annually.
 - Apart from compliance, providers are responsible for the preparation of allocations, Private Capital Call notices, NAV workpapers and waterfalls. These outputs are reviewed by the Finance department.

- The LP360 system is fed from the external share register systems of FIS and Maples quarterly via LP360 templates prepared by OEHM.
- **Tax Compliance:**
 - The team oversees tax compliance with support from an external tax advisor (KPMG). KPMG prepares annual tax returns and K-1s, which are reviewed by the Finance department and delivered via the DX portal.
 - KPMG is also involved in preparing allocations for all Funds and SPVs, ensuring adherence to federal, state, and local tax regulations.

Overview of Funds administration

Funds	Data Source	Provider				
		FA	Phalanx	FIS	Maples	OEHM
Funds 3 + 3A	Quickbooks	<i>Q Financial statements</i>				
	Excel	<i>PCAP notice</i>				
	Excel	<i>Allocations</i>				
	OEHM					<i>LP360 updates</i>
Funds 4-5	Maples SW	<i>Q Financial statements</i>		<i>Allocations</i>		
	Maples SW			<i>PCAP notice</i>		
	Maples SW			<i>NAV workpapers</i>		
	Maples SW			<i>Waterfall</i>		
	Maples SW			<i>Special distr.template</i>		
	OEHM					<i>LP360 updates</i>
Funds 6-8	FIS SW		<i>Q Financial statements</i>	<i>Allocations</i>		
	FIS SW			<i>Waterfall</i>		
				<i>NAV workpapers</i>		
	FIS SW			<i>Special distr.template</i>		
	FIS SW			<i>PCAP notice</i>		
All Funds	OEHM					<i>LP360 updates</i>
			<i>Annual Financial statements</i>			
SPV	Quickbooks	<i>Financial statements prep</i>				<i>LP360 updates</i>
	OEHM					

2. Investor Reporting

- **Performance Monitoring:** Regularly evaluates fund and investment performance, providing insights through detailed analysis of key metrics and trends. The team utilizes standardized financial models to support decision-making and optimize investment strategies.

3. Cash Flow and Liquidity Management

- **Forecasting and Monitoring:** Conducts weekly cash flow analyses to forecast inflows and outflows, ensuring sufficient liquidity to meet both immediate and long-term obligations.
- **Capital Planning:** Identifies capital requirements and formulates strategies to align financial resources with organizational priorities and investment opportunities.
- **Operational Alignment:** Maintains robust tracking of fund-level liquidity, ensuring operational needs are consistently met.

Organizational Structure and Collaboration

- **Collaboration Framework**

To ensure seamless financial operations, the Finance Department collaborates closely with other stakeholders

- **Deal Team:** Provides essential financial oversight during deal evaluations, ensuring alignment of funding allocations and financial projections. Supports processes like deal-specific checklists and loan tape preparations.
- **Operations:** Supplies transactional data for Finance reporting via the MS Fabric database, enhancing data integration and consistency.
- **Asset Management Team:** Shares updates on portfolio performance, leveraging performance calculations prepared by the Finance department for strategic insights.
- **Legal Team:** Collaborates on regulatory compliance, allocation reviews, and valuation standards, ensuring robust legal and financial integration.
- **Investor Relations (IR):** Relies on financial data, including the Track record, for effective investor communication and strategy formulation.
- **Tax Advisors:** Partners with KPMG to manage tax compliance and regulatory guidance, ensuring accurate and timely filings.
- **Auditors:** Reviews financial statements and supporting documentation to confirm adherence to accounting standards and maintain integrity.
- **Regulators:** Works closely to align financial reporting with compliance frameworks, ensuring transparency and adherence to evolving regulations.
- **Fund Administrators:** Coordinates with external providers to ensure timely and accurate reporting, compliance, and financial integrity for all managed Funds.

Tools

Primary tools

1. PIPE (Portfolio Investment Platform)

PIPE is a centralized data management and analytics tool built on a semantic data model developed in Power BI Desktop by a third-party provider, OEHM Automation, LLC. This model consolidates data from multiple Excel investment models stored on SharePoint, forming the foundation for consistent and streamlined reporting. The firm collaborated with OEHM to define and implement a variety of measures tailored to their specific needs. These measures can now be dynamically accessed through Excel using pivot tables and add-ons, enabling stakeholders to explore and analyze data effectively.

Implementation:

- Built on a semantic data model to integrate data from multiple sources.

- Provides consistent metrics and dynamic queries accessible through Excel.
- Regular updates ensure reliability in projections and reporting.

User Roles:

The Operations team possesses the most in-depth knowledge of PIPE, and its data retrieval processes, making them the go-to resource for accessing and extracting information. Due to their expertise, they frequently assist other teams, including the Finance department, by providing accurate and timely data needed for their operations or decision-making. This collaboration not only streamlines workflows but also ensures that data is consistently retrieved and interpreted correctly, reducing errors, and saving time for other teams. Their role as a knowledge hub highlights their importance in maintaining efficient and effective cross-team communication and support.

Key Functionality:

- **Data Integration:** Consolidates investment data from multiple models and provides systematic updates.
- **Point-in-time Balance Tracking:** Tracks principal and accruals.
- **Future cash flow forecast:** Enables the forecasting of future cash flows, allowing a development of the “Fund Models.”

Frequency of Use:

PIPE is used on a weekly, quarterly, annual, and ad hoc basis, ensuring consistent access to up-to-date information for analysis and decision-making.

Challenges:

- Inconsistent data definitions across different asset classes and manual additions for legacy deals.
- The quality of insights depends on the user's expertise and understanding of the tool, even when the data is clean and well-structured.
- Proper training and hands-on experience are necessary for reliable data access and interpretation.

2. LP360

LP360 is an investor-focused tool designed to support the needs of the Investor Relations (IR) team. It provides comprehensive insights into investor history, commitments, and investment performance, helping the team manage and analyze investor data effectively.

Implementation:

- The tool is built on a semantic data model developed in Power BI Desktop by a third party.
- Consolidates fund administrator extracts stored on OneDrive.
- Features predefined calculations and queries for data visualization.

Key Functionality:

- **Investor Data Management:** Tracks commitments, performance across funds, and history.
- **Reporting Automation:** Automates predefined queries for easy metric access.

Data Visualization: Provides tailored insights for decision-making.

User Roles:

Users interact with LP360 through Excel, leveraging predefined queries and pivot table configurations. Automated processes, such as robotic commands, streamline the retrieval of relevant data, making it easy for users to generate reports and access key metrics without extensive manual effort. The tool is primarily used by roles within the Finance and Operations team, to support the IR department. The tool was developed by legacy IR and finance teams to support extensive use by both Finance and Investor relations. Investor relations must transition from being passive end users to active participants in the platform. While they currently manage partner mapping, becoming active users is essential to fully leverage the tool's value.

Integration Framework:

- **PIPE Integration:** Data importation for broader analysis capabilities using Excel plugins.
- **Future Goals:** Streamline workflows with potential API or direct integration enhancements.

Frequency of Use: LP360 is updated quarterly when a new vehicle is launched.

Challenges:

- Effective use of the tool is essential for extracting and manipulating results efficiently.
- The consciously chosen update cadence creates potential challenges for delivering timely insights.
- Reliance on external sources and manual reconciliation, which is unavoidable, as administrators serve as the official accounting books and records, complicates workflows.

3. QuickBooks

QuickBooks, accounting software, plays a key role in managing financial operations. The system maintains the company's General Ledger, generates essential financial reports such as Balance Sheets and Income Statements, and handles reconciliations, simplifying the preparation of statements and audits.

User Roles:

The system is used by the Finance department to manage transactions and ensure regulatory compliance.

Secondary Tools

1. DX Portal

The Portal is the Investor Relations' platform, licensed by FIS, that serves as a centralized hub for storing and exchanging documents between companies. It enables Metropolitan to include externally administered Funds within a customized, branded format. The company has also purchased a license that allows additional funds to be added to the portal as needed.

User Roles:

The platform's users mainly include the Finance department and Fund administrators who need access to shared documents for managing, reviewing, and exchanging information related to various Funds.

2. FIS/Maples Accounting Software

External accounting software used by the outsourced accounting firms administering Funds. This software is predominantly used for their internal processes, such as preparing financial reports. The platform is an essential part of the Investor Relations structure, with Investor Relations being the main users. FIS Fund Administration were engaged to manage it due to capacity limitation.

User Roles:

The software is used by external accountants administering the Funds.

3. Shared Drive

The company's shared drive serves as the main place where files and documents are stored, organized, and shared.

User Roles:

- **Administrators:** Manage access permissions, organize folder structures, and ensure security.
- **Contributors:** Upload and manage files for collaboration.
- **Viewers:** Access and review files without editing rights.

Processes

Process Workflow Overview

Data management processes utilize structured systems with standardized templates and controlled updates to ensure accuracy and consistency, aligning reporting with specific timelines. These systems support comprehensive datasets maintained through detailed tracking, reconciliation, and strict

publication controls, enabling precise reporting and informed decision-making. Effective use of these tools relies on strong data-querying skills and robust oversight.

1. Usage of LP360 in Data Management

- **Update Cadence:** LP360 is updated quarterly, adhering to the reporting cadence of 45 days (about 1 and a half months) after the quarter end. Data extraction for a specific quarter becomes available only once all relevant information has been completed and verified.
- **Data Management:**
 - **Externally Managed Funds:** Administrators create specific templates after each quarter to upload information into MS Fabric. These templates ensure structured data management for reporting purposes.
 - **In-House Funds:** Templates are based on Excel files tracking movements, with activity generally limited to updating NAV values due to the low activity levels of in-house Funds.
 - **Administrative Oversight:** Quarterly activity queries rely on administrators, who serve as the definitive source of truth for fund activity.
- **Standardized Templates and Reports:**
 - The team uses standardized templates for data querying, including reports tailored to IR team requests.
 - Key reports include the "LP360 – Commitments by Decision" template, summarizing fund movements by decision-makers and LPs. Users are prompted to select Funds before data extraction. Results can be summarized and manipulated like pivot tables, allowing the addition of metrics such as IRR and NAV.
- **Skill Requirements:** Effective use of the tool is required for retrieving and manipulating results efficiently.

2. Usage of PIPE in Data Management

- **Overview:**
 - PIPE, like LP360, retrieves information from MS Fabric but supports 75 measures compared to LP360's 30, with only one measure, 'Commitments,' shared between them.
 - Both systems group 19 Funds into eight fund families, but PIPE includes additional data on Co-Investor, Participant TTU, and UMF investment families. These are excluded from LP360 on purpose since they are not stand-alone Funds.
 - Naming discrepancies exist, for example, MPF VII/VIII in LP360 is called MPF VII/VIII Onshore in PIPE.
- **Data Source:**
 - Data is derived from Investment model Excel files, foundational for subsequent project reporting. These files are manually updated by the Finance department after deal finalizations and are stored on Shared Drive.
 - For selected Funds, external administrators maintain parallel records to the investment files, with monthly reconciliations performed by the Operations team to ensure consistency.
- **Publishing Controls:**
 - Investment files remain unpublished until complete, ensuring only accurate data is used for reporting queries.

- A designated power user manages file publication, supported by a stand-in when necessary.
- The "Model Status" report flags unsynchronized models based on the 'last updated' field, prompting the export of the most recent version of the investment model as a CSV to MS Fabric for corrections.
- **Standardized Templates and Reports:**
 - Templates like "Investment Exposure" address IR team requests, combining dynamic calculated fields with static reference data for consistency with the "Track file".
 - Other templates include "Fund Interest & Fee Cash Flow Breakdown," which report cash flow related to interest and fees.
- **Efficiency Features:**
 - PIPE includes commands like "Open Model," enabling users to quickly access specific models and streamline the navigation process for greater efficiency.

Frameworks and Deliverables

Data-Driven Approach

- Reliance on centralized systems like PIPE and LP360 has streamlined data access and reporting.
- Transition from Excel-based workflows has improved accuracy and efficiency.

Structured Deliverables

- **Daily:** Transaction updates and ad hoc analyses.
- **Weekly:** Cash flow reports.
- **Monthly:** Reconciliations and tax documents.
- **Quarterly:** Financial statements, NAV updates, and Fund quarterly letters.

Challenges

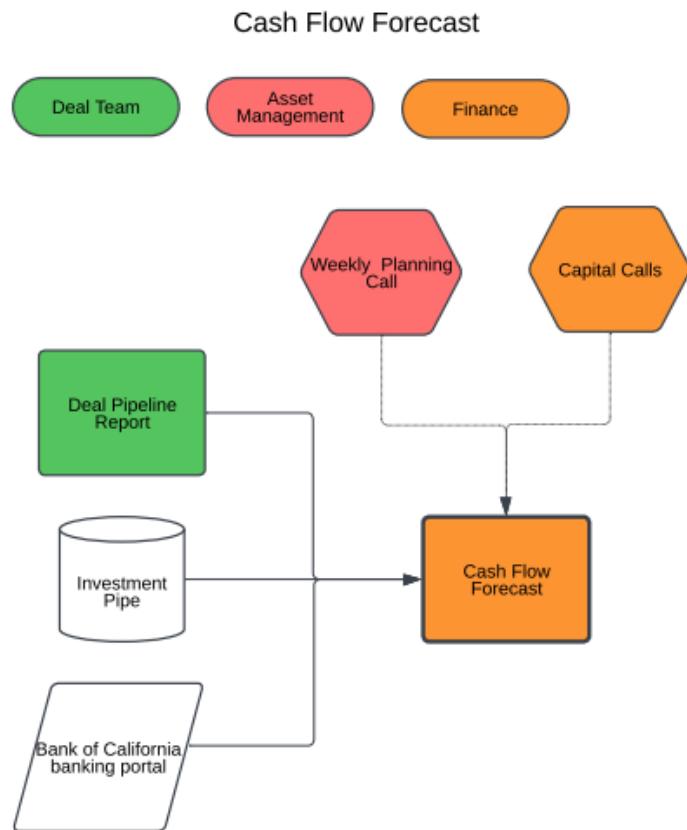
- **Data Standardization:** Variability in administrators' data formats require manual adjustments.
- **Reconciliation Complexity:** Discrepancies between internal and external datasets demand additional effort.
- **System Training:** Ensuring all users are proficient in PIPE and LP360 functionalities.

Reports

Reports Workflow Overview

Reports are prepared regularly to monitor cash flow, analyze performance, and support effective decision-making. They forecast future funding needs, assist in planning, and resource allocation. These reports play a critical role in guiding organizational strategies and ensuring investment feasibility.

1. Cash Flow Forecast Creation Process



• This diagram is for illustrative purposes and may not capture all the data sources involved

1. Purpose of the Cash Flow Forecast

The Cash Flow Forecast is prepared weekly by the Finance department (FP&A) and finalized by the end of the day (EOD) Tuesday. Its primary goal is to predict cash inflows and outflows over a specific period, allowing the company to manage liquidity efficiently. The report helps:

- Identify potential shortfalls or surpluses.
- Ensure sufficient Funds are available for operations, investments, or debt obligations.

2. File Storage and Accessibility

- **File Location:** The Cash Flow Forecast is stored on a restricted-access shared drive.
- **Distribution:** Two tabs, 'Current Month' and 'Other Months', form part of the Asset Management Reporting Package, which is published every Wednesday and sent to the entire company by the Asset Management team.

- **Target Audience:** The CIO and CAO are the primary recipients of the report.

3. Data Sources

- **Bank of California Website:** Provides cash movement data.
- **Deal Team:** Communicates new deal funding requirements to Finance.
- **Asset Management Team:** Shares funding needs and approximate timelines during the weekly planning call held every Wednesday.
- **Fund Accounting Team** Provides input on Capital Calls outstanding via email by EOD Tuesday.
- **Microsoft Fabric (via PIPE):** Delivers data on unfunded commitments through a query template.

4. Detailed Breakdown of Tabs in the Cash Flow File

- ‘Current Month’ Tab

- **Purpose:** Centralized weekly summary of funding needs, presented in two scenarios:
 - High Case
 - Conservative Case.

- **Structure:**

Cash on Hand: Bank balance status updated in the ‘Investable Cash Balance’ section using data from the Bank of California.

Funding Needs: Summarized by month at the deal level, specifying whether the deal is new or an upsize. Regular funding is pre-populated based on historical trends.

Cash Inflows: Includes standardized figures that remain fixed week-to-week, with deal payoffs added when applicable. ‘Capital Calls Outstanding’ are updated based on inputs from the Fund Accounting team.

- ‘Other Months’ Tab

- **Purpose:** Provides a two-month forecast of expected cash movements.
- **Process:** Updated in the same manner as the ‘Current Month’ tab to maintain consistency

- ‘Unfunded Commitments’ Tab

- **Source:** Data retrieved from Microsoft Fabric via PIPE queries, manually input by FP&A.
- **Usage:** Tracks unfunded balances on active deals, with data integrated into other tabs using existing formulas.

- ‘Interest Adjustment’ Tab

- **Purpose:** Summarizes cash received as interest and fees for the quarter.
 - Cash received as interest is flagged, reserved, and deducted from the investable cash balance in the ‘Current Month’ tab.

- Figures are hardcoded when pasted over formula references and key figures are highlighted to emphasize the need for a follow up.
- ‘Summary’ Tab
 - **Purpose:** Aggregates new investment data based on the Deal Team’s ‘Pipeline Report’.
 - **‘Target Close’ Date:** Updated weekly with inputs from the Deal Team’s meeting attended by FP&A.
 - Funding needs are allocated to the ‘Current Month’ or ‘Other Months’ tabs.

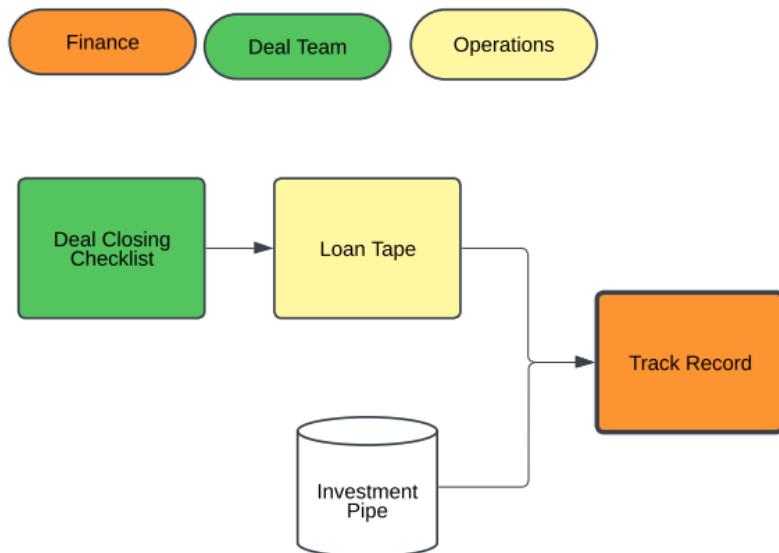
5. Data Quality Assurance

- **Reconciliation:** No reconciliation of forecast to actuals is conducted, there have been no significant variances to date.
- **Focus:** Avoidance of negative fund balances is the primary concern.
Escalation: Liquidity issues identified in the forecast are immediately reported to senior management.
- **Late Updates:** Any late changes due to delayed input are reflected in real time and shared via email with specific individuals. These updates are saved but not distributed to all stakeholders.

6. Reporting and Distribution

The ‘Current Month’ and ‘Other Months’ tabs are integral to the Asset Management Reporting Package, distributed company-wide every Wednesday.

2. Track Record Creation Process



- This diagram is for illustrative purposes and may not capture all the data sources involved

1. Use Case

The Track Report is a key tool for evaluating investment performance. It is prepared quarterly by the FP&A team and serves as the company's ultimate source of truth.

The report helps:

- Present historical returns.
- Enable informed decision-making for investors and stakeholders.

2. File Storage

- **Location:** The file is stored on a shared drive with restricted access.
- **Distribution:** It is shared with the Investor Relations department, which uses the data for communication with prospective investors.

3. Data Sources

The Track Report integrates data from multiple sources:

- **Investment Model, and PIPE Template Queries:** These provide updated cash flow information for the Funds.
- **Loan Tape Record file (Master List of All Investments):** Supplies details on Funds' investment sectors, pillars, and exit years.

4. Detailed Breakdown of Tabs in the Track Report

The Track Report contains multiple tabs, each offering detailed performance metrics for individual Funds.

- **'Track Record' Tab**

- **Purpose:** Summarizes key performance data across all Funds.
- **Columns:** 'Total Committed,' 'Total Invested,' 'Realized,' 'Unrealized,' and 'Total Value' are sourced from individual investment model data via PIPE.
- Additional information, such as Pillar, Sector, and Year of Exit, is derived from the Loan Tape file.

- **Cross-Checking with the Loan Tape File**

Since the Track Report is updated quarterly while the Loan Tape is updated in real-time, these files require cross-checking to ensure alignment on any updates during the quarter.

- **Individual Fund Tabs**

- **Performance Calculations:** Each fund's performance is calculated individually, with results consolidated in the summary tab.

- **Calculations Performed in the Track Report**

The following metrics are computed:

- **Gross MOIC:** Aggregate value of all investments divided by the total amount invested.
- **Gross IRR:** Fund-level, annual, compounded internal rate of return.
- **Net MOIC:** Gross MOIC adjusted for a 2% management fee and 20% carried interest.

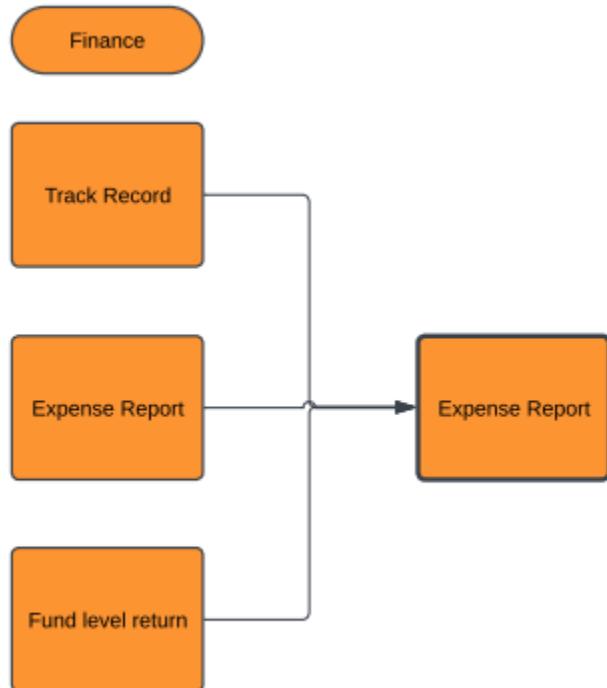
- **Net IRR:** Gross IRR adjusted for a 2% management fee and 20% carried interest.
- **Realized Investment (Gross/Net):** Performance of exited deals.

5. Data Quality

Quality checks are a critical aspect of the Track Report and include the following steps:

- **Multi-Step Review Process:** Conducted by the Operations Team.
- **Validation Against the Valuation File:** The Valuation file is a live report, and discrepancies may arise due to delays or inaccuracies in queries from MS Fabric. Manual intervention may be required to correct these discrepancies.
- **Sense Checks:** Compare return rates per fund against historical performance for reasonableness.
- **Manual Updates:** Columns such as 'Date Exited' are currently updated manually, though automation via PIPE integration is a potential improvement.
- **Hardcoded Data:** Some data in the Track Report is hardcoded, which introduces risks and is flagged for review.
- **Lack of Formal Framework:** The review process lacks an official governance framework or formal sign-off procedure, potentially impacting data accuracy.

3. Return and Performance Calculations Process



1. Use Case

The **Track Record** file is designed to facilitate in-depth performance analysis and includes critical calculations to enhance its utility:

- **Gross-to-Net Walk Calculation:**
 - Highlights the difference between gross and net performance, providing a transparent view of actual earnings.
- **Realized Investment IRR Calculation:**
 - Displays the annual return earned by an investment.

2. File Storage

- **Location:** The calculations are part of the Track Record file, stored on a shared drive with restricted access.
- **Distribution:** The file is shared with the Investor Relations department, which leverages its data for prospective investor communication.

3. Data Sources

The **Track Record** file integrates data from multiple sources:

- **Cash Flow Information of Funds:** Directly updated within the Track Record.
- **Expense Summary File:**
 - Provides expenditure trends categorized into four types: Interest, Organizational Costs, Other Expenses, and Management Fees.
 - Prepared quarterly and supplied by the Fund Accounting team.
- **Fund Level Returns File:**
 - Contains data on LP and GP contributions and distributions, also provided by the Fund Accounting team.

4. Detailed Breakdown of Tabs in the Gross-to-Net Walk Calculation

- **Location:** The 'Gross to Net' calculation is available in a tab named 'Gross to Net' within the Track Record file.
- **Sources and Process:**
 - **Gross and Net IRR and Capital Activity:** Derived from individual Funds' tabs.
 - **Expense Data:** Sourced from the Expense Summary File, which categorizes year-to-date (YTD) expenses into four categories:
 - Interest
 - Organizational Costs
 - Other Expenses
 - Management Fees
- **Output:**
 - A clean table listing 'Actual Net LP IRR' by fund, walking from Gross Portfolio IRR to Actual Net LP IRR, with the impact of capital timing, interest, org costs, other expenses, mgt fees and carry in between.
 - Includes calculations for both the current and preceding quarters.
 - An additional table highlights movements in key metrics over time.

5. Detailed Breakdown of Tabs in the Realized Investment Return Calculation

- **Location:** The calculation is summarized in the 'Realized v Portfolio' tab.
- **Source:** Data is derived from the composite table 'Realized inv Return,' which consolidates data from individual Funds' tabs (specifically, the column 'Realized Investment').
- **Purpose:** Reflects returns from exited investments, providing a detailed summary of their performance.

6. Data Quality

- The data review process for the Track Record file includes a multi-step validation framework, as outlined in the Track Record review section.
- Specific to these calculations, data quality checks ensure accuracy in integrating:
 - Expense summaries
 - Fund-level contributions
 - Realized investment data.

Pain points and Challenges

The Finance department at Metropolitan oversees essential processes, including fund accounting, cash flow management, regulatory compliance, and investor reporting. Utilizing tools like PIPE, LP360, and QuickBooks, the team navigates a complex network of internal and external data, delivering accurate and timely insights to stakeholders.

Despite the workflows and reliance on advanced systems, the Finance department faces several challenges across data management, reporting, and operational coordination. These challenges arise from dependencies on manual processes, misaligned system integrations, and inconsistencies in data provided by external Fund administrators. Addressing these issues is essential to enhancing efficiency, accuracy, and the team's ability to meet strategic objectives.

1. Challenges of User-Driven Data Extraction

The accuracy of data extraction relies on users' ability to frame precise questions and queries. Miscommunication or lack of expertise can lead to incomplete or incorrect outputs. Users bear the burden of ensuring the clarity and precision of their inquiries, increasing the risk of misinterpretation and flawed conclusions.

2. Off-Cycle Data Requests

The current reporting schedule is not designed to accommodate ad hoc data queries effectively. Off-cycle requests require merging external data sources with internal resources, creating additional workload and increasing the complexity of data validation.

Note: Quarterly LPI updates restrict the ability to deliver real-time insights for stakeholder requests, including details on market value, costs, or fund-specific accruals.

3. Automating File Updates for Accuracy

Numerous files are updated manually, which can lead to errors and inconsistencies. Examples include Cash Forecast and Track Record files. Manual processes consume time and effort while introducing data quality issues. Automation can reduce errors, improve data consistency, and ensure files remain synchronized.

Note: Reconciliation between PIPE and external fund administrator data requires significant manual intervention.

4. Centralized File Storage

Final versions of distributed files are not consolidated in a centralized repository, leading to versioning issues. Unstructured storage increases the risk of stakeholders accessing outdated or incorrect files, leading to inefficiencies and miscommunication. For example, the Cash Forecast is shared via email, with updates communicated to only a small group.

Note: The shared drive structure lacks real-time collaboration capabilities and version control.

5. Inconsistent Field Naming Across Files

Field naming conventions differ between internal reports and those generated by external fund administrators, creating challenges in data integration and analysis. The lack of standardization leads to inefficiencies and errors during data consolidation, particularly when merging internal and external data sets.

Note: Field inconsistencies extend to PIPE and LP360, requiring additional reconciliation efforts.

6. Limited Audit Trail and Change Management

The process for recording and tracking changes to key financial reports (e.g., Track Record, Cash Flow Forecast) lacks a formal audit trail, complicating accountability, and transparency. Without a structured process for documenting changes, errors may go untracked, increasing risks during audits or stakeholder reviews.

7. Lack of Integration Between Systems

Limited integration between PIPE, LP360, and other financial tools (e.g., QuickBooks, DX Portal) necessitates manual data transfer, increasing the risk of errors and inefficiencies. The lack of seamless integration creates bottlenecks in workflows, particularly during fund reconciliations and reporting cycles.

Note: Dependency on third-party administrators (e.g., FIS, Maples) further compounds this issue as data updates are delayed.

Recommendations

1. Challenges of User-Driven Data Extraction

The accuracy of data extraction relies on users' ability to frame precise queries and to interpret data correctly. Miscommunication or lack of expertise with the system may increase the risk of flawed conclusions and unreliable insights.

Recommendation:

- A. **Implement Power BI Dashboards:** Set up easy-to-use Power BI dashboards designed to meet specific data needs, making information more accessible, reducing manual work, and simplifying the system for user
- B. **Enable Intuitive Navigation:** Ensure dashboards are designed with easy-to-use navigation and filtering options to simplify data access.
- C. **Provide Non-Technical Access:** Equip all users with the ability to retrieve required information without needing technical skills, improving reliability, and reducing errors.

2. Off-Cycle Data Requests

The current reporting schedule makes it less straightforward to handle ad hoc data requests smoothly. Merging external data with internal resources adds extra steps and slows down insights for important stakeholder needs.

Recommendation:

- A. **Implement a Unified Data Platform:** Consolidate data from various sources into a single platform to address availability gaps between reporting cycles.
- B. **Enable Real-Time or Manual Updates:** Configure the platform to support either instant updates or manual refreshes based on infrastructure setup.
- C. **Eliminate Manual Exchanges:** Reduce reliance on email and manual methods for data exchange, improving accessibility and response times.

3. Automating File Updates for Accuracy

Manual file updates, such as those for Cash Forecast and Track Record files, are prone to manual errors and inefficiencies. The process consumes time and creates risks for data quality.

Recommendation:

- A. **Introduce Automation Tools:** Replace manual updates with automated workflows for files like Cash Forecast and Track Record, reducing time and effort.
- B. **Enhance Accuracy:** Eliminate manual errors such as typos or missed updates by automating repetitive tasks.

- C. **Refocus Team Efforts:** Allow the team to concentrate on higher-value tasks by reducing the burden of manual processes.

4. Centralized File Storage

Distributed files lack a centralized repository, leading to versioning issues and inefficiencies. Stakeholders risk accessing outdated or incorrect files, complicating collaboration.

Recommendation:

1. **Optimize SharePoint for Centralization:** Use SharePoint to consolidate key files, such as Cash Forecast, into a structured, centralized library.
2. **Enable Version Control:** Activate version control to track changes and ensure access to the latest file versions.
3. **Leverage Real-Time Collaboration:** Use SharePoint's co-authoring feature to enable multiple users to edit files simultaneously.
4. **Automate Notifications:** Set up workflows to alert stakeholders about updates or changes to important files.

5. Inconsistent Field Naming Across Files

Field naming conventions differ between internal and external reports, creating inefficiencies and errors in data integration. This issue complicates reconciliation and reporting.

Recommendation:

1. **Standardize Naming Conventions:** Use the unified data platform to harmonize naming structures across all data sources.
2. **Cleanse and Align Data:** Correct discrepancies and ensure consistency during data integration.
3. **Prepare Data for Reporting:** Organize cleaned data for seamless use in reporting tools, eliminating manual corrections.

6. Lack of Integration Between Systems

Limited integration between financial tools requires manual data transfers, leading to bottlenecks and a higher likelihood of errors. Dependency on third-party administrators adds another layer of complexity.

Recommendation:

1. **Establish APIs for Integration:** Connect systems such as PIPE, LP360 and QuickBooks through APIs to automate data transfer.

2. **Leverage a Unified Data Platform:** Aggregate data from various systems into a centralized platform to streamline workflows.
3. **Eliminate Manual Dependencies:** Reduce reliance on manual processes and third-party updates to improve efficiency and data accuracy.

Deal Team

Roles and Responsibilities

The Deal Team plays a pivotal role in sourcing, analyzing, and closing high-quality investment opportunities, ensuring they align with the firm's strategic objectives. Their responsibilities encompass the entire lifecycle of a transaction, from identifying opportunities to structuring and finalizing deals, all while ensuring a seamless handover to the Asset Management and Operations team post-closure.

This process demands ongoing engagement and collaboration, with the team focusing on maximizing deal value, mitigating risks, and maintaining operational efficiency. Their key functions include identifying transactions through various channels such as brokers, operating experts, and previous collaborators, prioritizing proprietary approaches to reduce dependency on brokered deals.

Additionally, the Deal Team oversees due diligence, manages legal documentation, and leads negotiations with lawyers and target companies. They collaborate closely with Operating Experts for specialized insights and with the Investment Committee to provide updates, address transaction stages, and resolve potential challenges. This integrated approach ensures that each deal is structured effectively, supports organizational goals, and is positioned for long-term success.

Core Responsibilities

1. Deal Sourcing

The Deal Team actively identifies and evaluates potential investment opportunities to build a robust deal pipeline. This involves:

- **Identifying Transactions:** Building and maintaining relationships with brokers, operating experts, and internal networks to uncover proprietary opportunities and minimize reliance on highly competitive brokered deals.
- **Market Analysis:** Conducting continuous sector and market research to identify trends, opportunities, and strategic alignments with the firm's investment objectives.

2. Transaction Management

The team ensures meticulous oversight of every deal, from initial evaluation to final execution. Key activities include:

- **Due Diligence:** Coordinating comprehensive assessments, including financial audits, legal reviews, and operational analyses, often leveraging third-party advisors and internal experts.
- **Structuring and Negotiations:** Crafting deal structures that meet investment criteria and managing all negotiations with counterparties and legal teams to finalize transaction terms.

3. Investment Committee Engagement

The Deal Team prepares and facilitates presentations for Investment Committee approvals, ensuring informed decision-making. Responsibilities include:

- **Screening Memos:** Drafting concise documents outlining transaction structures, risks, and initial investment hypotheses for committee review post-term sheet issuance.
- **IC Memos:** Developing detailed memos that articulate the investment case, including potential risks, benefits, and strategic fit, to secure final approvals.

4. Closing and Transition

Ensuring seamless execution and operational readiness post-closing is a critical aspect of the Deal Team's role. This includes:

- **Deal Closure:** Managing the finalization of agreements, including fund flow coordination and validation of transaction details with internal stakeholders.
- **Handover to Asset Management and Operations:** Delivering comprehensive documentation and conducting knowledge transfer sessions to enable effective deal monitoring and performance tracking by Asset Management.

5. Portfolio Contributions

The Deal Team supports portfolio performance and lifecycle management by:

- **Support for Asset Management:** Providing strategic insights and historical context on deals during their lifecycle, especially for amendments, extensions, or complex scenarios requiring additional expertise.

Strategic Objectives

Beyond day-to-day execution, the Deal Team aims to serve as a pivotal driver of organizational success by focusing on the following:

- **Maximizing Value Creation:** Secure investment opportunities with robust financial returns and strategic alignment while leveraging proprietary networks and market insights.
- **Streamlining Processes:** Develop and standardize workflows that enhance efficiency across the deal lifecycle and implement automation to reduce manual errors.
- **Fostering Collaboration:** Build and sustain partnerships across internal teams and external stakeholders to ensure optimal transaction outcomes and seamless operational transitions.

Organizational Structure and Collaboration

The Deal Team operates within a structured framework, ensuring cross-departmental collaboration and alignment:

- **Team Composition:**
 - Junior Deal Associates: Handle initial deal screening, market research, and data management.
 - Senior Deal Leads: Oversee transaction strategy, negotiations, and Investment Committee engagements.
- **Collaboration Framework:**

The Deal Team ensures cohesive coordination throughout the deal lifecycle, facilitating effective collaboration among departments and external stakeholders to drive seamless execution of transactions:

- **Legal Team:** Collaborates on contract drafting, regulatory compliance, and resolving complex legal issues.
- **Asset Management Team:** Partners during the post-closing phase to ensure alignment on terms and operational handoffs, including the smooth transition of deals. The team also supports asset managers when add-ons require system updates or clarification on deal terms.
- **Investor Relations Team:** Provides weekly pipeline reports and detailed one-page overviews for active deals past the term sheet stage. These deliverables ensure Investor Relations has the latest updates for effective communication.
- **Finance Team:** Ensures accurate integration of financial terms, such as interest rates and monitoring fees, into the firm's operational systems. This collaboration includes validating fund flows and other transactional data.
- **Operations Team:** Works jointly to prepare deal documentation, manage fund flow letters, and validate operational readiness for execution. Ensures key data points, including broker and non-broker designations, are accurately captured to maintain reporting integrity.
- **Operating Experts Team:** Interacts regularly to ensure proper tagging of deals as brokered or non-brokered and coordinates data for parsing operating expert inputs. Communicates via generic mailboxes for new deal entries and works collaboratively to resolve any data inconsistencies.

Tools

Primary Tools

- DealCloud

DealCloud serves as the primary CRM platform for managing the Deal Team's end-to-end processes, from sourcing to deal closure. This system supports multiple stakeholders, including the Deal Team, Asset

Management, Operating Experts, and Investor Relations. Despite its wide usage, roles and responsibilities within the system lack clear definition, presenting an opportunity for structured improvements.

Key Functionality:

- Centralized repository for deal-related data and updates.
- Facilitates the entry and maintenance of new deals, ensuring accurate tracking and reporting.
- Enables collaborative workflows for creating deal closure checklists for Asset Management and Operations teams.

Implementation History:

- Initially implemented in 2018 as a replacement for Effront, which was found inadequate for CRM functions.
- Over time, DealCloud has become the backbone for transaction and relationship management, with ongoing efforts required to optimize its usage across teams.

Challenges:

- Undefined roles and responsibilities create inconsistencies in data entry and maintenance.
- Bulk updates introduce errors, requiring corrections that delay reporting.
- Insufficient training for teams like Asset Management leads to inefficiencies.
- Historical data gaps arise when new fields are not backfilled for older deals.
- Lack of process for distinguishing add-ons from new deals inflates deal counts.
- Manual dependencies, including outdated macros, hinder efficiency, and accuracy.

Secondary Tools

- Excel and PowerPoint Integration Tools

While DealCloud handles the majority of CRM functions, Excel and PowerPoint remain integral for data analysis and presentation.

- Used for generating detailed IC memos and pipeline reports.
- Excel plugins facilitate data extraction for use in reporting and analytics.
- PowerPoint integration enables streamlined report creation for the Investor Relations and senior management teams.

- SharePoint

SharePoint serves as the centralized platform for storing deal-related documents and maintaining collaborative workflows.

- Houses term sheets, legal documents, and other key materials.
- Supports cross-departmental access for seamless information sharing.

- Generic Mailboxes

Generic mailboxes are used to streamline communication with the Operating Experts Team for submitting new deal information and resolving data discrepancies.

Processes

Overview

The Deal Team is pivotal in managing the full lifecycle of investment opportunities from initial sourcing to closing and transition. The team's processes are built to ensure deal analytics, accurate documentation, and seamless handoffs to other teams, including Asset Management and Operations.

Once a deal reaches the stage of '6 - Current Investment,' it transitions to the Asset Management and Operations teams. Although the Deal Team continues to provide necessary documentation and updates, such as deal closing checklists, DealCloud is no longer the central repository for ongoing deal management in this phase. Future state processes aim to streamline this transition further by leveraging a system like Atom Invest and PIPE for data continuity.

These workflows rely heavily on DealCloud, collaborative inputs from internal and external stakeholders, and structured deliverables to ensure efficiency and alignment.

1. Key Processes

Where Deal Team is the Owner

- **Deal Entry and Pipeline Analytics**

- **Description:** Manually enter and maintain deals in DealCloud, updating metrics and tracking progression through deal stages.
- **Objective:** Ensure comprehensive tracking and timely updates to enable decision-making and reporting.
- **Frequency:** Daily and as needed for deal updates.
- **Tools Used:** DealCloud.
- **Dependencies:** Timely manual updates; accuracy in deal metrics.
- **Key Stakeholders:** Deal Team, Investor Relations.

- **Deal Closing and Handoff**

- **Description:** Prepare and deliver deal closing checklists with critical metrics, including financial terms, sector classifications, and key details for Asset Management and Operations.
- **Objective:** Enable operational readiness and accurate data handoff.
- **Frequency:** Per deal closure.
- **Tools Used:** DealCloud, Excel.
- **Dependencies:** Accurate and timely checklist completion.
- **Key Stakeholders:** Deal Team, Asset Management, Operations.

- **Operating Expert Requests**
 - **Description:** Submit and track requests for Operating Experts (OE) through DealCloud for due diligence or specialized insights.
 - **Objective:** Streamline OE engagement and ensure requests are documented.
 - **Frequency:** As required.
 - **Tools Used:** DealCloud.
 - **Dependencies:** Clear requirements and timely responses from Operating Experts.
 - **Key Stakeholders:** Deal Team, Operating Experts Team.

Where Deal Team is Involved but Not the Owner

- **Investor Relations Reporting Support**
 - **Description:** Provide deal-level data and insights to support pipeline reports and one-page summaries for Investor Relations.
 - **Objective:** Ensure timely and accurate reporting for external communications.
 - **Frequency:** Weekly.
 - **Tools Used:** DealCloud.
 - **Dependencies:** Accurate and up-to-date data entries.
 - **Key Stakeholders:** Deal Team, Investor Relations.

Frameworks and Deliverables

Structured Handoffs

- The Deal Team ensures all relevant data and documentation are included in the deal closing checklist, enabling seamless transitions.

Collaborative Engagements

- Regular interaction with the Operating Experts Team to streamline the OE request process and enhance data quality.

Challenges

- Lack of standardized workflows for reclassification of deals post-handoff disrupts data consistency across teams.
- Manual data entry introduces potential errors and inefficiencies.
- Inconsistent use of templates for bulk updates and checklist creation.
- Limited system training and undefined roles hinder optimal DealCloud usage.
- Discrepancies between checklist data and DealCloud entries create misalignments, as sector classifications and strategy types may be reclassified post-entry.
- Deal team members can change any field in DealCloud, even if mandatory fields were initially filled incorrectly, leading to further inconsistencies.

Process Workflow Overview

1. Deal Lifecycle Management Process

Overview

The Deal Team manages the lifecycle of deals, using DealCloud to log, track, and analyze opportunities from initial entry to closure. This process ensures structured workflows, data accuracy, and seamless handoffs to Asset Management and Operations. Key data captured includes:

- Deal terms (financial metrics, classifications, and strategy types).
- Progression status updates (from sourcing to closure).

The process requires collaboration with multiple teams and accurate data entry in DealCloud, which serves as the primary tool for deal tracking and reporting. Challenges include inconsistent data entry, limited use of bulk upload features, and post-handoff misalignments.

Issue Reported:

- Manual data entry introduces potential for inaccuracies.
- Lack of validation for mandatory fields creates inconsistencies.
- Bulk upload templates remain underutilized.

Linked to Reports:

- Weekly pipeline reports.
- Deal closing summaries for handoff to Asset Management and Operations.

Steps

1. Step 1: Deal Entry

New deals are primarily entered into DealCloud through multiple channels, with Operating Experts' emails being one source, providing details such as broker versus non-broker status, deal name, financial terms, and sector. For deals originating from other sources, such as client communications, the Deal Team manually collects and inputs these details. Mandatory fields for new deals include deal stage, broker type, financial terms, and expected closing dates. Fields can be modified even after the initial entry stage.

Owner: Deal Team.

Tools Used: DealCloud, Email.

Blockers:

- Errors from inconsistent manual entry.
- Lack of system validation for critical fields.

2. Step 2: Operating Expert Requests

Requests for Operating Experts are initiated through DealCloud when expertise is needed for due diligence, deal sourcing, consulting, sector expertise etc. The request form documents the purpose, scope, and expected deliverables for the Operating Expert. This process has transitioned from manual email submissions to DealCloud tracking.

Owner: Deal Team.

Tools Used: DealCloud.

3. Step 3: Deal Closing and Handoff

At the deal process's end, the Deal Team prepares a deal-closing checklist summarizing all critical details such as sector classifications, financial terms, and key contacts. This checklist is shared with Asset Management and Operations to take over the process. Integration with Atom Invest and PIPE is planned for future automation.

Owner: Deal Team.

Tools Used: DealCloud, Excel.

Blockers:

- Manual checklist preparation can lead to inconsistencies and potential errors in deal documentation.

4. Step 4: Handling Data Updates Post-Handoff

Updates to deal classifications, sector adjustments, or other critical data may occur post-handoff. These updates are handled manually in DealCloud to ensure alignment with operational systems.

Owner: Deal Team.

Tools Used: DealCloud, Excel.

Blockers:

- Lack of automation for downstream synchronization.
- Risk of data discrepancies.

Automation and Dependencies

Current workflows rely primarily on manual processes:

- **Manual Processes:** Data entry, OE requests, and checklist preparation remain predominantly manual.
- **Planned Automation:** Integration with Atom Invest and PIPE is intended to streamline reporting, checklist generation, and data validation.

Dependencies:

- Accurate updates to DealCloud fields.
- Coordination with Operating Experts, Asset Management, and Operations teams for data validation.

- Utilization of bulk upload templates for more efficient processing.

Stakeholders:

- Primary Owners: Deal Team.
- Contributors: Asset Management, Operations, Operating Experts Team.

Reports

Overview

The Deal Team generates, validates, and distributes reports to provide stakeholders with comprehensive insights into deal pipeline activity, decision-making processes, and strategic outcomes. These reports cater to internal teams, senior management, and external stakeholders such as investors. Each report type is tailored to specific stakeholder needs and categorized into Weekly Reports, Pipeline Metrics Reports, and Ad-Hoc Reports.

These reports leverage data primarily from DealCloud, supplemented by manual inputs, to ensure clarity, consistency, and alignment with business objectives. The team emphasizes timely validation and structured workflows to address dependencies and challenges associated with data accuracy and integration.

1. Funnel Report

- **General Description**
 - Funnel reports provide a detailed overview of deal progression across six or seven key stages, from discovery to presentation to the Investment Committee (IC). These reports effectively track decisions made over a fixed period of three months. For instance, they analyze how often the IC advances a deal from "situations on radar" to "initial due diligence" and from "initial due diligence" to "negotiations."
 - Key metrics include the number of deals entering the funnel, transitions between stages, and the progression rate at each stage.
 - **Purpose:**
 - Identify points where transactions stall and explore opportunities.
 - Assess the efficiency of deal sourcing and early-stage progression.
 - Highlight areas for improving deal filtering and outreach strategies.
 - **Stakeholders:** Deal Team, Senior Management, and Investment Committee.
 - **Frequency:** Updates are provided quarterly for Deal Team review and stakeholder reporting.

2. Pipeline Report

- **General Description**

- Pipeline reports capture all active deals currently in process at the firm. These reports are circulated weekly on Tuesdays for team meetings, with the output formatted as a PowerPoint presentation.
- Metrics include deal progression rates, the average time spent in each stage, and categorizations based on attributes such as sourcing channel and industry.
- **Purpose:** Provide a comprehensive view of the pipeline's health to support resource allocation and strategic decision-making.
- **Stakeholders:** Deal Team, Investment Committee, and Asset Management.
- **Frequency:** Reports are created every Monday, with final distribution occurring on Tuesdays.

3. Ad-Hoc Reports/Requests

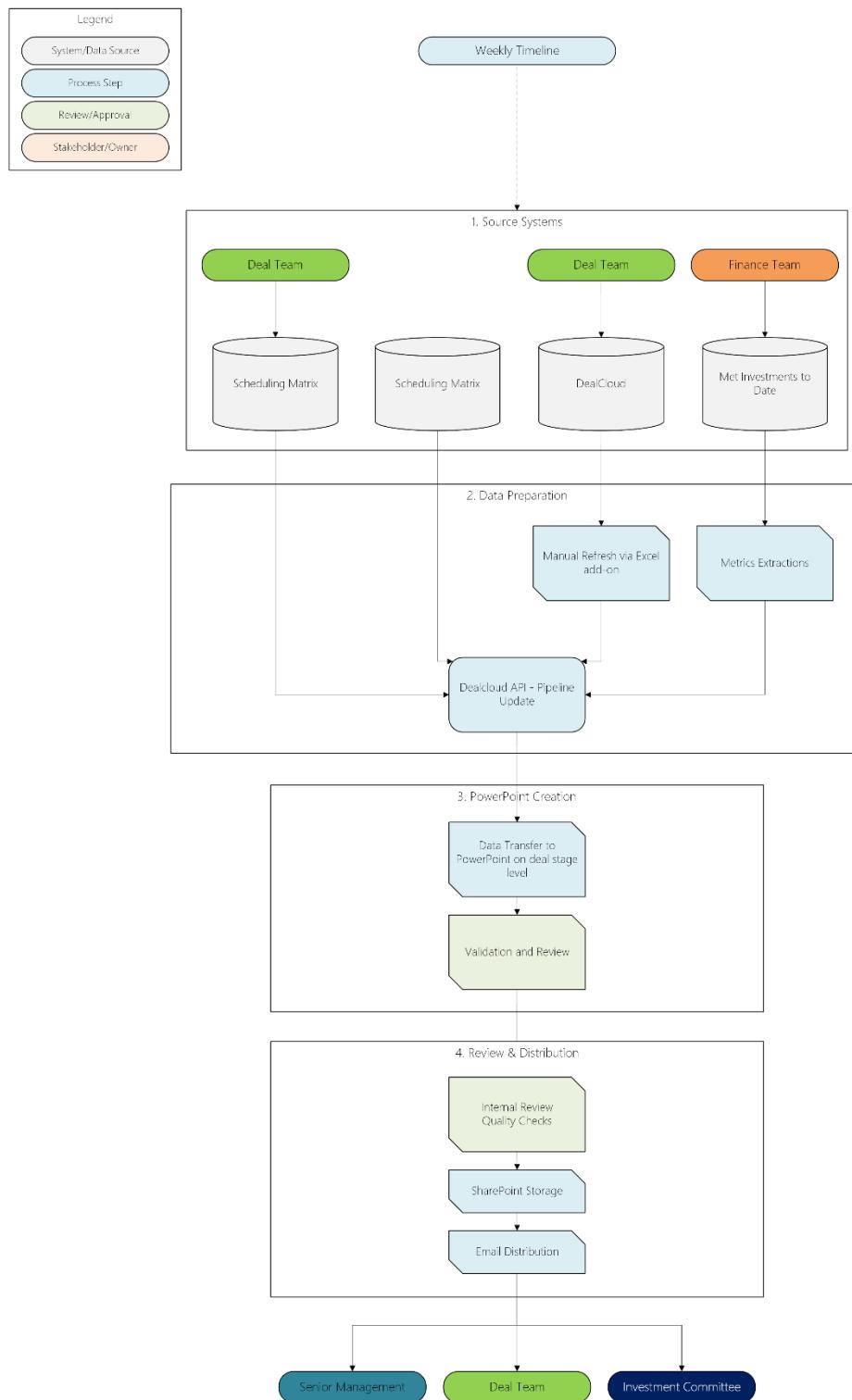
- **General Description**
 - These reports have been created in response to specific stakeholder requests, addressing urgent needs or providing detailed analyses. Examples include summaries of high-priority deals, performance reviews, or exploratory metrics for new strategies.
 - **Purpose:** To address immediate inquiries or provide customized insights based on unique requirements.
 - **Stakeholders:** Investor Relations, Finance Team, and Senior Management.
 - **Frequency:** As required.
- **Workflow**
 - **Data Input Gathering**
 - Extract relevant metrics from DealCloud and supplement with stakeholder-provided inputs.
 - Define the scope based on the urgency and specificity of the request.
 - **Data Transformation**
 - Customize data presentation to match the request scope, including detailed visualizations and summaries.
 - Ensure clarity and actionable insights in the final output.
 - **Validation**
 - Cross-check extracted data with DealCloud and manual entries for accuracy.
 - Align metrics with existing pipeline and performance reports to maintain consistency.
 - **Distribution**
 - Delivered in formats preferred by stakeholders, such as Excel, PDF, or PowerPoint.
 - Shared via email or uploaded to SharePoint for accessibility.

Planned Improvements

- Automating report generation and data validation workflows through DealCloud enhancements.
- Standardizing metrics and validation steps across all report types to reduce inconsistencies.
- Introducing advanced training programs to enhance team proficiency in data accuracy, visualization tools, and automated reporting techniques.

Report Workflow Overview

1. Pipeline Report Creation Process



1. Use Case:

The Pipeline Report is a critical weekly document summarizing all in-process deals at the firm. It provides key metrics to support weekly meetings and decision-making, including:

- Current deal statuses.
- Metrics such as year-to-date capital deployed, co-invested amounts, and deal progression stages.

Stakeholders:

- Deal Team.
- Senior Management.
- Investment Committee (IC) Members.

2. File Storage:

The finalized Pipeline Report is stored in a dedicated SharePoint folder for secure access, updates, and archival purposes.

3. Data Sources:

- **DealCloud:** The primary source of deal metrics, accessed through the file ‘Dealcloud API – Pipeline Update.’ Data is refreshed using an Excel add-on and macro integration.
- **Finance Input: Met Investments to Date vCurrent (Excel Report):** Used for metrics such as year-to-date capital deployed and co-invested amounts. The ‘Invested to Date’ tab is referenced for specific details.
- **Scheduling Matrix:** A manually updated file used to track and summarize deal discussions.
- **Prior Year Pipeline Report:** Referenced to copy metrics such as prior year’s capital deployed and co-invested amounts for comparison.

4. Steps to Create the Pipeline Report:

1. Summary Slide Preparation:

- Extract metrics from ‘Met Investments to Date vCurrent’ and update the PowerPoint summary slide manually.
- Key fields include:
 - Year-to-date capital deployed.
 - Co-invested amounts (current and prior year).
 - Closed deals count and size.
- Copy prior-year metrics from the previous year’s Pipeline Report for comparison.

2. DealCloud Data Refresh:

- Open the ‘Dealcloud API – Pipeline Update’ file.

- Refresh data using the Excel add-on and run the embedded macro ('Macro to Create & Format Pipeline Formula & Hardcode').
- Validate data against the Opportunity Dashboard tab and copy tables into PowerPoint slides.

3. Deal-Specific Slides:

- Filter data for specific deal stages and copy results into respective slides:
 - Deals Killed: Filter the 'Killed Raw Data' tab by the previous week's dates.
 - Negotiations: Filter the 'Outputs' tab by stage '2 – Negotiations' and assigned Met Lead.
 - Initial Diligence: Filter by stage '3 – Due Diligence Normal/New.'
 - Situations on Radar and Backburner: Apply similar filters for these stages.

4. Validation and Review:

- Verify the accuracy of copied metrics and formatting consistency across slides.
- Review with team members to ensure completeness.

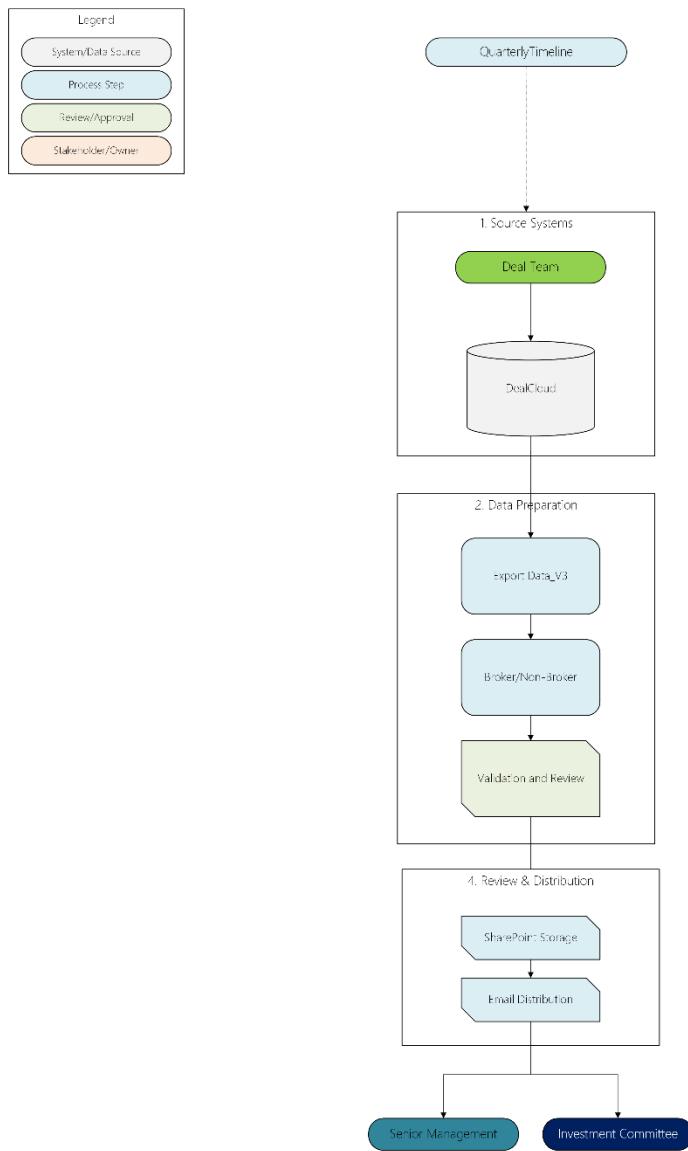
5. Distribution:

- Share the preliminary version via email by noon for stakeholder review.
- Address feedback and finalize the report for official distribution by the end of the day.

5. Challenges:

- Delays in data updates to DealCloud after the Monday 10 AM deadline often require re-creating the report.
- Dependence on a macro with unclear functionality, increasing risks during updates.
- Manual copying and pasting of data introduce opportunities for errors.

2. Deal Funnel Report Creation Process



1. Use Case:

The Deal Funnel Report tracks deal decisioning across six to seven stages, from discovery to Investment Committee (IC) presentation. It measures where transactions are being advanced or stalled to improve hit rates.

Stakeholders:

- Senior Management.
- Deal Team.
- Investment Committee (IC).

2. Data Sources:

- DealCloud: Core data on deal stages, exported from the Deals Object.

3. Steps to Create the Deal Funnel Report:

1. Data Export and Preparation:

- Export deal data from DealCloud.
- Paste raw data into the 'Export Data_v3' tab of the report template.

2. Data Updates:

- Update fields in the 'By Broker/Non-Broker' tab with the latest date and deal details.

3. Validation:

- Ensure accuracy in stage transitions and categorization metrics.
- Cross-check broker/non-broker categorizations for consistency.

4. Distribution:

- Present quarterly to senior management and the Investment Committee.
- Archive on SharePoint for future reference.

5. Challenges:

- Limited frequency of report creation results in inconsistent updates.
- Manual categorization increases risks of inaccuracies.

Pain Points and Challenges

The Deal Team plays a pivotal role in managing deal pipelines and ensuring seamless collaboration between teams. Despite workflows and reliance on DealCloud, several challenges persist across data management, reporting, and coordination processes. These challenges arise from inconsistencies in data practices, dependency on manual workflows, and unclear governance. This section outlines the key pain points and challenges, categorized by process areas, with their description, impact, identified gaps, and clarifying notes.

1. Inconsistent Data Entry Practices in DealCloud due to introduction of new fields

Historical inconsistencies in DealCloud arise from changes in required fields and a lack of backfilling for legacy deals. Therefore, reporting accuracy is compromised, and decision-making is hindered by outdated or incomplete data.

2. Lack of Governance on Deal Re-Creation

Deals killed due to inactivity could be re-created as new entries to reset their pipeline metrics. Even though this might be a desired outcome, this may inflate pipeline metrics and create inconsistencies in reporting and analytics.

3. Manual Reporting Processes

Reports like the Pipeline Report rely on manual data extraction, copying, and pasting. The macro used in the report is undocumented and might be difficult to troubleshoot in case of errors.

4. Misalignment in Field Usage

Fields like broker vs. non-broker are interpreted differently across teams, leading to inconsistent data entry. This may disrupt the reports as there could be cases where deals are misclassified, particularly in the Deal Funnel Report.

5. Lack of Differentiation Between Add-Ons and New Deals

Add-ons are consistently entered as new transactions to maintain visibility in the pipeline. However, this leads to reporting inaccuracies from the inability to distinguish add-ons from new deals. From Operating Experts perspective, it appears that OEs worked on very few add-ons.

6. Collaboration Challenges with Asset Management

The handoff process to Asset Management lacks standardization, especially for add-ons and amendments. As mentioned above, this misalignment results in tracking gaps and inefficiencies.

7. Ad-Hoc Data Requests

Responding to ad-hoc queries often requires manually compiling data from multiple sources, diverting resources from routine tasks. This may cause delays in regular reporting and increased likelihood of errors in ad-hoc analyses.

8. Limited Field Validation

Many fields in DealCloud are optional or lack validation, leading to incomplete or inaccurate entries. Inconsistent data reduces the reliability of analytics and decision-making.

Recommendations

1. Specific Recommendations (pain-points 1 & 8): Data Quality & Field Management

Specific Issues:

- Historical data in DealCloud shows significant inconsistencies due to evolving field requirements and lack of standardization over time. This has resulted in incomplete datasets, particularly for deals predating system updates.
- No retroactive updates for legacy data; insufficient communication on field definitions, creating gaps in historical analysis and reporting capabilities.
- Current field structure allows optional entries for crucial deal information, leading to incomplete data sets that compromise reporting accuracy - No enforcement of mandatory fields across all deal stages.
- Absence of enforced validation rules across different deal stages results in inconsistent data quality and reliability.
- Poor communication regarding field definitions and requirements has led to varying interpretations across teams and inconsistent data entry practices.
- Compromised reporting accuracy due to data gaps affects decision-making capabilities and stakeholder communications.

A. Establish Data Governance Structure

1. Data Steward Role Implementation:

Create a dedicated Data Steward position with clear accountability for maintaining data integrity across all DealCloud modules, including historical corrections. This role should have authority to enforce data standards and implement corrective measures.

- Define comprehensive responsibilities including data quality audits, field usage analysis, coordination with system administrators for validation rules, and oversight of data correction initiatives and validate new fields before they are added to the CRM.
- Establish a structured process for reviewing and approving new field additions, including impact assessment on existing reports and historical data requirements.
- Implement data quality reviews with detailed scorecards for each deal team member's data entry accuracy to ensure existing records are updated to align with new field requirements.
- Develop and maintain a comprehensive data dictionary with clear field definitions, usage guidelines, and example values.
- Create and manage an escalation process for data quality issues, with defined resolution timeframes and accountability measures.

2. Introducing Governance Framework:

- Create detailed field dependency maps showing relationships between different data elements and their impact on reporting.
- Establish stage-specific mandatory field sets with clear progression requirements.
- Implement smart validation rules that consider deal context and relationships.

- Design automated quality checks that run nightly to identify data anomalies and incomplete records.
 - Develop field usage analytics to track utilization patterns and identify optimization opportunities.
 - Create field archival protocols for deprecated fields to maintain system efficiency.
 - Define policies for deal data, including mandatory fields.
 - Specify rules for data corrections, who can make them, and under what circumstances.
3. Standardize Data Entry:
- Create clear definitions for new deals and add-ons. For example:
 - A deal is the primary transaction.
 - An Add-On is any modification to an existing deal that does not create a new one.
 - Use CRM workflows to enforce these definitions:
 - For add-ons, require linking to an existing deal instead of allowing a new deal.
 - Introduce Change Control for New Fields:
 - Require approval for adding new fields:
 - Ensure they align with business needs and reporting requirements.
 - Define how historical data for these fields will be handled.
 - Implement a formal process where proposed fields must:
 1. Specify their purpose.
 2. Include a data population strategy for existing records.

B. Data Quality Enhancement Process

1. Historical Data Cleanup:
 - Conduct comprehensive audit of existing fields, categorizing them by criticality and usage frequency.
 - Develop detailed gap analysis of historical records, prioritizing high-impact missing data.
 - Create a structured backfilling schedule with clear milestones and resource allocation.
 - Implement automated validation tools with specific rules for historical data consistency.
 - Develop progress tracking dashboard for cleanup initiatives.
2. Field Standardization:
 - Implement comprehensive naming conventions covering all field types and categories.
 - Create detailed field dependency documentation showing relationships and impact analysis.
 - Establish clear ownership matrix defining responsibilities for field maintenance and updates.
 - Implement multi-level validation rules considering field relationships and dependencies.
 - Develop training materials specific to field standardization requirements.
 - Establish regular review cycles for field standards and usage patterns.

2. Specific Recommendations (pain-points 2 & 5): Deal Classification & Management

Specific Issues:

- Deal re-creation practices lack standardized governance, leading to inconsistent handling of previously killed deals when they become active again.
- No clear distinction exists between add-on investments and new deals, causing significant tracking and reporting challenges.
- Pipeline metrics are artificially inflated due to improper classification of add-ons as new deals, compromising accuracy of performance metrics.
- Current system structure cannot effectively track relationships between original deals and their add-ons, limiting portfolio analysis capabilities.
- Operating Expert involvement in add-on deals is underreported due to classification issues, affecting engagement metrics.
- Reporting inaccuracies stemming from classification issues affect strategic decision-making and stakeholder communications.

A. Deal Classification Framework

1. Comprehensive Deal Type Definitions:

- Establish detailed classification criteria distinguishing between new deals, add-ons, and amendments:
 - New Deals: First-time investments in distinct entities
 - Add-ons: Additional investments in existing portfolio companies
 - Amendments: Modifications to existing deal terms
- Define policies for deal data, including mandatory fields.
- Specify rules for data corrections, who can make them, and under what circumstances.
- Implement clear guidelines for deal re-activation scenarios:
 - Define specific conditions warranting deal re-creation vs. reactivation
 - Establish timeline thresholds for deal reactivation eligibility
 - Create documentation requirements for reactivated deals
- Develop standardized relationship mapping between deals:
 - For add-ons, require linking to an existing deal instead of allowing a new deal.
 - Parent-child hierarchies for add-on investments
 - Cross-reference capabilities for related entities
 - Historical relationship tracking mechanisms

3. Specific Recommendations (pain-points 3 & 7): Process Automation & Reporting Efficiency

Specific Issues:

- Manual reporting processes heavily rely on data extraction, copying, and pasting, introducing significant risk of human error.
- Current macro usage is undocumented and poorly understood, creating potential system vulnerabilities.
- Ad-hoc data requests require extensive manual compilation from multiple sources, straining team resources.

- No standardized process exists for handling recurring ad-hoc queries, leading to inefficient repetition of work.
- Pipeline Report creation involves multiple manual steps and dependencies, increasing production time and error risk.
- Limited ability to quickly respond to custom reporting requests without significant manual intervention.
- No centralized tools or pre-configured workflows for handling ad-hoc queries.

A. Reporting Process Automation

1. Implementation of Business Intelligence Tools:

- Deploy comprehensive BI solution with following capabilities:
 - Use dedicated Business Intelligence reporting tools (like Power BI) that integrate seamlessly data from multiple sources.
 - These tools can create dashboards and automated presentations, reducing the need for manual transfer and resizing.
 - Scheduled report distribution
- Establish automated data validation protocols:
 - Pre-defined data quality checks and anomaly detection algorithms
 - Reconciliation with source systems and error notification systems
- Create standardized reporting templates:
 - Introduce standard request form for ad-hoc data/reporting.
 - Assess the structure and frequency of the ad-hoc requests and introduce templates for repeated ones.

2. Custom Presentation Automation:

Design PowerPoint templates with predefined slide layouts that automatically adapt to input dimensions and formats.

- Develop automated PowerPoint generation system:
 - Template-driven slide creation
 - Dynamic chart and graph updates
 - Automated formatting and styling
 - Version control management
- Implement smart data visualization:
 - Adaptive chart sizing and formatting
 - Conditional formatting rules
 - Interactive elements for presentations
 - Real-time data refreshes

B. Ad-Hoc Request Management (link to point 1)

1. Introducing Ad-hoc Request Template:

- Create standardized request intake template:
- Develop a template library for common requests:
 - Pre-built query templates

- Standard analysis frameworks
 - Reusable visualization components
 - Automated data extraction routines
- 2. Data Repository Development:
 - Establish centralized data warehouse
 - Implement data mart for reporting

C. Workflow Automation

Utilize data lake/automation solutions to merge data from multiple sources, transform it, and export it into structured reporting or presentation formats.

- 1. Process Automation Implementation:
 - Utilize the Business Intelligence tools along with the data warehouse/automation solutions to streamline data flow system (e.g., scheduled data extractions, automated transformations, quality control checkpoints and exception handling procedures)

4. Specific Recommendations (pain-point 6): Cross-Team Collaboration Framework

Specific Issues:

- Handoff process between Deal Team and Asset Management lacks standardization and clear protocols
- No formalized workflow exists for managing deal transitions, particularly for add-ons and amendments
- Communication gaps result in inconsistent deal tracking post-handoff
- Unclear responsibility boundaries between teams create accountability issues
- Missing validation steps during handoff lead to data quality problems
- Lack of structured knowledge transfer process impacts deal monitoring efficiency
- Insufficient documentation of deal-specific requirements and special conditions during transitions

A. Team Integration Framework

- Define Clear Roles and Responsibilities - Clarify roles and responsibilities between teams (ensure full deal lifecycle is covered):
 - Establish clear organizational structure (e.g., detailed role definitions for each team (Deal Team, Operating Experts, Asset Management, and Investor Relations team), specific responsibility matrices and cross-team coordination protocols)
 - Assign Subject Matter Expert role per team
- Process Standardization:
 - Develop comprehensive handoff protocols (e.g., standardized transition checklists, required documentation templates, or sign-off procedures)

5. Specific Recommendations (pain-point 4): Field Usage Standardization

Specific Issues:

- Inconsistent interpretation of key fields (e.g., broker vs. non-broker) across teams
- Lack of centralized field definitions leading to data inconsistency
- Missing training resources for proper field usage
- Reporting inaccuracies due to field misclassification
- No systematic approach to maintaining field definition documentation
- Absence of field usage monitoring and compliance tracking

A. Field Definition Framework

- Comprehensive Data Dictionary (all data points need to be collected along with a clear definition, where those are stored, etc.):
 - Develop enterprise-wide data dictionary with detailed field definitions and purposes, usage guidelines and examples, business rules and dependencies, impact on reporting and analytics, field ownership assignments etc.)

Investor Relations

Roles and Responsibilities

The Investor Relations (IR) Team is responsible for building and maintaining strong relationships with existing and potential investors. The team ensures timely and accurate communication of financial, operational, and marketing reports, manages investor onboarding, and serves as the primary point of contact for all investor inquiries. By coordinating across departments, the IR team supports fundraising efforts, enhances market visibility, and ensures the efficient delivery of essential documents and updates.

Core Responsibilities:

1. Fundraising and Marketing Strategy

- Market the fund to potential LPs, showcasing its positioning and strategy.
- Develop and communicate a comprehensive fundraising strategy.
- Build and manage relationships with current and potential LPs between fund raisings.
- Create and distribute marketing materials, including presentations, white papers, and other content for investor engagement and reporting purposes.
- Enhance market visibility through marketing initiatives and media relations.
- Work closely with the CIO/Founder and senior team members on analytics to enhance marketing capabilities and highlight investment value.

2. Investor Onboarding

- Maintain and share an investor tracker (e.g., Fund 8 information from Anduin) with stakeholders, including banks, fund admins, and accounting teams.
- Manage investor queries and onboarding processes, ensuring accurate and timely communication.

3. Ongoing Investor Communication

- Draft and distribute Investor/Macro letters and Portfolio decks, supporting marketing efforts.
- Send emails via DealCloud for ad-hoc mass communication, including marketing-related updates.
- Respond to inquiries such as RFPs, RFIs, and general data requests from potential and current investors.

4. Document Management and Distribution

- Ensure investors have access to essential reports via platforms like ShareFile or the DX portal.
- Produce and distribute Fund Quarterly Letters for Fund 6 and newer vehicles, incorporating key marketing messages where appropriate.
- Process all documentation for investor transactions into funds.

5. Data Management and Collaboration

- Collaborate with other departments to obtain most data required for reporting and marketing initiatives, addressing delays caused by incomplete or untimely responses.
- Use LP360 and DealCloud to retrieve data but address challenges with incomplete or misaligned information.
- Maintain important IR-related data (e.g., investors profiles, prospects, co-investor opportunities) in DealCloud.

6. Reporting and Content Creation

- Distribute legal and financial documents through investor portals (e.g., required, and non-required reports).
- Coordinate quarterly investor letters, gathering vetted and quality-controlled data from various teams.
- Respond to LP diligence, reporting, and administrative requests.
- Coordinate, compile, and distribute various marketing materials to investors.

7. Quality Control

- Ensure that data used for investor communications, such as quarterly letters and marketing analytics, is properly vetted and quality-controlled before distribution.
- Highlight the need for a streamlined process to cleanse and sanitize data before it reaches the IR team.

8. Relationship Management

- Hold annual investor meetings and LP Advisory Committee (LPAC) meetings.
- Co-develop, make recommendations for, and communicate the fund's positioning and strategy in alignment with broader marketing goals.

Tools

Primary Tools

1. DealCloud

DealCloud is a key CRM platform for the Investor Relations team, supporting various aspects of investor management and fundraising processes. DealCloud is intended to become the single source of truth for investor information in the future.

Key Functionality:

- **Investor Profiles and History:** Maintains detailed investor profiles, including preferences, historical interactions, meeting notes, and correspondence history. Tracks all documents shared with investors for a complete historical record.
- **Fundraising and Co-investment Pipelines:** Tracks fundraising information and opportunities for co-investments, supporting the management of relationships with existing and potential investors.
- **Contact and Mailing Lists:** Stores and organizes contact information for mass email distributions.
- **Investor Correspondence:** Supports tracking of existing and potential investor communications.

The information above is entered into DealCloud manually by the Investor Relations team.

2. LP 360

LP360 is an essential tool for the Investor Relations (IR) team, enabling them to manage investor data, investor history, track commitments, monitor performance, and respond to ad-hoc queries.

Key Functionality:

- **Investor Profile & Investment History:** The IR team uses LP360 to access and maintain comprehensive investor profiles, including key financial metrics such as commitments, distributions, NAV, P&L, exposure, and performance indicators (e.g., IRR, TVPI). This is crucial for responding to investor queries and providing timely updates.
- **Ongoing Monitoring & Support:** LP360 is used by the IR team for continuous monitoring of investor performance and account updates. It helps track real-time changes in commitments, distributions, NAV, and other critical data that investors need in their ongoing communication with the Metropolitan.
- **Responding to Ad-Hoc Investor Queries:** IR team leverages LP360 to quickly pull investor-specific data, enabling them to respond to ad-hoc queries on investment performance, commitments, and overall portfolio status.

Examples of Specific Use Cases

- **Investor Performance Tracking:** Pre-defined LP360's 'LP360 Account Summary report' is used to track and assess investor performance, including commitments, unfunded commitments, distributions, NAV, P&L, and realized/unrealized values. This data supports conversations and updates with investors.
- **Re-up Tracking:** Using the Re-UP calculator, the IR team sees in which funds investors invested in the past, for example which investors from Fund A have reinvested also in Fund B, aiding future fundraising strategies and deepening investor relationships.
- **Management Fees and Fee Tracking:** LP360 helps the IR team monitor management fees and fee rates for each investor. This ensures accurate tracking and reporting of fees across multiple funds.

Data Entry by IR Team

- **Manual Entry of New Investors:** When new funds are raised, the IR team manually enters new investor information and their commitments into LP360. This includes updating:

- Legal name
- Assignment management
- Wealth manager details
- Investor hierarchy (decision maker, account name, investor name)
- **Investor Hierarchy Mapping:** The IR team ensures LP360 aligns with data from Anduin, mapping out the investor hierarchy. The unique IDs are added later by Finance to avoid misalignments between what IR team enters vs. what fund admin uses in their internal systems.
- **Commitment Updates:** After a deal closes, the IR team updates the commitments in LP360, ensuring all finalized investment data is recorded accordingly.

Secondary Tools

1. Anduin

- Anduin is used for streamlining the investor onboarding process. It supports the fund new subscription process, including collecting necessary documents, and managing KYC (Know Your Customer) and AML (Anti-Money Laundering) procedures.
- The advantage of using Anduin in comparison to the old process is that data is digitalized from the very beginning.
- The tool helps manage new investors, track their subscription processes, and potentially oversee investor transfers.
- Anduin ensures compliance with legal and regulatory requirements by automating key aspects of onboarding, improving both the accuracy and efficiency of the process for new and existing investors.
- There is no direct integration to Metropolitan tools. This FIS admin tool where IR team has access and can export investor data.

2. DX Portal

- The DX Portal is a product of FIS Fund Administration used by the Investor Relations (IR) team to securely store and manage all investor-related documents, financial statements, capital call notices, K-1s, and other essential reports.
- It serves as a centralized platform for document storage and distribution, ensuring that investors have easy and timely access to their necessary reports while maintaining compliance and data security standards.

3. ShareFile

- Cloud-based file-sharing and storage service. used by the Investor Relations (IR) team for storing and distributing key documents related to Funds 5 and below, including PCAPs, Financial Statements, and K-1s.
- It is also utilized to manage co-investment opportunities, strategic relationships, and data rooms, where important materials are uploaded and shared with investors prior to Fund 6. This platform provides a secure and organized way to handle sensitive documents and ensures efficient communication with investors.

4. Shared Drive

- The shared drive serves as the central repository for all Metropolitan's documents, including internal and external materials. It is used to store various documents, reports, and files that are important to the Metropolitan's operations.
- The Investor Relations (IR) folders on the shared drive are restricted to IR team members and relevant senior members of the Metropolitan.

Processes

Overview

The Investor Relations (IR) team plays a pivotal role in capital-raising efforts, serving as the primary point of contact for communication with both active and prospective investors. They coordinate the preparation of documents and content shared with investors and oversee the investor onboarding and due diligence processes. Additionally, the IR team is responsible for compiling all mandatory quarterly deliverables for investors, including K1s, PCAPs, Financial Statements, Quarterly Fund Letters, Investor Macro Letters, and other essential reports.

Process Workflow Overview

1. Capital Raising

Capital raising is one of the critical processes the Investor Relations (IR) team actively contributes to. The IR team plays a vital role in managing communication and relationships with investors, ensuring smooth execution of the capital-raising process. Key responsibilities include:

- **Fundraising Communications:** Developing strategies to introduce the fund's value proposition, maintaining momentum with potential investors, and nurturing relationships.
- **Investor Interaction Management:** Preparing for and supporting meetings, calls, and roadshows, including briefing notes, materials, and follow-ups.
- **Diligence Coordination:** Handling investor due diligence requests, maintaining a diligence library, and managing the data room.
- **Onboarding and Compliance:** Overseeing investor onboarding, subscription documentation, and KYC/AML processes.
- **Tracking and Reporting:** Managing the LP pipeline in the CRM, producing internal progress reports, and tracking closed commitments, fee discounts, and classification updates.
- **Event and Reference Management:** Coordinating fundraising events, managing references for LPs, and analyzing competitor funds to support investor engagement.

The tables below highlight the specific tasks undertaken by the IR team during the fundraising and co-investor processes.

Fundraising:

FUNDRAISING TASK	OWNER	NOTES
FUNDRAISING STRATEGY	CIO	Go-to-market strategy, pre-launch roadmap
PROSPECTING INVESTORS	NA	Research and identify targets
COMMUNICATIONS/OUTREACH	IR	Plan and execute investor communication to introduce the Met strategy and cultivate new relationships, as well as future existing relationships and stay top of mind/maintain fundraising momentum; execute on follow-ups
LP CALLS/MEETINGS	CIO	Schedule and lead or participate in investor intro or update meetings and calls. Staff meeting/call appropriately and set the agenda. Take call/meeting notes and manage thank you notes, follow ups/next steps. Log interaction in CRM.
LP CALLS/MEETINGS PREP	IR	Prepare and distribute investor briefing notes, agendas, meeting materials ahead of fundraising conversations; schedule internal prep session when needed
LP ONSITES / IDD	CIO	
LP ONSITES / ODD (LEGAL COMPLIANCE)	/General Counsel	Manage the onsite program and materials, set the agendas, and conduct internal prep/dry-run sessions. Participate onsite and run the agenda. Execute on follow ups
LP ONSITES / ODD (FINANCE / ADMIN)	Finance	
SUBSCRIPTION MANAGEMENT (CHECKING SUB DOCS ETC.)	IR	Manage Anduin, completion of subscription documents, KYC/AML documents, distribution of fully executed documents to LPs
KYC/AML MANAGEMENT	IR	
CLOSING / DISCOUNT FEE SUMMARY MANAGEMENT	IR	Track closed investors and commitments, originators, RIAs, fee discounts, LP classification. Communicate information to relevant parties (fund administrators, bank partner, outsourced counsel, finance team)
DATA ROOM MANAGEMENT	IR	Maintain data room with up-to-date DD collateral, manage data room users and reports
DILIGENCE REQUESTS	IR	Leverage existing DD library and/or coordinate internal resources across all departments to complete diligence requests. Create presentation/story-telling layer to ensure that the answer addresses the question fully and contextually. Maintain DD Library (Diligence Vault)
LP PIPELINE MANAGEMENT	IR	Set up fund and initial pipeline in CRM, then actively update during fundraise. Conduct weekly pipeline meetings with all internal fundraising stakeholders
ROADSHOWS / EVENTS	IR	Roadshow – coordinate meeting schedule, travel and materials when traveling for fundraising Scout and track fundraising conferences & events (general cycle vs. fundraising) Register for event, coordinate booth/materials, schedule meetings
TPM MANAGEMENT	IR	Current groups: Briarcliffe, David Rich Sunset groups: Swiss Hill, Longstone (Christine Breck and James Elkus) Contract negotiation & management handed off to Julian, investor schedules/lists are IR's only role. Coordination with their prospects
SIDE LETTERS	IR	
ODD/ DD LIBRARY	IR	Gathering initial document request list and coordinating meeting details for any interactions.

POST-MORTEM	IR	Discuss and document postmortem internally and with TPM. Ensure implementation of the preventative measures that have been identified.
INTERNAL FUNDRAISING PROGRESS PRESENTATIONS	IR	Develop fundraising progress report/presentation and provide firmwide update
REFERENCE MANAGEMENT	IR	Strategize and prepare a list of LP and borrower references and get approval from LPs and borrowers before providing contact information to LPs. Maintain a record of consents and who we offered calls to.
COMPETITOR FUND ANALYSIS	IR	Data sourced from paid subscriptions (i.e., pitchbook, prequin) or benchmark reports
FUND MARKETING MATERIALS (OVERVIEW DECK, 2-PAGER, ETC.)	IR	Develop and maintain Fund marketing collateral
INVESTMENT PIPELINE REPORT	IR/DT	
INVESTOR ONBOARDING FOR FUND	IR	
CREDIT FACILITY PROVIDER		
INVESTOR ONBOARDING WITH FUND	IR	
ADMINISTRATOR		

Co-Investor Capital raising:

TASK	OWNER	NOTES
PROSPECTING INVESTORS	IR	
NDA MANAGEMENT	IR	
INVESTOR PIPELINE MANAGEMENT	IR	
MATERIALS (MARKETING/INVESTMENT)	IR	
DATA ROOM MANAGEMENT	IR	
DILIGENCE REQUESTS	IR	
CRM MANAGEMENT	IR	
COMMUNICATIONS/OUTREACH	IR	
LEGAL AGREEMENT/DOCUMENTS	General Counsel	

2. Recurring Investor Relations Activities

The IR team is responsible for a wide range of recurring activities essential to maintaining strong investor relationships and ensuring seamless operational support. These activities can be categorized into the following areas:

- **Investor Communication and Reporting:**
 - Managing recurring investor requests, bespoke queries, and mailing lists.
 - Preparing quarterly fund letters, co-investor reporting, and partner company performance updates.
 - Facilitating communication via macro quarterly letters and social media updates.
- **Meeting and Event Coordination:**
 - Organizing LP annual general meetings (AGMs), LPAC meetings, and preparing materials.
 - Managing strategic partner data rooms, presentations, and diligence requests.

- **Portal and Document Management:**
 - Administering LP portals, including ShareFile and legacy fund systems.
 - Uploading quarterly documents (capital calls, financial statements, K-1s) and managing wire instruction updates, address changes, and other LP requests.
- **Data and Record Maintenance:**
 - Updating trackers for fund interest transfers, LP changes, and custodian agreements.
 - Ensuring accurate records in DealCloud/LP360 and updating FIS email records.
- **Compliance and Regulatory Requirements:**
 - FATCA/CRS reporting for offshore LPs.
 - Managing LP privacy notices and ensuring compliance with regulatory standards.
- **Marketing and Media Relations:**
 - Maintaining marketplace profiles (e.g., Pitchbook, Prequin) and managing press releases.
 - Overseeing Metropolitan's website and strategic communications initiatives.

The table below provides a granular breakdown of the recurring activities and responsibilities carried out by the Investor Relations team.

TASK	OWNER	NOTES
DEALCLOUD/LP360 MANAGEMENT	IR	CRM: Create LP profile and all contacts, assign to distribution lists and log all interactions/activity/follow ups from calls and meetings. Maintain LP and contact profiles. LP360: Add decision makers, investor names and account names after each fund closing. Maintain LP information.
LP RECURRING REQUESTS	IR	refer to Monday.com recurring request list; create stakeholder map for each request
LP BESPOKE REQUESTS	IR	
MAILING LIST MANAGEMENT	IR	Maintain in DealCloud
PARTNER CO. PERFORMANCE COMMUNICATION	IR	
LP ANNUAL GENERAL MEETING & MATERIALS		Event
LPAC MEETINGS & MATERIALS	General Counsel	
OUTSTANDING CAPITAL CALLS	IR	
QUARTERLY PCAP UPLOAD TO SHARE FILE	IR	for legacy funds; fund accounting works with FIS for funds 6 and up
QUARTERLY FS UPLOAD TO SHARE FILE	IR	for legacy funds; fund accounting works with FIS for funds 6 and up
K1 UPLOAD TO SHARE FILE (LPS & GPS)	IR	for legacy funds and GPs; fund accounting works with FIS for funds 6 and up
GP TAX DISTRIBUTION NOTICES	IR	Populating notices and uploading to DX portal
WIRE INSTRUCTION UPDATES	IR	
ADDRESS CHANGE REQUESTS	IR	
LP CHANGES TRACKER (WIRE/ADDRESS/NAME CHANGES)	IR	
PORTAL ACCESS REQUESTS (DX/SUPPORT FILE)	IR	
FUND INTEREST TRANSFERS	IR	
FUND INTEREST TRANSFER TRACKER	IR	
CUSTODIAN AGREEMENTS (SCHWAB, FIDELITY)	IR	Upon LP Request
LP CASH FLOW PROJECTIONS	N/A	Upon CIO's requests. IR sends out

LP PORTAL MANAGEMENT FOR LEGACY FUNDS (VS, IVS, IIIS, OTHER ENTITIES) / SHARE FILE ADMINISTRATION	IR	Adding new investor folders for new LPs (after assignments)
FIS BOUNCED EMAILS FOLLOW UP AND RECORD UPDATE	IR	
WEBSITE MAINTENANCE	IR	
LP PRIVACY NOTICE	General Counsel	check with compliance when updates are necessary
FATCA/CRS REPORTING FOR OFFSHORE LPS	N/A	
SOCIAL MEDIA MAINTENANCE	IR	
PRESS RELEASES / MEDIA RELATIONS	N/A	
MARKETPLACE PROFILES (PITCHBOOK, PREQIN, PDI/PEI, ETC.)	CIO Office	
STRATEGIC PARTNER DATA ROOM MANAGEMENT	CIO Office	
STRATEGIC PARTNER PRESENTATIONS	CIO Office	
STRATEGIC PARTNER DILIGENCE REQUESTS	CIO Office	

3. Content Development and Management

The Investor Relations team plays a pivotal role in creating, maintaining, and tailoring a wide array of materials and content that support fundraising, investor communication, and due diligence processes. This includes the preparation of standardized documents, bespoke presentations, and performance reports, ensuring that all materials are accurate, up-to-date, and aligned with the Metropolitan's strategic messaging. These tasks facilitate effective communication with existing and prospective investors, strategic partners, and other stakeholders.

TASK	OWNER	NOTES
FUND QUARTERLY LETTERS	IR	
CO-INVESTOR REPORTING	IR	
MACRO Q LETTER	CIO	
OE MACRO Q LETTER	George	
DEAL ECOSYSTEM MACRO Q LETTER	George	
TEAM BIOS AND COUNTS	IR	
EMPLOYEE TURNOVER	IR	
DDQ	IR	
PORTFOLIO REPORTS (VIS, VIIS, VIIIS)	IR	
FIRM STATS (INTERNAL ONLY - TALKING PTS)	CIO Office	
MET TEAR SHEET FOR PROSPECTIVE BORROWERS	IR	
OE TEAR SHEET	IR	
PLATFORM PRESENTATION (YIELCO DECK)	IR	
TRACK RECORD	Finance	
GROSS TO NET WALK	Finance	
EQUITY KICKER ATTRIBUTION	Finance	

DEAL CASE STUDIES	CIO
BESPOKE PRESENTATIONS	IR
ODD PRESENTATION	IR
ADDENDUM	IR

4. LP Communication Support

Investor Relations (IR) team supports and helps to maintain strong relationships with Limited Partners (LPs). The IR team's involvement underscores its integral contribution to communication strategy, execution, and logistical support.

The table below provides a granular view of the LPs communication activities supported by the IR team:

TASK	OWNER	NOTES
COMMUNICATION STRATEGY	IR	
SPECIAL DISTRIBUTIONS	IR	
FUND UPDATE	Investment Committee	
PERFORMANCE UPDATE	Investment Committee	
FIRM UPDATE	Investment Committee	
SCHEDULING LP UPDATE CALLS	Office Manager	
FUND EXTENSIONS	IR	

Reports

Overview

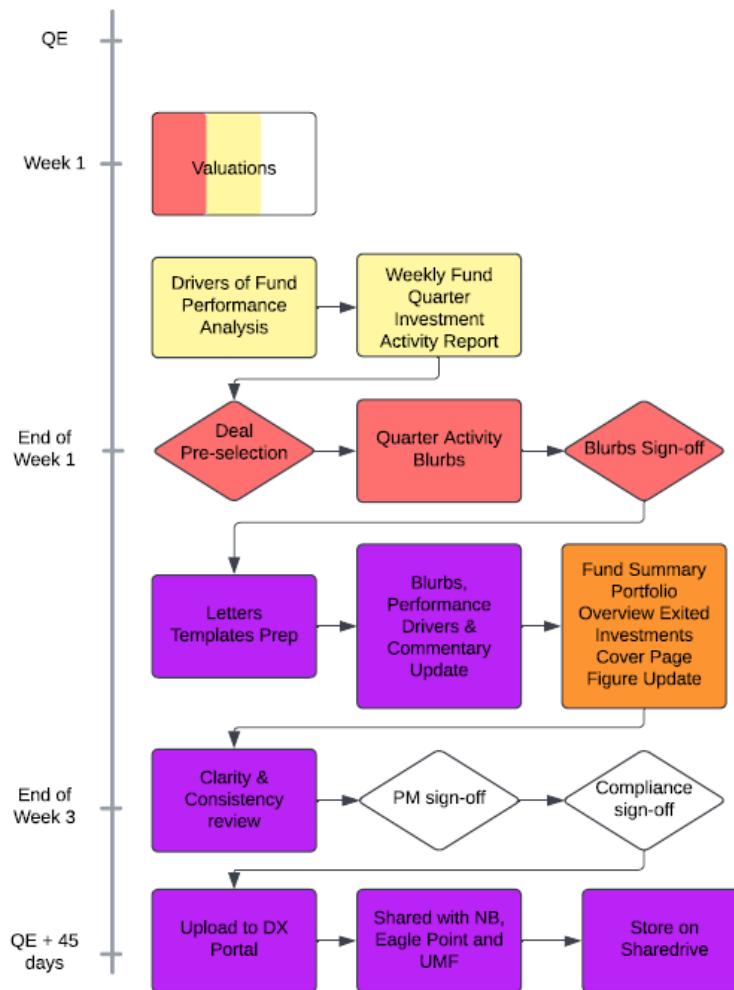
The IR team's primary deliverables, for which they coordinate the process and define the content through the creation of templates, include the Quarterly Fund Letters, Fund Portfolio Deck, and Active Deal Pipeline reports. These materials are collaborative efforts involving Finance, Operations, Asset Management, and the Deal Team, with Investor Relations taking the lead in coordination.

Report Workflow Overview

1. Fund Quarterly Letters



Quarterly Fund Letter Process Flow



1. Use Case:

The Fund Quarterly Letters are a key communication tool for Limited Partners (LPs), offering updates and performance summaries of the funds since inception. These letters provide insights into:

- Key performance metrics such as IRR, distributions, number of investments, and recycling multiples.
- Information on new deals, upsizes, amendments, noteworthy deal developments, or repayments.
- A chart detailing committed capital, distributions, debt instruments, and equity instruments.

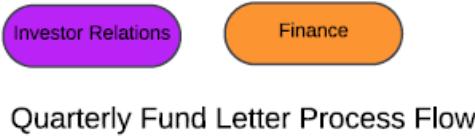
These letters are prepared within a four-week window following the valuation meeting and distributed within 45 days (about 1 and a half months) after the quarter's end.

2. Report Preparation:

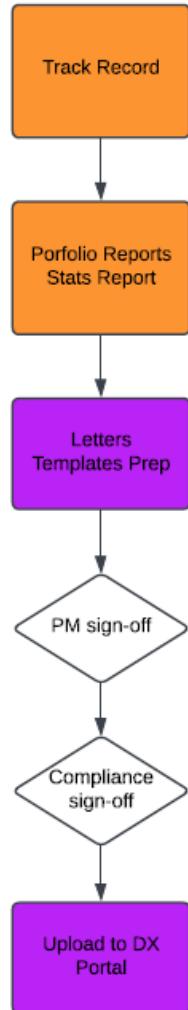
The preparation process follows a structured workflow:

- **Operations Team Contributions:**
 - Perform Drivers of Fund Performance Analysis.
 - Produce the Weekly Fund Quarter Investment Activity Report with actionable data for the Asset Management and Investor Relations (IR) teams.
- **Initial Data Compilation:**
 - As the quarter ends, Asset Management begins building a list of deals to be discussed.
- **Deal Selection Process:**
 - After the valuation meeting, the team refines the selection through a Deal Selection Call.
 - Pre-selected deals meet specific criteria:
 - All new deals
 - Upsizes
 - Extensions
 - Amendments
 - Mark changes > 10%
 - Out-of-ordinary course activities
 - Updates on challenged deals
 - Exits or material refinancing/repayment
- **Activity Descriptions:**
 - Asset Management drafts quarterly activity blurbs using standard formulas during the first week.
 - Portfolio Manager reviews and approves the blurbs.
- **Template Preparation and Integration:**
 - IR prepares templates and incorporates approved blurbs into relevant fund letters.
 - IR identifies the primary performance drivers for the quarter and adds short fund-related commentary for each vehicle.
- **Graph and Table Updates:**
 - FP&A updates fund summary graphs, portfolio overview tables, exited investments tables, and cover page investment figures in the templates.
- **Review and Finalization:**
 - IR reviews templates for format, clarity, and consistency.
 - The Portfolio Manager signs off on the letters.
 - Compliance performs a final review and approval.
- **Distribution:**
 - Letters are shared on the investor DX portal and archived on the internal S-drive.

2. Fund Portfolio Report



Quarterly Fund Letter Process Flow



1. Use Case:

Portfolio reports serve as a comprehensive communication tool for current and prospective investors. They provide a detailed overview of the portfolio's performance and offer insights into individual deal-level details. The team begins preparing these reports once standard quarterly deliverables (such as PCAPs, Financial Statements, and Quarterly Letters) are ready.

- **Report Contents**
 - **Fund-level Performance Summary:** This page includes key statistics such as Fund Size, Capital Invested, Total Value, status, total investments, exits, LTV, equity kickers, sector diversification, and other relevant fund details.
 - **Individual Deal One-Pagers:** Detailed summaries for each individual deal within the portfolio.
- **Inputs:** The Investor Relations (IR) Team manages the Fund Portfolio templates. They update these templates using data from the Portfolio Report Stats file, which is provided by the FP&A Team. The data for the report is extracted from the Track Record file.

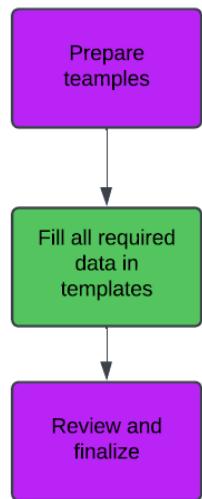
2. Challenges

- **Source and Ownership of Track Record Data:** There is uncertainty about where the numbers in the Track Record file originate and who is responsible for the calculations. For instance, in the case of the Loan-to-Value (LTV) ratio, it is unclear if someone in Asset Management calculated it or if it was derived from another source. There is also a lack of consistency in how LTV is reported, as noted by Julian.
- **Fund-level Data Relevance:** The fund-level summary, particularly items like Net IRR, may not be truly relevant for many investors. This is because investors enter the fund at various times, commit different amounts of capital, and pay varying fees. It is suggested that LP360 could be used to implement a more detailed KPI calculation across various levels, such as by fee-paying class, to provide a clearer, more relevant performance metric. The first step would be to build a lexicon to define such terms and metrics.
- **Comparison Between Underwritten and Exited Performance:** The team would like to include a comparison of performance based on initial underwriting versus actual exit. Currently, this comparison is not updated in the one-pagers, despite its importance. This is particularly relevant in cases where there have been upsizes or amendments to the deals and tracking this information can provide deeper insights into the portfolio's performance.

3. Active deal Pipeline Summary:



Active Deal Pipeline



1. Use Case:

The Active Deal Pipeline report is designed to engage active or prospective investors by providing detailed insights into new deals, focusing specifically on those in due diligence or negotiation stages. Its primary purpose is to attract investor interest by highlighting the characteristics and potential of these deals. Additionally, this report serves a critical internal role for the CIO, offering a valuable resource for discussions with investors and facilitating informed conversations about current investment opportunities.

- **Report Contents:**

- **Active pipeline summary:** Summary details for all deals in due diligence stage as well as deals which will enter this stage soon. Summary page is later shared with Investors. Information available:
 - Deal Name and description.
 - Target closing date
 - Sector
 - Firmwide commitment
 - Maturity and LTV
 - Target Net & Gross IRR
 - Equity kickers
 - Collateral Type
 - Source

- Status (due diligence / negotiations)
- One pager on each deal to provide investors background on the deal itself, underwriting thesis, target returns etc. One pager is only shared internally, these are not shared with investors but used to support discussions with them. Only once deals are closed, one pager is shared externally.
- **Inputs:**
 - IR owns the templates for the report and shares it with the Deal team which will fill in all the information required across the template. Deal team updates pipeline weekly.

2. Challenges:

- The process of creating One Pagers is very time consuming since it requires several reviews, what slows down capital and fundraising processes. It also includes the approval processes before these are shared and required periodicity weekly is challenging.

Pain Points and Challenges

1. Usability Challenges with LP360

- The system's technical nature limits self-sufficiency among team members without proper training, forcing reliance on operational power users to query data or retrieve necessary information.

2. Absent single source of truth for Investor data

- Investor-related information is scattered across LP360, DealCloud, and other platforms. This fragmentation requires the team to depend on data inputs from Deal, Asset Management, Operations, and Finance teams, making it difficult to obtain consistent and accurate records.

3. Lack of Standardized KPIs and Data Lexicon

- Repeated inconsistencies and inaccuracies in data provided by other departments have been identified. Creating a standardized KPI framework and comprehensive data lexicon would enhance data reliability and improve overall trust in the information. Team relies on data provided by other teams without clear understanding how these data points are obtained.

4. Dependence on DealCloud Support for Customizations

- Development of the new functionalities or new customized views requires support from DealCloud Support team, what slowing down workflows and reducing operational flexibility.

5. Data Mismatches Between Systems

- Investor data, such as hierarchy and commitments, is manually entered into LP360 by the IR team as well as by fund administrators in their own system. When these datasets are later merged into LP360, mismatches may arise, requiring the finance team to handle manual mappings.

6. Limited Timeframe for Preparing Quarterly Fund Letters

- Quarterly Fund Letters must be delivered within 45 days (about 1 and a half months) after the quarter ends, but preparation cannot begin until the valuation process concludes. This constraint leaves only about four weeks for letter finalization.

7. Involvement of Multiple Teams in Fund Letter Preparation

- Preparing Quarterly Fund Letters involves extensive collaboration across multiple teams and individuals, requiring numerous communications, review cycles, and calls. The process is currently undergoing standardization efforts to improve efficiency.

8. Maintaining Consistency Across Fund Letters

- Investments allocated to multiple funds with varying materiality levels require the preparation of aligned letters for different fund vintages. Ensuring consistency across these letters adds considerable time to the process.

9. Repetitive Manual Updates to Standard Materials

- Updating PowerPoint templates and one-pagers for standard reports is labor-intensive and error-prone. Another time-consuming task involves preparing tax distribution letters, where only a few figures from finance need to be manually added to templates.

10. Outdated Deal One-Pagers in Fund Portfolio Decks

- Deal one-pagers are not updated over time to reflect actual investment performance, reducing their usefulness for new investors who are more interested in exit results than underwriting details.

11. High Effort Required for Active Deal Pipeline One-Pagers

- One-pagers for active deals in the pipeline are manually created and require frequent updates and approvals from the Portfolio Manager and Compliance. Although critical for investor discussions, these documents are highly time-consuming and must be produced weekly, especially for deals in due diligence or negotiation.

Recommendations

Specific Recommendations (pain-point 1 ,3, 4 & 5) Field Usage and KPI Standardization

Specific Issues:

- Challenges with systems (LP360 and DealCloud)
- Lack of centralized field definitions leading to data inconsistency
- Inconsistent interpretation of key fields (e.g., broker vs. non-broker) across teams
- Missing training resources for proper field usage
- Reporting inaccuracies due to field misclassification
- No systematic approach to maintaining field definition documentation
- Absence of field usage monitoring and compliance tracking
- Lack of centralized KPI/metric definitions

A. Field and KPI Definition Framework

- Comprehensive Data and KPI Dictionaries (all data points need to be collected along with a clear definition, where those are stored, etc.):
 - Develop company-wide data dictionary with detailed field definitions and purposes, usage guidelines and examples, business rules and dependencies, impact on reporting and analytics, field ownership assignments etc.)
 - Create field relationship mapping:
 - Map dependencies between fields
 - Impact analysis documentation
 - Cross-reference guides
 - Validation rule documentation
 - Create KPI logic documentation
 - Document KPI logic along with description, usage, fields, and calculations
 - Assign KPI owners (department level)
- Field Usage Governance:
 - Establish a governance structure:
 - System and field ownership hierarchy
 - Change control board for system enhancements (introduction of new fields, change of existing, etc.)
 - Review and approval workflows
 - Compliance monitoring system
 - Implement usage monitoring:
 - Regular audit procedures
 - Usage pattern analysis
 - Error rate tracking
 - Correction protocols

B. Introduction of Business Intelligence tools (example: PowerBI)

- Create comprehensive Business Intelligence platform:

- Create standard dashboards covering LP 360 and DealCloud that are user-friendly and allow data extraction
 - Build standardized dashboards covering systems across the organization (DealCloud, LP360, etc.), ensuring consistency and accessibility.
 - Design user-friendly dashboards tailored to different audiences, making it easier for stakeholders to understand and interact with data.
 - Enable data extraction for users at various levels, empowering teams to perform ad-hoc analyses or further integrate with other systems.
- Facilitate Real-Time Decision Making with Automated Data Inputs:
 - Automated data refreshes and updates directly from operational systems, reducing manual errors and delays.
 - Provide near-real-time insights to enable prompt decision-making and faster response times.
 - Reduce reliance on manual processes and spreadsheets by connecting BI tools directly to live databases and systems.

C. Data Governance

- Improve Data Accuracy and Consistency:
 - Centralize data inputs from various sources, ensuring a single source of truth across the organization.
 - Eliminate inconsistencies by automating the integration and transformation of data, enforcing uniform metrics and KPIs.

Specific Recommendations (pain-points 2, 3, 9, 10 & 11): Marketing Materials and Report Automation

Specific Issues:

- Manual update process for portfolio performance metrics
- Multiple versions of tear sheets requiring manual updates (identified "9 versions" that need updating quarterly)
- Delayed marketing material updates due to dependency on track record finalization
- Manual copying of data between fund performance deck and DDQ
- Complex review process requiring multiple approvals (Portfolio Manager, Compliance)
- Inconsistent timing of data availability between teams
- Time-consuming creation of one-pagers for pipeline deals
- Manual population of GP tax distribution notices

A. Marketing Material and Standard Reports Production Enhancement

1. Create Single Source of Truth:
 - Create centralized data repository for standard reports and marketing materials (through data warehouse or project specific automations):
 - Build single source for common metrics used across materials
 - Implement automated data population from various sources (DealCloud, PIPE, LP360, etc.)

- Enable version control across different document types
- Develop automated template management:
 - Create master templates for the different reports and materials with variable fields
 - Enable automated updates across all versions
 - Utilize the established data lexicon and the KPI catalog to ensure consistency and accuracy
- 2. Pipeline Reporting Enhancement:
 - Streamline deal pipeline reporting:
 - Create automated data flow from Deal Team to IR materials
 - Enable selective sharing of deal information
 - Build separate internal/external versions automatically
 - Implement automated compliance review flags

B. Document Workflow Automation

- 1. GP Tax Distribution Process:
 - Automate distribution notice creation:
 - Create template system with standardized language
 - Enable automated data population from FP&A
 - Build bulk generation capability for multiple funds
 - Implement automated portal upload process
 - Enhance processing workflow:
 - Create automated validation of distribution amounts
 - Enable batch processing of notices
 - Build automated audit trail
 - Implement notification system
- 2. Fund Marketing Material Coordination:
 - Develop synchronized update process:
 - Create dependencies map between materials
 - Enable cascade updates across related documents
 - Build automated review workflows
 - Implement version control system

Specific Recommendations (pain-points 6, 7 & 8): Fund Quarterly Letter Process

Specific Issues:

- Complex coordination required between multiple teams
- 45-day deadline constraint with valuation dependency
- Manual compilation of deal information across funds
- Inconsistent blurb creation process from Asset Management
- Manual reuse of content across multiple fund letters
- Time-consuming review and approval process

A. Letter Production Enhancement

1. Content Collection Automation:

- Implement structured data collection:
 - Create standardized templates for deal updates
 - Build automated deal selection criteria tracking
 - Implement reusable content library
- Develop automated workflow system:
 - Create sequential task management
 - Enable parallel processing where possible
 - Build automated reminder system
 - Track completion status

Specific Recommendations (pain-point 9 & 10): Co-Investment Process and Performance Reporting

Specific Issues:

- Manual co-investment reporting process causing data quality issues
- Complex participation structures requiring manual calculations
- Multiple co-investors in same deals requiring separate reporting (e.g., West Cork)
- Lack of standardization in co-investment performance metrics
- Manual process for creating co-investor one-pagers
- No automated tracking of co-investment opportunities
- Different timing of co-investment data availability versus fund reporting
- Expected increase in co-investment activity requiring more robust processes

A. Co-Investment Process Enhancement

1. Co-Investment Data Management:
 - Create unified co-investment tracking system:
 - Build standardized participation tracking
 - Enable automated calculation of ownership percentages
 - Implement consistent performance metric calculations
 - Create automated reconciliation with fund positions
 - Develop automated reporting framework:
 - Build templated co-investment reports
 - Enable automated data population
 - Create standardized performance calculations
 - Implement data validation rules
2. Co-Investment Pipeline Management:
 - Implement structured tracking system:
 - Create standardized opportunity tracking
 - Enable automated status updates
 - Build investor interest tracking
 - Implement automated notification system

Operations

Roles and Responsibilities

The Operations Team at Metropolitan manages the investment models for closed loans, enabling invoicing of borrowers, tracking delinquent payments, and calculating borrower-specific performance metrics. The team plays a critical role in maintaining the PIPE reporting tool and addressing data and reporting needs across the organization. Their involvement begins when a deal is approved or about to be approved by the Investment Committee (IC) and extends through post-closing activities, including transitioning oversight responsibilities to the Asset Management team.

Core Responsibilities:

1. Deal Closing and Onboarding

- Engage with the Deal Team when a deal is about to pass IC or is nearing funding.
- Review preliminary checklists containing data fields such as economics related to the deal, sector, pillar, and ownership.
- Parallel review credit agreements and other relevant documents with the Deal Team, ensuring conformity with standards and addressing economic concerns.
- Populate and create investment models using the finalized deal-closing checklist.

2. Investment Model Management

- Maintain investment models as the golden source for financial data related to closed loans.
- Track borrower-specific data, including principal, interest, and fee schedules, serving as the operational general ledger.
- Update models daily based on cash movements (cash received or sent).

3. Tracking and Reporting for Borrower Payments

- Monitor borrower-related financial activities, such as payments and delinquent accounts, to ensure accurate financial tracking.
- Prepare data for borrower invoicing, including creating PDF-based invoices linked to investment models.
- Support reconciliation processes by identifying discrepancies in payments and tracking overdue accounts.

4. Reporting

- **Cash Activity Report:** Generated weekly by refreshing the template in PIPE and involves splitting data by Asset Manager. Post-processing steps ensure the correct presentation of data across tabs for Received, Differences, and Not Received items.
- **Delinquency Report:** Prepared weekly to track deferred or delinquent fees globally. The report includes Interest & Fees (Deal), Cover-Deal, Cover Funds, and Expense Detail tabs.

- **Internal Transfer Log:** Tracks payments received for funds and redistributes them based on fund participation in the Investment Model. Amendment and monitoring fees are tracked separately.

5. Data Maintenance and Queries

- Address data requests from various teams, ensuring accuracy in the PIPE reporting tool.
- Maintain and improve data ingestion processes, including nightly automated refreshes and manual adjustments.

Organizational Structure and Collaboration

The Operations Team's effectiveness is deeply rooted in its interdepartmental relationships, ensuring seamless coordination across various functions to manage data, reporting, and investment oversight.

• Interaction Points and Dependencies:

1. Deal Team:

- **Pre-Closing Engagement:** The Operations Team becomes involved when a deal is about to pass IC or within a week of funding. The team receives a preliminary checklist containing details deal economics as well as other details - sector, pillar, etc., which overlaps with data fields in DealCloud.
- **Parallel Review of Agreements:** Collaborates with the Deal Team to review credit agreements and economic terms, ensuring compliance with internal standards and addressing any economic-related questions.
- **Deal Handoff:** Receives the finalized deal-closing checklist post-closing, which includes essential data points to populate and create investment models.

2. Asset Management Team:

- **Post-Closing Transition:** Collaborates on transitioning deal oversight responsibilities to the Asset Management team.
- **Delinquency Tracking:** Shares the weekly Delinquency Report, which includes deferred or unpaid fees, to aid in action planning.
- **Cash Projections:** Participates in weekly cash projection calls to ensure alignment on expected cash movements and address discrepancies in cash flow reports.

3. FP&A and Fund Accounting:

- **Expense Management:** Tracks legal expenses provided to Operations bi-weekly from QuickBooks, distinguishing between paid and unpaid invoices. These are further classified based on the decision to bill borrowers or absorb the costs.

4. IT (OEHM):

- Investment Models and PIPE Data Automation:
- The data ingestion process of the investment models into PIPE was developed in collaboration with the OEHM team.

PIPE is fully managed by the Operations team. OEHM team will provide support to the Operations for any required changes to PIPE logic or set up.

Collaboration Framework

1. **Weekly and Ad Hoc Meetings:**
 - Regularly meets with Asset Management for cash projection updates and delinquency tracking.
 - Engages in ad hoc discussions with the Deal Team to resolve economic queries and verify deal terms.
 - Regular meetings with FIS (fund admin for funds VIIs-VIIIs)
2. **Data Sharing and Reporting:**
 - Prepares reports like the Cash Activity Report and Delinquency Report by aggregating data from investment models, QuickBooks, and Transfer Logs.
 - Shares fund-level and borrower-specific performance metrics with relevant teams to support their operational needs.
3. **Manual Processes and Knowledge Transfer:**
 - Certain processes, such as data entry for delinquency tracking and fund allocation, rely heavily on individual expertise. Collaboration with other teams helps reduce manual errors and aligns on shared responsibilities.
4. **System Dependencies:**
 - PIPE serves as a critical data repository, aggregating information from investment models. Any potential challenges in PIPE workflows might impact the Operations team's ability to deliver accurate data to Asset Management and Finance.

Tools

1. PIPE

System Overview and Core Functions

The Operations team is responsible for maintaining all information in the PIPE. PIPE serves as the primary interface for the team when viewing information and aggregates all investment model information. The system comprehensively combines multiple data types: investment model data, attribute-level data, fund attributes, and geographic attributes. A sophisticated layer of business logic is then applied on top of this aggregated data, incorporating various measures such as IRRs and unrealized values. The system manages 50-60 different metrics, all of which can be consumed or transformed into Excel reports. Through integration with Microsoft Fabric, this data is also available for Power BI dashboard creation.

Jason performs ongoing quality control, conducting sanity checks of generated reports against the models. The team maintains reference tables at both the investment deal and fund level within PIPE, containing critical data that would not typically be found in an investment general ledger, including asset manager assignments, deal team owner designations, LTV at closing, and expected IRR metrics.

Data Delivery and Access

Two main delivery mechanisms are currently employed:

- Pivot Tables, which include:
 - "Canned" report pivots that serve as fixed reports
 - Sandbox-type pivots using lambda commands for information retrieval

These views will enable end users to generate reports like running one from systems like Geneva.

[Investment Model Management and Structure](#)

Investment models, which predate the PIPE system itself, are based on Excel templates with each deal maintaining its individual model. These models serve as the main source of information that PIPE ingests. Importantly, editing rights are exclusively restricted to the Operations team - no other teams or individuals can modify these models.

The general information is strategically positioned at the top section of the investment models, with certain fields existing in the data tables and master data for instruments and deals. The models employ a hybrid structure that tracks actual loan activity while maintaining projection capabilities, ensuring that projections do not impact actual figures. This allows for tracking both historical data and asset management team projections.

[Deal Closure and Model Setup Process](#)

When a deal closes, the Operations team receives a deal closing checklist from the deal team. This initiates the process of creating the investment model template with crucial information, the following fields are provided as examples, with many additional fields included:

- Initial funding date
- Original Issue Discount (OID)
- Interest rate schedule
- Floating rate (when applicable)
- Accrual basis
- Commitment details
- Closing date

After receiving the deal closure checklist, the team verifies its conformity. In approximately 90% of cases, they conduct a call with the asset management team post-model setup to verify accurate entry of all economics. This includes incorporating projections for amortization schedules and future payments, ensuring alignment from day one and resolving any outstanding questions.

[Operational Processes and Tracking](#)

The team must maintain dual tracking at both the agency and fund levels, as they serve as agents for all deals. Invoices are linked to the global tab (their agency account) and are updated monthly with PDF generation for borrower distribution. The invoice review process is iterative, involving:

- Monthly review of numbers
- Verification that period activity aligns with books and records
- Confirmation of payment logging

- Hard coding of all received payments and activities

Payment reflection involves hard coding the exact amount and receipt date in the investment model. The same methodology applies to fundings, where information is populated with the specific date and relevant header details.

Instrument Management and System Integration

Most deals involve a minimum of two instruments - typically a loan and an equity component - with potential for multiple tranches during upsizes and amendments. For each instrument, the team creates a specific field or line in the instrument reference data to establish its relationship to the existing deal.

PIPE integration is managed through specific model directory instructions and appropriate model naming conventions, which determine how PIPE identifies and corresponds to each model. When payments are received and logged, the model is saved, and recent activity appears outstanding before Jason facilitates the transfer to Microsoft Fabric.

Fund Administrator Integration

The naming conventions between PIPE and the Fund Administrator show some variations, though certain names remain consistent. A dedicated field in PIPE's instrument master table manages these mapping relationships. Notable system differences exist, such as the Fund Administrator's requirement to create unfunded security tracking, which differs from Metropolitan's approach.

Processes

Overview

The Operations Team serves as a critical backbone for the organization's investment and loan management infrastructure, orchestrating complex financial processes across multiple functions. This team maintains the integrity of investment data, ensures regulatory compliance, and facilitates seamless cash flow management while serving as a crucial link between various stakeholders including borrowers, fund administrators, and internal departments.

The team's scope encompasses the full lifecycle of loan management, from initial security setup through ongoing administration and compliance monitoring. Their responsibilities require both tactical execution of daily operations and strategic oversight of critical processes that directly impact the organization's financial health and regulatory standing.

1. Key Processes

1. Loan Agency Management

At the heart of the Operations Team's responsibilities lies the comprehensive loan agency management function. The team serves as the primary administrator for all loan-related activities, managing a sophisticated system of cash movements and documentation that ensures smooth operation of the investment portfolio.

Key responsibilities in this area include:

- Managing borrower invoicing processes across the entire loan portfolio
- Orchestrating funding setups and distributions through the agency account structure
- Handling complex cross-fund investment deals that require precise cash management

The team's expertise particularly shines in their handling of multi-fund investments. In these scenarios, they perform a critical aggregation function, consolidating cash within the agency account before executing wire transfers to borrowers. This process operates bidirectionally, as they are also:

- Receive and process principal and interest payments from borrowers
- Manage the distribution of these funds from the agency account to the appropriate partnerships
- Ensure accurate tracking and documentation of all cash movements

2. Security Master and Investment Model Management

The foundation of the team's data integrity efforts centers on the meticulous maintenance of investment models and the Security Master system. This critical infrastructure is embedded in the investment models and the PIPE data framework, serving as the cornerstone of investment data management.

Upon deal closure or initial identification, the team undertakes the crucial task of creating and maintaining investment models, which serve as the authoritative source for the investment General Ledger. This process involves:

- Comprehensive verification of key parameters:
 - Maturity dates
 - Interest rates
 - Fee accruals
 - Amortization schedules

The process initiation stems from the loan closing checklist, provided by the deal team, which marks the commencement of the Operations team's involvement. This checklist serves as the primary reference document for transposing critical data points into the investment model shell.

3. Fund Administrator Relations and Reporting

The team maintains vital relationships with fund administrators, dedicating considerable time and resources to ensure seamless communication and accurate reporting. This function represents one of the most time-intensive aspects of their operations.

Their responsibilities encompass:

- Acting as the primary liaison for all loan activity communications
- Providing comprehensive documentation including:
 - New credit agreements
 - Borrowing notices
 - Principal and interest notifications
- Maintaining detailed internal transfer logs that document:
 - All cash inflows and outflows
 - Proper categorization of each transaction

The team conducts monthly reconciliations with fund administrators, despite operating on a quarterly book closure cycle. They serve as the first line of review for preliminary NAV packs, ensuring balance accuracy and P&L correctness before accounting review. Additionally, they participate in a three-way cash reconciliation process, providing an extra layer of verification to the administrator's reconciliation.

4. Valuation Process Management

Implemented in Q3, the valuation process represents a significant new function led by Sean under Jason's oversight. This process focuses primarily on project management aspects, with the core responsibility of consolidating all marks into a unified file. The process integrates closely with the broader Asset Management framework, the full process (including the engagement from Operation side is covered in the 'Detailed Departmental Analysis – Asset Management' documentation).

5. Compliance and Financing Oversight

The team maintains robust oversight of compliance requirements, particularly in relation to Eagle Point asset-backed financing. Their responsibilities include:

- Preparing and submitting quarterly compliance certificates
- Monitoring portfolio LTV compliance with underlying agreements
- Managing borrowing-based compliance for asset-backed facilities
- Ensuring adherence to all financing provider requirements

6. Data Quality and System Management

Maintaining data integrity is paramount to the team's operations. They respond to various ad hoc queries related to investment data and information from the PIPE system. On a quarterly basis, Jason conducts comprehensive quality control processes, including:

- Execution of core report runs

- Manual verification against source documents
- Implementation of regression testing to maintain system cleanliness

This process, while time-consuming, ensures the ongoing accuracy and reliability of the system.

7. Amendment Log Process

Background: The Operations team proactively developed an Amendment Log to address recurring issues they observed. This was a self-initiated solution, not requested by other departments.

Current State:

- A spreadsheet-based summary format (not a database)
- Contains key information including:
 - Amendment dates
 - Amendment types/numbers
 - Job details
 - Summary descriptions
 - Fee information
 - Interest rate modifications

Potential Improvements: The team aims to transform this into a structured database format with:

- Standardized data fields instead of free-form text
- Formatted date fields
- Dedicated fee columns specifying:
 - Amount
 - Payment recipient (GP funds)

Pain Points: This initiative emerged from experiencing multiple challenges and urgent situations ("fire drills"), highlighting the need for better amendment tracking and organization.

Reports

1. CIO Exposure Report

The CIO Exposure Report is a crucial management deliverable produced monthly and provided to Paul. This report offers insights into investment positions by fund, presented through different viewpoints, and includes key calculations to support decision-making and compliance efforts.

1. Use Case:

Paul requested the following investment views by fund:

1. Unrealized Value as a Percentage of Fund Commitment.
2. Unrealized Value as a Dollar Amount.
3. Unrealized Value as a Percentage of Unreturned Capital by Fund.

Additionally, the report incorporates a Yield to Maturity (YTM) calculation. This allows Paul to assess potential positions in investments for sale to other firms. The report also ensures compliance by showing each deal's unrealized value as a percentage of fund commitments, respecting limits on individual investment size relative to commitment size.

2. Workbook Details:

Title: Exposure Analysis Draft (Net)

Delivery Format:

- Excel workbook.
- All formulas are pasted as values.
- Data extraction tabs, marked in green, are deleted prior to delivery.

Delivery Method: Email.

End Users: Paul and the Finance team.

3. Data Sources:

- **PIPE:** Primary data source includes manual input of exit fees for a small sample of investments.
- **FP&A (Casey):** Provides PAR recycling data for analysis.

4. Transformations and Workflow:

1. Data Refresh and Historical Comparison:

- Before refreshing PIPE data (e.g., for the December report), the prior month's data (November) is copied into the Investments Balance by Fund tab.
- This enables month-over-month delta analysis.
- Sean reviews and annotates major movements, explaining deviations such as differences between expected payoff amounts and maturities.

2. Yield to Maturity Calculation:

- Exit fees are manually gathered and incorporated into the future value portion of the YTM calculation.
- PIPE data is adjusted to exclude third-party participation and co-investor names, ensuring calculations reflect only the firm's capital.

3. PAR Recycling Analysis:

- Data provided by Casey from FP&A reflects how much capital can be recycled based on expected maturities and payouts.
- A dedicated tab connected to PIPE employs lambda functions with parameters to aggregate the information by fund.
- Outputs show net capital available for redeployment.

5. Planned Enhancements:

- **Addition of a Fourth Tab:**

- This new tab will present the true Limited Partnership Agreement (LPA) definitions for concentration limits.
- The tab will define concentration limits based on commitment size, rather than NAV (Net Asset Value), which factors in capitalized interest and other adjustments.
- It will address foreign exposure limits explicitly, ensuring alignment with LPA commitments.

6. Key Notes:

- As part of YTM calculations, Sean manually integrates exit fee data to ensure precision.
- The proposed enhancements to the workbook aim to improve clarity around LPA definitions and compliance with concentration and foreign exposure limits.

2. FIS Rec (Portfolio Rec)

1. Scope:

Reconciliation of Metropolitan (Met) balances to FIS to ensure the two systems are in alignment. In cases of identified discrepancies, the team investigates the causes and resolves them. This task is now being handed over to FIS for execution, as the process is stable.

2. Data Source:

- PIPE

3. Schedule:

- Monthly (Beginning of Month - BoM)

4. Process:

- The operations team refreshes the data from PIPE.
- They ensure that the fields are aligned in the correct columns.
- The data is then added to the 'PipeData' tab.

5. Challenges:

- **Instrument Naming Convention:**
 - PIPE and FIS have different naming conventions due to system limitations on the FIS side.
 - FIS has character limitations, and the fund administrator is required to create both funded and unfunded securities, even though this is not applicable for Metropolitan.
- **Mapping Solution:**
 - The operations team maintains a mapping in the PIPE Instrument Master to match PIPE and FIS instrument names.
 - This mapping allows the team to reconcile and display information for FIS instrument names easily.

6. Portfolio Report for Reconciliation:

- This Portfolio Report is used alongside the Income Report for reconciliation purposes.
- The report mimics the portfolio appraisal output from the Virtual Portfolio Manager (VPM).
- The administrator runs their books separately and independently of Metropolitan on a monthly cadence.
- The operations team ensures that balances between the two systems are aligned.

3. Cash Activity Report

1. Use case:

The use case involves generating a weekly cash report that tracks cash movements, discrepancies in received payments, and expected payments across various accounts. The report is generated by refreshing a template in PIPE using data sourced from the Investment Model (IM). After the report is generated, several post-processing steps are performed to split data, verify accuracy, and send the report to the Asset Management team. The process ensures that discrepancies are identified, and all relevant payment information is communicated effectively for further action.

2. Data sources:

- **Investment Model (IM):** Provides the primary data for the report, including details of cash payments, expected payments, and cash projections.
- **Transactions File from the Transfer Log:** Tracks cash movements globally and updates daily for cash movement information. The Transfer log is derived from the models and the Transactions editable table stored in the Pipe. Items are manually added to the Transactions table based on the Transfer Log. Only Operations occasionally make edits to the file. Similarly, the Transactions table is exclusively edited by Operations, with the capability to adjust as needed.
- **Weekly AM Team Call:** Provides insights and projections regarding cash movements and expected payments.
- **Bank Statements:** While not directly cross-checked, discrepancies in the "Received" tab may be reflected in the "Differences" tab if inconsistencies are identified.

3. Data storage:

The data is stored within PIPE where the weekly cash report is generated. The Investment Model serves as the primary data source for the report. The processed data, including discrepancies and expected payments, is stored within the corresponding tabs in the report. These tabs (Received, Differences, Not Received) contain the details necessary for decision-making, but the data itself is managed in the system's internal storage.

4. Detailed breakdown of Tabs in Cash Activity Report

- **Received Tab:** This tab lists cash payments received during the week prior to the report date. There is no additional verification with bank statements, but any discrepancies found during review are reflected in the "Differences" tab. This tab shows raw data regarding payments received.
- **Differences Tab:** This tab highlights discrepancies between the cash payments listed in the "Received" tab and the Investment Model's cash data. It serves as a comparison tool to identify mismatches or errors in recorded payments.
- **Not Received Tab:** This tab outlines expected payments from the previous week, based on data from the Investment Model. It encompasses all instruments but requires manual adjustments to exclude irrelevant items, such as equity payments. Accounts with delinquent payments from prior months are also manually removed to focus exclusively on accounts with delayed but anticipated payments, relying on the report preparer's familiarity with the data. The "Not Received" tab ensures that only relevant expected payments are captured in the final report. Delinquent payments are excluded from the report in only two situations: first, when the payment is deferred due to the model's limitations in accommodating new payment structures; and second, when the delinquency involves a "problem deal" with a long-standing history of missed payments, where an understanding with the Asset Management team exists to disregard those payments. Examples of these rare cases include Hunter's Ridge and Schweizer.

These tabs collectively support the identification of discrepancies, tracking of received and expected payments, and efficient communication of cash flow information to the AM team.

5. Challenges:

- **Manual Intervention:** The need for manual removal of non-relevant items and deletion of delinquent accounts introduces a risk of human error, which could affect the accuracy of the report.
- **No Cross-Checking with Bank Statements:** Without verifying the "Received" tab against bank statements, discrepancies may go unnoticed until later, potentially delaying error detection.
- **Inconsistent Data Reporting:** Manual comparison between the "Received" tab and the Investment Model data can lead to inconsistencies or inaccuracies in identifying discrepancies.
- **Dependence on Individual Knowledge:** Relying on the report preparer's knowledge for manual adjustments could result in inconsistencies and subjective judgment in the final report.
- **Lag in Data Updates:** The weekly report generation means cash movement data is not always up to date, leading to possible delays in decision-making based on outdated information.

4. Internal Transfer Log

1. Use case:

The Internal Transfer Log report is used to track payments received for funds and redistribute them across projects and co-investors. This process is triggered by the receipt of cash payments, which are then split according to fund participation data from the Investment Model. Separate tracking is done for amendment

and monitoring fees, which are treated as administration fees and not included in the waterfall distribution. Participation may vary over time; the current allocation is used from the models to distribute payments to funds. If funding occurs with a different allocation, Operations provides this information. The total cash amount received is entered into the Transactions file, which is the basis for generating the Cash Movement Report. Funds received generally correspond to the invoiced amounts, allowing for proper categorization. In cases of discrepancies, the borrower is contacted to address the issue.

2. Data sources:

- **Investment Model:** Provides fund participation data, including the allocation breakdown for each fund component.
- **Bank of California:** Provides cash movement information.

3. Challenges:

- **Manual Updates:** Update of the ITL file is done on ad hoc basis and requires manual input to update the Transactions file, which can lead to potential errors or delays in recording payments.
- **Tracking Fees Separately:** The need to track amendment and monitoring fees as separate administration fees without including them in the waterfall distribution can complicate the process, especially if fees are not consistently recorded or reported accurately.
- **Real-Time Data Processing:** The process relies on timely updates to the Transactions file, and any delay in recording or distributing payments could affect the accuracy of subsequent reporting and fund allocation.

5. Delinquency Report

1. Use case:

The Delinquency report is a weekly global tracker for deferred or delinquency fees, providing insights into due payments and the status of outstanding fees. Shared twice weekly with the company for review, the report offers a comprehensive view of delinquent payments across various deals and projects, including interest, fees, legal expenses, and outstanding balances.

Updating the report requires manual input, such as allocating interest received to specific funds and categorizing legal expenses. It serves as a valuable tool for tracking the unrealized value of deals and planning actions to address unpaid fees and expenses. Any delinquent payments as of the report's run date for the month will appear, even if they were included in the prior week's report.

2. Data sources:

- **Payment Timelines:** Payment due dates and schedules, such as interest payments due on the 1st and 15th of each month, serve as the basis for tracking delinquency data and payments.
- **Investment Model:** Provides participation data and key payment details used to track deferred or delinquent fees across deals and projects.

- **QuickBooks:** Used to source legal expenses data, with bi-weekly updates regarding the status of legal expenses, categorized as either 'paid' or 'unpaid.'
- **Fund Accounting Team:** Supplies legal expenses data bi-weekly, including invoices and statuses, used for tracking outstanding payments.
- **Operations Team Knowledge:** Relies on the team's understanding of payment timelines, outstanding balances, and planned actions to manually update records for unpaid expenses and delinquency data. Deal Expense data is provided approximately every two weeks, ensuring most delinquent payments are identified, apart from the occasional delay caused by the time gap in receiving the latest Deal Expense information.

3. Data storage:

Data is stored across various systems and files. Delinquency data, including interest and fees, is entered manually into a system after payment maturity and tracked over time. Payment schedules, participation data, and key details about each deal and project are stored in the Investment Model, which is used to monitor deferred or delinquent fees. Legal expenses are recorded in QuickBooks on a bi-weekly basis, categorized as 'paid' or 'unpaid' based on invoice status. Updates from the Fund Accounting team are stored in the system for review. The Operations team manually records updates and planned actions for unpaid expenses, with this information stored centrally for ongoing tracking.

4. Detailed breakdown of Tabs in the Delinquency report:

Interest & Fees (Deal): This tab contains raw delinquency data, manually entered a few days after the maturity of payments. It includes interest payments typically due on the 1st of each month, with additional major payments expected around the 15th. The data in this tab serves as a reference for planning actions in the 'Deal Notes' tab.

- **Cover-Deal:** This tab summarizes delinquency data by deal, with subsections for each component
 - Management Company
 - Management Company – Deferred
 - Management Company – Unpaid
 - Funds
 - Funds Deferred
- **Cover Funds:** Offers a project-level view of delinquency, providing a more granular breakdown by respective deals. It requires manual breakdowns of interest received by the fund, reflecting the status of deferred or delinquent payments on a project basis.
- **Expense Detail:** This tab tracks legal expenses sourced bi-weekly from the FA team via QuickBooks. It categorizes expenses as 'paid' or 'unpaid' based on invoice status. For expenses not billed to borrowers, they are marked as unpaid.
- **Deal Notes:** This tab documents planned actions for unpaid expenses. Updates are made manually and reflect decisions regarding unpaid legal fees and related follow-up actions.

5. Challenges:

- **Manual Data Entry:** The report relies heavily on manual data entry, especially for interest payments and legal expenses, which increases the risk of errors and delays.
- **No Automated Infrastructure:** There is no automated system to pull data from PIPE, meaning that accrued interest in the Investment Model cannot be tracked or used for payment purposes.
- **Potential Mismatches in Data:** With no reconciliation between QuickBooks and Investment model, mismatches may occur due to differing versions of data, complicating accuracy in tracking outstanding balances.
- **Dependence on Knowledge of Payment Timelines:** New delinquency data is added based on prior month performance and team knowledge, which could lead to inconsistencies or missed payments if timelines are not accurately tracked.
- **Lack of Cross-Checking for Legal Expenses:** While QuickBooks could be used to cross-check balances, there is no established reconciliation process, leaving room for discrepancies between records.

Pain Points and Challenges

This section focuses on the operational challenges faced by the Operations team due to misaligned processes, system gaps, and unclear ownership between DealCloud and PIPE. The Operations team relies on a checklist provided at deal closure as the initial reference data, but ongoing updates are not reflected in DealCloud. This forces the team to manually reconcile data from both systems to ensure accuracy before presenting it to senior stakeholders. The lack of integration and communication between teams exacerbates delays, while undefined responsibilities for maintaining and updating data fields lead to inconsistencies. Additionally, missing context in data requests and the absence of risk management reporting hinder the Operations team's ability to deliver accurate and timely outputs. These inefficiencies increase workload and create significant operational risks.

1. Context Issues in Data Requests

- **Description:**
Many data requests lack clear context, leading to misinterpretation, which forces teams to guess the requestor's intent.
- **Impact:**
 - Teams may provide incorrect or incomplete data.
 - Contextual misunderstandings lead to discrepancies in reporting.
- **Additional Details:**
Example: If Paul asks for the returns of a position, he wants them net of participations. However, the team's default reporting is gross participation, unless the Operations team is aware of the context, they may deliver mismatched outputs.

2. Data Integrity and Ownership

- **Description:**
There is no clear responsibility for maintaining and updating data fields DealCloud post deal closure, leading to discrepancies between PIPE and DealCloud during deal lifecycle.
- **Impact:**
 - Data differences between DealCloud and PIPE create inefficiencies.
 - Manual reconciliations are necessary to identify the source of truth.
 - Operational risks increase as inaccurate data propagates through reports.
- **Additional Details:**
 - Operations relies on a checklist provided at deal closure as the initial source of reference data. This checklist is static, and changes made later are not reflected in DealCloud.
 - Teams created their own parallel processes to compensate for DealCloud's limitations, further compounding data integrity issues.

3. Lack of Risk Management Reporting

- **Description:** Essential risk-related data is not captured, preventing the development of risk management reports.
- **Impact:**
 - Risk exposure is not visible to the teams or leadership.
 - Strategic decisions cannot be fully informed by risk insights.
 - The absence of structured reporting on risk creates gaps in accountability.
- **Additional Details:** The absence of defined responsibilities and workflows further exacerbates the inability to track and report risk effectively.

4. Undefined Purpose of DealCloud

- **Description:** DealCloud's role and scope have not been defined. It lacks dynamic functionalities such as a calculation engine, and its static nature limits its usefulness.
- **Impact:**
 - Teams cannot rely on DealCloud for long-term or dynamic reporting.
 - Weekly reports are the only consistent output, necessitating parallel processes for other needs.
 - The system's limitations create inefficiencies and duplication of effort.
- **Additional Details:**
 - The checklist at deal closure is essential for accurate data capture, but there is no mechanism to ensure updates are reflected in DealCloud.
 - The lack of clarity on DealCloud's role forces teams to rely on ad-hoc processes for tasks such as accounting, cash payouts, and closing books.

Recommendations

1. Specific Recommendations (Pain Point 2): Data Integrity & Ownership Issues

Specific Issues:

1. No clear ownership of data updates post-deal closure, causing misalignment between DealCloud and PIPE.
2. DealCloud remains static, as ongoing updates are not reflected once the deal-closing checklist is submitted.
3. DealCloud is not structured to track deal amendments, loan restructures, or add-ons, forcing Operations to manually maintain this information (amendment tracker).

A. Enforcing Data Ownership & Standardization

1. Mandatory Post-Closing Update Process for DealCloud
 - Enforce a structured update cadence in DealCloud after the deal is closed.
 - Eliminate parallel manual tracking by enforcing tracking of add-ons in DealCloud and integrating updates into a single source.
2. PIPE & DealCloud Sync on Deal Amendments
 - Automated PIPE-to-DealCloud synchronize for amendment tracking. Currently, changes to existing deal terms are updated into PIPE but not updated in DealCloud, leading to discrepancies.
 - Enforce data validation checkpoints before reports are generated, ensuring both systems reflect the latest deal changes.

2. Specific Recommendations (Pain Point 1): Data Flow Management

Specific Issues:

- No structured process for passing deal ownership from Deal Team to Operations and Asset Management post-closing, causing missing data fields.

Recommendations

1. Automate Updates Between DealCloud & PIPE
 - Ensure DealCloud automatically updates PIPE with financials, eliminating reliance on manual re-entry.
 - Require real-time validation rules to prevent misalignment of borrower-level vs. fund-level data.
2. Create a Single Source of Truth for Borrower-Level Data
 - Ensure borrower financial data is only updated in a single system, the information should then flow to the rest, preventing discrepancies between multiple reporting sources.
 - Fund Accounting and Investor Relations teams to pull directly from PIPE, eliminating conflicting data extractions.

3. Specific Recommendations (Pain Points 1,2, 3 & 4): Data flow and ingestion recommendations

3.1 Standardizing Deal Processes and Data Integrity

Standardized Deal Closing Checklists:

- **Current Process:** Checklists structure and mandatory fields vary across deals and teams, leading to inconsistent data capture.
- **Action:** Create a standardized digital checklist in SharePoint that auto-fills key data fields in PIPE, such as interest rate schedules, commitment details, etc.
- **Impact:** This ensures uniformity in data capture, reduces manual data entry errors, and sets a consistent foundation for subsequent data processes.

Dynamic Error Checking in PIPE:

- **Current Process:** Jason conducts manual sanity checks, comparing PIPE reports to investment models.
- **Action:** Integrate automated error detection scripts in PIPE that trigger alerts when discrepancies exceed pre-set thresholds (e.g., a 0.5% variance in cash flow).
- **Impact:** Immediate discrepancy flagging will speed up error resolution, reduce reliance on manual checks, and ensure data integrity before ingestion.

3.2 Enhancing Data Integration and Reporting

Enhanced Data Flow Between PIPE and DealCloud:

- **Current Process:** DealCloud and PIPE share overlapping fields (sector, pillar), but updates are inconsistent.
- **Action:** Develop an API connection between PIPE and DealCloud to synchronize key data fields daily, ensuring alignment on deal details, ownership, and sector classifications.
- **Impact:** Ensures consistent, up-to-date information across both systems, reducing data misalignment during deal transitions and improving interdepartmental collaboration.

Integration of PIPE with Atom Invest:

- **Current Process:** Asset Management uses Atom Invest for credit monitoring, but data flow from PIPE is aggregated.
- **Action:** Establish a direct data feed from PIPE to Atom Invest, ensuring borrower performance metrics, payment schedules, and delinquency updates are automatically reflected in Atom Invest at a more granular level.
- **Impact:** Aligns data between Operations and Asset Management, reduces manual updates, and enhances portfolio performance accuracy.

Centralize Reporting in Data Warehouse:

- **Current Process:** Reports are manually refreshed in PIPE and adjusted in Excel.
- **Action:** Move all reporting to Power BI, directly connected to the centralized data warehouse, for:

- **Cash Activity Report:** Split data by Asset Manager and auto-update tabs for Received, Differences, and Not Received.
- **Delinquency Report:** Automate tracking of deferred/delinquent fees across Interest & Fees, Cover-Deal, and Expense Details tabs.
- **Impact:** Reduces manual report preparation time by 50% and ensures real-time data accuracy.

Operating Experts

Roles and Responsibilities

The Operating Experts Team is responsible for supporting and managing a network of over 590 operating executives across the United States and globally. Their core mandate is to collaborate with these experts across several areas to drive value for Metropolitan.

Core Responsibilities

- **Diligence Support:** Engaging operating experts to evaluate new investment opportunities and provide critical insights within tight deadlines, ensuring deals are not put at risk.
- **Deal Sourcing:** Collaborating with operating experts to identify and bring new deal opportunities to Metropolitan.
- **Thesis Development/Consulting:** Partnering with experts to develop investment theses within targeted practice areas.
- **Portfolio Company Engagement:** Providing proactive and reactive support to portfolio companies in areas like monitoring, enablement, or addressing specific challenges.

The Operating Experts Team serves as a critical interface between the Deal Team and the Asset Management Team, ensuring seamless collaboration and value creation.

Measures of Success

The success of the Operating Experts Team is closely tied to the performance metrics of the teams they support—Deal Team and Asset Management Team. Key measures include:

1. **Timely Diligence Support:** Identifying and deploying the right expert within a specific timeframe to avoid jeopardizing deal timelines.
2. **Deal Flow Tracking:** Monitoring the number and quality of deals brought by operating experts. For example:
 - **Quantity of Deals:** A higher number of opportunities ("shots on goal") increases learning and pipeline efficiency.
 - **Quality of Deals:** Deals are evaluated through their progression in the pipeline. For instance, deals that advance through multiple stages are considered higher quality, whereas deals that are "insta-killed" are flagged for improvement.
3. **Operating Expert Engagement:** Tracking the level of engagement and utilization of operating experts in diligence, portfolio company initiatives, or sector-related projects.
4. **Enabling the Operating Experts:** Ensuring operating experts are better equipped to identify and bring high-value opportunities.

All metrics are systematically tracked in **DealCloud**, ensuring accountability and transparency.

Key Features of the Operating Experts Network

- **Sector Agnostic Expertise:** The network spans multiple sectors, ensuring Metropolitan has access to diverse talent and expertise that the firm cannot maintain internally.
- **Strategic Intelligence:**
 - Identifying opportunities in new sectors.
 - Providing deeper insights into tailwinds and headwinds in existing sectors.
- **Differentiation:**
 - For **Limited Partners**: Demonstrating how Metropolitan leverages operating experts to execute its investment strategy.
 - For **Borrowers**: Delivering expertise that aligns with industry pain points and operational challenges, creating a unique value proposition.

The operating expert's franchise is integral to Metropolitan's investment strategy and execution, serving as a key differentiator in the market.

Engagement and Database Management

- **Database Overview:**
 - The operating experts network consists of over 590 individuals. However, not all are actively engaged.
 - Engagement is tracked in DealCloud, ensuring existing resources are utilized effectively before initiating external searches.
- **Engagement Tracking:**
 - Experts are categorized based on their involvement in:
 - Diligence projects.
 - Portfolio company initiatives.
 - Sector-related initiatives.
 - Engagement levels are measured through formal contracts signed between the operating experts and the Metropolitan team.
- **Invoice Management:**
 - Operating experts submit invoices directly to the Operating Experts Team via email.
 - The team coordinates with Metropolitan's Accounting Department to process payments and update relevant information in DealCloud.

Deal and Portfolio Company Involvement

- **New Deal Opportunities:**
 - Operating experts could present new deal opportunities to the Operating Experts Team.
 - The team summarizes the information and forwards it to the Deal Team, which then enters the details into DealCloud.
 - Opportunities are evaluated based on their progression through the pipeline, with higher-quality deals advancing further.
- **Portfolio Company Support:**
 - Operating experts may be engaged with portfolio companies for two distinct purposes:
 - **Growth Opportunities:** Exploring avenues to inject additional capital.

- **Issue Resolution:** Addressing challenges or risks within the company.

Strategic Partnership Objectives

The Operating Experts Team is essential for Metropolitan's ability to execute its investment strategy. Their impact extends across:

- **Investment Execution:** Ensuring timely and high-quality diligence support.
- **Deal Sourcing:** Driving new opportunities and improving pipeline quality.
- **Portfolio Management:** Enhancing operational outcomes for portfolio companies.
- **Market Differentiation:** Elevating Metropolitan's standing with limited partners and borrowers by demonstrating unparalleled industry expertise and support.

Organizational Structure and Collaboration:

The Operating Experts Team functions as a central pivot to streamline efforts between internal teams and external stakeholders, ensuring a cohesive strategy:

1. Deal Team

- **Support During Due Diligence:**
 - Identifies and assigns Operating Experts with sector-specific expertise for thorough diligence.
 - Tracks expert contributions and reports them within DealCloud for transparency and record-keeping.
- **Sourcing and Screening:**
 - Collaborates with the Deal Team to source, screen, and analyze potential investment opportunities.
 - Uses external networks and platforms to supplement internal expertise when necessary.

2. Asset Management Team

- **Portfolio Monitoring:**
 - Provides strategic insights and recommendations from Operating Experts to enhance portfolio company performance.
 - Tracks progress on key initiatives driven by experts through structured reporting.

3. Finance and Fund Accounting Teams

- **Integration of Data:**
 - Shares data about expert contributions and deal-related metrics with the Finance team for accurate financial reporting and compliance.
 - Aligns with fund accounting for cost tracking and allocation related to Operating Experts.

Tools

Primary Tools

1. DealCloud

The OE team at Metropolitan relies on DealCloud as the central hub for managing all processes and data. Key features and functionalities include:

1. OE Module Integration:

- The OE team has developed a custom OE module within DealCloud, allowing them to analyze data through various perspectives, including the Deal Team and pipeline views.
- This module systematizes the request form for new Operating Experts (OEs), enabling real time tracking of data evolution, patterns, and trends over time.

2. Data Organization and Tagging:

- Each Operating Expert has a dedicated contact profile and company profile in DealCloud.
- Profiles are linked to projects they are involved in, and all associated materials (e.g., reports, calls, and documents) are uploaded to the relevant project and tied back to the contact and company.

3. Transition from Excel:

- The OE module consolidates all data previously tracked in Excel, providing a centralized system for data management.
- While 2024 data is fully up to date, the team is backfilling data from 2020 onward to create a complete dataset.

4. Dataset Quality:

- The OE team maintains one of the cleanest and most robust datasets relative to other teams.
- Their dataset supports the Deal Team and feeds into Asset Management workflows. However, its reliability is sometimes impacted by inconsistent updates from the Deal Team and Asset Management, leading to manual data cleansing efforts during reporting.

5. Challenges with Reporting:

- Reporting issues arise when deals are not properly tagged or maintained in DealCloud by the Deal Team.
- Manual efforts are often required to reconstruct data when answering questions about OE interactions or running reports (e.g., the number of OEs per deal).
- Upsized deals are mistakenly entered as entirely new deals.

6. Manual Data Entry and Updates:

- member of the OE team, manually creates contact and company profiles, uploads agreements, tracks fee, manages projects, and logs OE-related reports into DealCloud.

Secondary Tools

2. Notion

Notion complements DealCloud by serving as a collaborative and staging tool for specific processes:

1. Candidate Search Tracking:

- Used during due diligence processes to document and organize potential OE candidates before they are formally added to DealCloud.
 - Tracks sources, notes, and initial interactions. Once a candidate progresses (e.g., after a scheduled call), they are entered into DealCloud and tagged to the sourcing request.
2. **Team Workspace:**
 - Functions as a staging repository for high-level tracking, including candidate search progress, intro calls, and audit trails.
 - Acts as an internal workspace for team audits and is not designed to transfer data elsewhere.
 3. **Dashboards and Initiatives:**
 - Used to draft dashboards (e.g., OE Team Dashboard) before implementation in DealCloud.
 - Houses higher-level firm initiatives and serves as a centralized knowledge base (e.g., Metropolitan's Wiki for onboarding).
 4. **Main Users:**
 - Shirley, George, and Maithili are the primary users of Notion within Metropolitan.

[3. Survey Sparrow](#)

Survey Sparrow is used to collect feedback from OEs after completing their deals:

[Process:](#)

- Once an OE's involvement in a deal concludes and their invoices are processed, a Survey Sparrow link is emailed to them.
- The survey includes a standardized set of questions aimed at capturing their experience with the project, the departure process, their interactions with the team, and their perception of Metropolitan.
- The link is sent via email, and responses are returned to Metropolitan's team.

[Automation:](#)

- Shirley built an automation process wherein each response received from Survey Sparrow is exported to a Google Sheet.
- The Google Sheet automatically organizes the data, breaking it down by Deal Team member.
- At the end of the year, the Google Sheet is reviewed to calculate an average score for each Deal Team member. This provides a summary of the team's performance based on feedback from OEs.

[Processes](#)

[Overview](#)

Operating Experts team is engaged in all processes related to operating experts – from identifying the right talent, engaging with the OEs, and marking invoice received from OEs in DealCloud.

Process Workflow Overview

The deal team must update all relevant information for their deals before submitting a request for an Operating Expert. To do this, they navigate to the "Edit" section, go to "Expert Details," and select the "Expert Type Request" option. If they select more than two experts, a new table will appear. At this stage, they must specify the type of expert required and include the operating request. Previously, this Operating Expert Request Form was a Word document.

Once the details are entered and saved, an email is automatically sent to the Operating Experts (OE) team, notifying them to initiate the search for an OE. The OE team then completes all necessary information, including selecting an expert, documenting referral sources, and attaching the OE request form. They also include any agreements related to the search or the selected OE and details about any expert calls conducted. Additionally, the OE team must input all expert details, service agreements, and fees associated with the search.

OE emailing list and dispatch: The OE team uses an email distribution system to send quarterly letters to all Operating Experts (OEs) simultaneously. This process is managed within DealCloud, utilizing its dispatch system to send the emails efficiently.

Reports

Overview

All OE reports are typically for internal use and not intended for external parties. However, a one-page PowerPoint summary of Operating Expert (OE) activity is created and shared with the Investor Relations team for communication with Limited Partners (LPs). All reports/dashboards are created in DealCloud, hence the data extraction process is automated. For all data stored in Notion, the team is using the dashboard capabilities of the tool, so the data is not transferred anywhere else.

Report/Dashboard Workflow Overview

- OE Dashboard

Data Source: DealCloud

Distribution Method: DealCloud live Dashboard.

Use Case: Provides an overview of the OE network, highlighting top-performing experts, the number of deals sourced, and deals closed throughout the year.

Filters: Includes filters for stage, subtype, and investment dates.

Challenges:

- A significant issue is that data is being incorrectly entered into DealCloud or not being entered at all. Some deal information is incorrect, new deals that are brought in are not being entered, deals not being tagged to the correct fishing hole, etc.
 - Example: "source type" field not marked as "Operating Expert" or "deal source individual" and "deal source company" fields not filled accurately when OE request was submitted.

Although, the Operating Experts team has already bypassed this by using the contact type on the “contact object” vs “deal object”, the data is not populated correctly.

- Lack of updates to deal stages post-closing - for example, Stage 6 represents "current investment," but exit details are often missing. Although, this is not a major challenge on OE side.
- [OE fee tracker](#)

Data Source: DealCloud

Distribution Method: DealCloud live Dashboard.

The fee tracker is integrated into the OE module within DealCloud. The Operating Experts team is responsible for updating advisory service agreements by entering all relevant details, including fees committed and payment dates. They also set expiration reminders, a new feature that automates notifications for agreements nearing expiration.

- **Use Case:** Provides an overview of the fees Metropolitan has committed to for the year and the amount paid to date. It also tracks retainers, and hunting licenses and summarizes the number of engagements for 2024 referral retainer agreements.

Previously managed in Excel, the fee tracker has now been fully transitioned to DealCloud for streamlined tracking and management.

- [Weekly Scorecard](#)

Data Source: DealCloud

Distribution Method: DealCloud live Dashboard.

The Fishing Hole Scorecard dashboard is built in DealCloud. For accurate population of the dashboard, each deal must be correctly associated with a fishing hole.

- **Use Case:** Tracks weekly status updates. The "Next Steps" section is currently a manual process where the Operating Experts team contacts the Deal Team every Monday morning to request updates for the week. The Deal Team provides feedback, which the Operating Experts team then inputs into the system.

The extraction process for the scorecard has been automated. Shirley created a DealCloud template that generates the scorecard directly in PowerPoint, eliminating the need for manual PowerPoint creation.

Users are encouraged to access the live instance in DealCloud for real-time data. This allows them to filter and interact with the data directly in the dashboard, rather than relying on Excel or PowerPoint for filtering and analysis.

Pain Points and Challenges

The primary issue with DealCloud lies in the incomplete and inaccurate data being entered by the Deal Team and Asset Management. However, before dedicating significant resources to cleaning up DealCloud, the team wants feedback on its current use and other interactions. They also seek Markman's team's input on how to optimize DealCloud usage across broader teams.

1. Data Entry Challenges:

The Operating Expert team has observed that the Deal Team's data entry process is highly disorganized. Numerous entry fields are optional, resulting in confusion about what information is required and what can be omitted. Additionally, many fields remain unused or are redundant. Historical data entry also requires attention, as the current backlog contains errors and inconsistencies. The team has already invested time in identifying redundant and unused data points, outlining a plan to remove unnecessary data sources and enforce improved practices moving forward.

The Operating Experts team worked closely with DealCloud professional services for a couple of months to rebuild the OE module in the system. The Operating Experts team (Shirley) gave specific instructions/guides for what they were trying to accomplish, how the module should work, and how the information should be captured. This work allowed the Operating Experts to create their dashboards in DealCloud. As part of this project the team also performed data migration, data clean up, and a lot of testing to ensure the new framework was working accurately and as expected.

Since the deal team data was not addressed at that time or prior to the project, this is affecting the OE team as their data feeds directly into the OE dashboards. The Operating Experts team suggests that each team should have a designated Platform Manager as well as each team should update their entry forms with conditionalized fields to ensure their data is properly segmented by department

2. Deal Post-Closure Oversight:

Status and stages of deals are not updated in DealCloud to reflect deal closures, leaving them unmarked as exited. Additionally, upsized deals are often mistakenly entered as entirely new deals, leading to incorrect categorization. The Asset Management team currently does not maintain ownership of DealCloud after deal closure. The team has already discussed addressing these issues, a larger project has been proposed to train the Asset Management team, enabling them to take responsibility for updating DealCloud post-closure with clear and defined processes.

3. Operating Experts as Limited Partners (LPs):

Issue with **NEW** LPs/potential LPs who are also operating experts. Those are currently being entered as "companies" to track their fundraising process by Investor Relations team.

- Example is Jason Ve. Jason was entered as an OE contact by the OE team but entered as Jason Ve – Company by IR team. These two records are not connected
- As per OE team this needs to be addressed immediately and there are at least 18 contacts that are created as companies in the system

- Since OE and IR workflows do not overlap the OE team should continue updating the OE portion of the contact page.

4. Intelligence Hub Gaps:

The team currently lacks a centralized intelligence hub to capture and access insights about sectors, opportunities, or other relevant information. This data, whether internal or external, is not effectively captured or accessible within DealCloud or any other system. The Operating Experts team has identified Glean as a potential solution to provide smart reporting capabilities, with the goal of integrating all firm data into a system that enables customizable analysis and intelligent reporting.

Recommendations

Specific Recommendations (pain-points 1 & 2):

Specific Issues:

- Exited deals not marked correctly (Stage 7 "Realized Investment" rarely used)
- Upsized deals incorrectly entered as new deals
- Asset Management team not maintaining DealCloud post-closure
- Optional fields causing inconsistent data entry
- Redundant/unused fields creating confusion - Historical data backlog with errors
- Terminated deals with OE involvement not tracked in dashboards
- No visibility into OE engagement on unsuccessful deals

Field Standardization & Cleanup (DealCloud System Optimization)

- Review with Deal Team to identify all redundant/unused fields
- Remove redundant/unused fields identified to simplify interface
- Create standardized mandatory field sets for each stage of deal lifecycle
- Implement data validation rules (e.g., preventing upsized deals from being entered as new deals)
- Add parent-child relationship structure for tracking add-ons/upsizes with clear linkage to original deals
- Set-up automated data quality monitoring
- Enforce proper stage progression through deal lifecycle and add automated notifications when deals reach Stage 6
- Add automated reminders for status updates

Role-Based Access & Workflows (Process Governance)

- Establish clear data ownership across teams (Deal Team, Asset Management, OE Team)
- Implement department-specific permissions (Deal Team entry, AM post-close updates, OE relationship tracking)
- Create clear handoff process when deals move from Deal Team to Asset Management
- Create automated notifications for key handoffs
- Define workflows for when AM team needs to update information post-close
- Establish approval process for critical data changes

Create clear data entry process documentation and trainings:

- Step-by-step guide for each deal stage, document end-to-end deal lifecycle in DealCloud
- Required fields checklist
- Create formal handoff checklist from Deal Team to Asset Management
- Field definitions and examples (e.g., Deal Name convention etc.)
- Create standardized data entry process and guidelines
- Train Asset Management team on DealCloud maintenance
- Establish support process for questions/issues (e.g., Product Owner/Subject Master Expert)

Expand DealCloud dashboards:

- Add killed deals tracking
- Create OE engagement metrics for unsuccessful deals
- Track reasons for deal termination
- Add reporting on OE involvement across all deal stages

Specific Recommendations (pain-points 3):

Specific Issues:

- Issue with **NEW** LPs/potential LPs who are also operating experts.
- An update on the process on the Investor Relations side is needed.

A. Investor Relations fundraise tracking process:

- The Investor Relations team needs to update the fundraise tracking process on the contact level and update their information as needed.
- OE and IR data will not overwrite each other as they are two separate processes that can be tracked correctly on the contact object IF the fundraising process is properly added to the contact page.

Specific Recommendations (pain-points 4):

Specific Issues:

- No centralized repository for sector insights
- Information spread across systems
- Limited reporting capabilities

A. Implement Glean as identified:

- Evaluate and implement Glean
- Establish integration between DealCloud and intelligence hub
- Set up automated data sync from Notion (if Notion will remain within tool set)
- Create centralized repository for sector insights
- Implement smart tagging for improved searchability
- Build customizable reporting templates

B. Knowledge transfer:

- Migrate relevant data from Notion
- Create integration strategy for disparate systems

- Set up automated data capture from emails/documents
- Establish ongoing data maintenance procedures

C OCD Pillar

Roles and Responsibilities

The Charge-Off Consumer Debt (COCD) function operates by acquiring portfolios of charged-off consumer debts, typically originating from creditors such as banks, utility companies, or service providers. These debts are categorized as "charged off" due to their prolonged delinquency, which makes them challenging to collect. Consequently, they are purchased at a fraction of their original value, reflecting their high-risk nature.

While part of the debt is collected internally, the COCD function also relies on a network of six to seven external partners, including specialized debt buyers and collection agencies. The debt buyers are responsible for selecting the agencies, which are reviewed during the underwriting process, and they oversee the agencies' performance on an ongoing basis. While the firm cannot directly assign files to specific agencies due to lender liability concerns, it retains the authority to request the removal of groups engaging in inappropriate practices.

These partners manage direct interactions with consumers and perform the following tasks:

- **Negotiating Repayment Plans:** Collaborating with debtors to establish feasible repayment schedules that align with their financial circumstances.
- **Offering Settlements:** Encouraging partial repayment by proposing settlements that are mutually beneficial for the debtor and Metropolitan.
- **Pursuing Legal Actions:** Initiating legal proceedings in cases where voluntary payment agreements cannot be reached, ensuring adherence to lawful recovery practices.

The external agencies operate within a structured framework of guidelines established by portfolio companies, ensuring compliance with all legal and regulatory requirements. These include:

- Clear instructions regarding permissible communication methods with consumers.
- Enforcement of fair practices under applicable debt collection laws.
- Regular reporting and auditing to maintain transparency and accountability.

Core Responsibilities:

1. Portfolio acquisition

The COCD function is involved in the strategic acquisition of charged-off customer debt portfolios. The key tasks include:

- **Identifying Opportunities:** Evaluating potential acquisitions involves analyzing multiple factors to assess their suitability and alignment with strategic objectives.
- **Portfolio Evaluation:** Collaborating with external debt buyers to track recovery potential and assess financial models that align with Metropolitan's portfolio objectives.
- **Finalizing Acquisitions:** Ensuring compliance with legal/regulatory frameworks during the purchase process.

Management of Portfolio Performance

The COCD function implements a rigorous performance monitoring framework for each collateral pool, employing comprehensive metrics to evaluate loan portfolio health. A notable aspect of this framework is that while the company does not directly finance all pools in the borrower's book, each pool operates under a specific forecast model that the operations team must execute against, regardless of its financing status.

Performance evaluation follows a structured monthly cycle, with comprehensive updates delivered by the tenth of each month. This systematic reporting schedule facilitates two critical objectives:

- Detailed tracking of actual performance against established forecasts
- Quantitative assessment of operational team effectiveness in executing collection strategies

To maintain optimal portfolio performance, proactive oversight of all collection activities is exercised. Through the integrated monitoring and management system, the COCD function maintains precise control over portfolio performance metrics while enabling rapid response to any deviations from expected outcomes.

2. Collections – Streamlining Debt Recovery Processes

The company uses a parallel system that mirrors its primary reporting infrastructure to track performance data. This setup enables the team to independently verify data, ensuring reliability and uninterrupted access to critical performance metrics, even in cases where direct borrower reporting is unavailable. Massena, as the backup servicer, is integral to maintaining this parallel framework and ensuring continuous performance tracking.

Data Management

- Borrowers submit collection updates via email, which are manually entered into Excel-based tracking systems by the Asset Management team.
- These systems calculate key performance indicators (KPIs) and generate dashboards that provide consolidated views of portfolio performance. These insights are used to monitor progress against forecasted metrics.

Backup Servicing

- Massena's team mirrors borrower collection systems to maintain a record of the collateral in case a foreclosure is necessary.
- This approach ensures data integrity and consistency while improving the function's ability to effectively monitor borrower compliance.

Payment Distribution

- Payments from underlying borrowers are managed through a structured cash flow waterfall, allocating collected funds to interest, fees, and principal as specified in the lending agreement. These payments are monitored using performance metrics rather than fixed repayment schedules.

Massena only monitors transactions; they do not handle or manage cash transactions directly. Instead, payments are sent directly from the underlying borrowers to Metropolitan.

Strategic Partnership Objectives

The COCD function's responsibilities extend beyond operational management, encompassing strategic oversight to ensure the financial success of debt portfolios. Key focus areas include:

- **Portfolio Value Maximization:** Identifying underperforming portfolios pushing the portfolio company to optimize collection strategies to achieve favorable outcomes.
- **Operational Efficiency:** Challenge company collection strategy where necessary, providing market feedback from industry experience over the last 12+ years in the sector.

Organizational Structure and Collaboration

The COCD function operates within a broader organizational ecosystem, working closely with both internal teams and external partners to align on portfolio acquisition, management, and performance objectives:

1. **Asset Management Team (the AM team):** Serves as the primary collaborator, managing the debt portfolio by closely monitoring its performance and ensuring efficient handling of related activities. They maintain strong relationships with borrowers to facilitate seamless operations and are responsible for delivering accurate and timely reporting, which is critical for informed decision-making and effective portfolio oversight.
2. **Borrowers:** Metropolitan provides financing to borrowers, who are the debt buyers, owners, and financially responsible parties for the loan. They are also responsible for managing collections and fulfilling their financial obligations to Metropolitan.
3. **Massena Consulting:** Operates as an extension of the AM team, providing reliable support for data collection, interpretation, and manipulation. Their role ensures the accurate gathering and processing of critical information, offering the AM team additional capacity and expertise to analyze and present data effectively for decision-making and operational efficiency.
4. **Deal Team:** Supports the execution of new transactions by preparing detailed memos and underwriting deals. Their responsibilities include conducting thorough evaluations and ensuring proper documentation to facilitate decision-making and streamline the deal execution process.
5. **Finance Team:** Delivers essential financial data derived from the Investment Model, providing accurate and timely insights. Their role involves extracting, analyzing, and presenting key information to track project balances, cash flow movements, and overall financial performance, enabling informed strategic decisions.

Tools

The COCD function employs a range of tools and platforms to manage portfolios, track performance, and generate data-driven insights. These tools facilitate integration of data, ensure consistent reporting, and support the function's strategic objectives. Below is a detailed overview of the tools used, their implementation, key functionalities, integration frameworks, and associated challenges.

Primary tools

1. PIPE

PIPE is a centralized data management and analytics platform built on a semantic data model developed in Power BI Desktop by Oehm, LLC. It consolidates data from SharePoint-hosted Excel investment models, forming the foundation for consistent and streamlined reporting. PIPE enhances decision-making by allowing stakeholders to explore data dynamically and tailor metrics to operational needs.

Key Functionalities:

- **Centralized Data Management:** Aggregates data from multiple Excel investment models for accurate portfolio tracking.
- **Dynamic Data Access:** Enables analysis dynamically via Excel through pivot tables and add-ons, empowering stakeholders to effectively explore and analyze data.
- **Tailored Metrics:** Provides outputs such as payment details, projections, and cash flow adjustments essential for financial tracking.

Integration Framework:

- **Investment Models:** The PIPE collects data from manually completed Excel files. After all necessary information is entered and verified, the system is published for use. While the refresh process runs nightly, it requires manual initiation to incorporate updates into PIPE.
- **Asset Management Model:** Asset Management relies on PIPE data as a source for their models, which operate at a higher level. PIPE data is manually requested and entered into the Asset Management report.
- **Collaboration with Oehm:** Tailored measures that address specific business requirements.

User Roles:

- **COCD Team:** Engages indirectly with PIPE by leveraging its aggregated outputs. PIPE serves as a General ledger that compiles data from Investment Models, which remain the primary source for updating fund balances and tracking cash flows. COCD primarily uses PIPE data for performance tracking rather than direct system interactions.
- **Asset Management Team:** The tool's outputs deliver essential data points, including payment details, projections, and adjustments, which are subsequently processed within the Asset Management Model to ensure precise and up-to-date financial tracking.

Frequency of Use: PIPE is referenced periodically by COCD, primarily for validation and financial tracking.

Challenges:

- **Manual Processes:** Publishing updates and validating data require manual effort.

- **Data Accuracy:** Ensuring consistent and accurate data consolidation across Excel models is labor-intensive.
- **Scalability Limitations:** Current workflows may not scale effectively with growing data volumes.

2. Tableau and AWS database

The AWS database, managed by Massena Consulting, serves as the central repository for critical COCD data. This database maintains essential information integrity and integrates directly with Tableau for visualization capabilities. Through this integration, Tableau transforms database content into comprehensive dashboards and reports, facilitating performance tracking and trend analysis.

Key Functionalities:

- **Centralized Storage:** AWS ensures consistent and accurate data storage.
- **Visualization and Reporting:** Tableau converts raw data into actionable visual summaries of performance metrics and trends. While Tableau is primarily used for visualization, some backend data processing is handled through ETL jobs.
- **Custom Reporting:** Enables creation of tailored reports to address specific analytical needs.

Integration Framework:

- **Database Management:** Massena manages the AWS database and ensures its integration with Tableau.
- **Dynamic Dashboards:** Tableau provides Metropolitan staff with real-time insights into portfolio performance.
- **Consistent Updates:** Massena ensures data consistency and performs regular updates to maintain reporting accuracy.

User Roles:

- **Massena Consulting:** Administers and operates the AWS database and Tableau tool.
- **Metropolitan Team:** Accesses Tableau to retrieve data, generate reports, and monitor performance.

Frequency of Use: AWS and Tableau are accessed daily for routine monitoring, with additional ad hoc use for custom reporting.

Challenges:

- **Dependence on Massena:** Metropolitan relies on Massena for database operations and data updates.
- **Limited Customization:** Tableau offers limited flexibility for Metropolitan-specific modifications.
- **Manual Adjustments:** Custom reports require additional manual input.

Secondary tools

1. Shared drive

Shared drive serves as a secure platform for exchanging information. It is used as a repository for sharing Asset Management managed files that are either too large for email or contain sensitive information.

User Roles:

- **Administrators:** Manage folder structures, permissions, and ensure file security.
- **Contributors:** Upload and manage files to support operational workflows.
- **Viewers:** Access files for review without editing rights.

Frequency of Use: The shared drive is accessed daily for document storage, organization, and retrieval.

Challenges:

- **Versioning Issues:** Lack of automated version control increases the risk of duplication or inconsistencies.
- **Scalability Constraints:** Manual processes may become unsustainable with growing file volumes.

Integration Framework Summary

1. **PIPE Integration:**
 - Data from Investment models is published to Microsoft Fabric and made available in PIPE. PIPE outputs are utilized in the Asset Management model, that maintains its own models for portfolio tracking and financial analysis.
 - PIPE outputs are validated manually before being published via nightly refreshes.
2. **AWS Database and Tableau Integration:**
 - Massena manages the integration of AWS and Tableau to provide dynamic dashboards.
 - Metropolitan users access Tableau to generate reports and monitor performance metrics.
3. **Shared Drive Collaboration:**

Acts as a repository to exchange other Asset Management managed files that are either too big for email or have sensitive info.

Processes

Overview

The function's processes are centered around three main pillars: Portfolio Acquisition, Portfolio Performance Management, and Debt Recovery Operations, each focusing on key operational areas. Collaboration between internal teams and external partners enhances these processes, leveraging expertise and support from both sides. Underpinning this structure are data management frameworks that ensure accurate and timely information is available for decision-making and strategic planning.

Key Processes

1. Portfolio Acquisition

The company acquires charged-off debt portfolios through a network of six to seven well-established debt buyers. Each buyer uses its proprietary methodology for debt classification, which may vary based on factors such as overdue terms. These debt buyers purchase multiple portfolios or tranches of debt and manage them using their individual collection systems. The buyers regularly share performance information on loans with Metropolitan, providing visibility into portfolio health.

To streamline and standardize debt performance tracking across multiple portfolios with varying formats, the company collaborates with Massena Consulting. Acting as a go-to agent, Massena oversees onboarding, communication, and control mechanisms for the debt. Upon acquiring new debt, Massena:

- Maps the data into Metropolitan's SQL database using a mapping book to unify outputs and eliminate discrepancies in language or presentation.
- Ensures that debt agencies send four critical data files—Agency file, Inventory file, Transaction file, and Disposition file—to Metropolitan via a secure FTP site daily.

Each file serves a distinct purpose:

- **Agency File:** Monitors collection agency concentrations for individual borrowers and across their book.
- **Inventory File:** Provides unit-level insights of the book, including KPIs such as recovery scores and average balances.
- **Transaction File:** Collection reporting and monitoring ERC actuals as compared to forecasts.
- **Disposition File:** Monitors statuses over time for portfolios and the borrower.

The files are integrated into the SQL database managed by Massena, where comprehensive and granular data is maintained. Metropolitan can access the raw data within the AWS database but chooses not to use it. Although the dataset is extensive, this level of granularity is indispensable for calculating the KPIs required for informed decision-making. The reporting suite is automatically updated with each database upload, and Metropolitan further refines the outputs to meet the specific requirements of the Investment Committee, often incorporating additional layers of detail based on their requests.

2. Portfolio Performance Management

Portfolio performance tracking operates across three interconnected silos:

1. **Finance Silo:** Maintains the system of records and ensures financial accuracy.
2. **Massena Team:** Manages collateral activities and oversees debt onboarding.
3. **Asset Management Team:** Integrates financial and collateral information for comprehensive portfolio insights.

The team accesses data through dashboards provided by Massena's online via Tableau application, which hosts dashboards prepared by Massena Consulting. These dashboards are customized to focus on specific

metrics for decision-making and are typically reviewed online, as the team does not frequently download data from the portal.

Dashboards used:

- Borrower Performance
- Collections – Actuals v. Forecast
- Liquidity % - Actuals v. Forecast etc.

When a dashboard is selected, the system updates it by applying filters and views tailored for management review, which may take some time. Filters can be customized to meet specific needs of the company, and Massena Consulting can modify the output format upon request. With access to data at every level of granularity, the possibilities for customization are virtually unlimited. However, additional custom reports requested outside the standard package incur extra costs, making it essential to balance value for money against the company's reporting needs.

The Finance team oversees the accounting processes for all transactions, ensuring accurate recording, reconciliation, and reporting of financial data. They collaborate with the Asset Management team to address critical payment handling. This collaboration:

- Ensures accurate allocation of payments, distinguishing between interest and principal components.
- Maintains compliance with financial regulations and contractual obligations.
- Supports the company's strategic goals, ensuring precise financial records that aid decision-making and uphold the integrity of financial systems.

3. Debt Recovery Operations

Debt recovery is managed through external agencies, which operate under their own policies and compliance frameworks. Metropolitan assesses these during underwriting to evaluate for major gaps in compliance. These agencies:

- Employ proprietary systems for managing portfolios and tracking collections.
- Provide daily data feeds to Massena for integration into the SQL database.

Massena's role in the debt recovery process includes:

- Administering Metropolitan's SQL database to ensure consistency and accuracy in tracking recovery data.
- Validating collection data from external agencies and eliminating discrepancies through standardized reporting frameworks.

The granularity of data captured in the SQL database is essential for calculating KPIs critical to decision-making, including recovery scores and delinquency trends. Payments are structured around cash flow sweeps tied to the performance of underlying consumer accounts. Funds are allocated through a pre-defined waterfall structure covering interest, fees, principal, and operating costs.

Frameworks and Deliverables

Data-Driven Approach

- Transition from Excel-based workflows to centralized systems has enhanced operational accuracy and efficiency.
- Core systems like PIPE and Tableau streamline reporting and performance tracking by integrating validated borrower data through Massena's AWS database.

Collaboration Frameworks

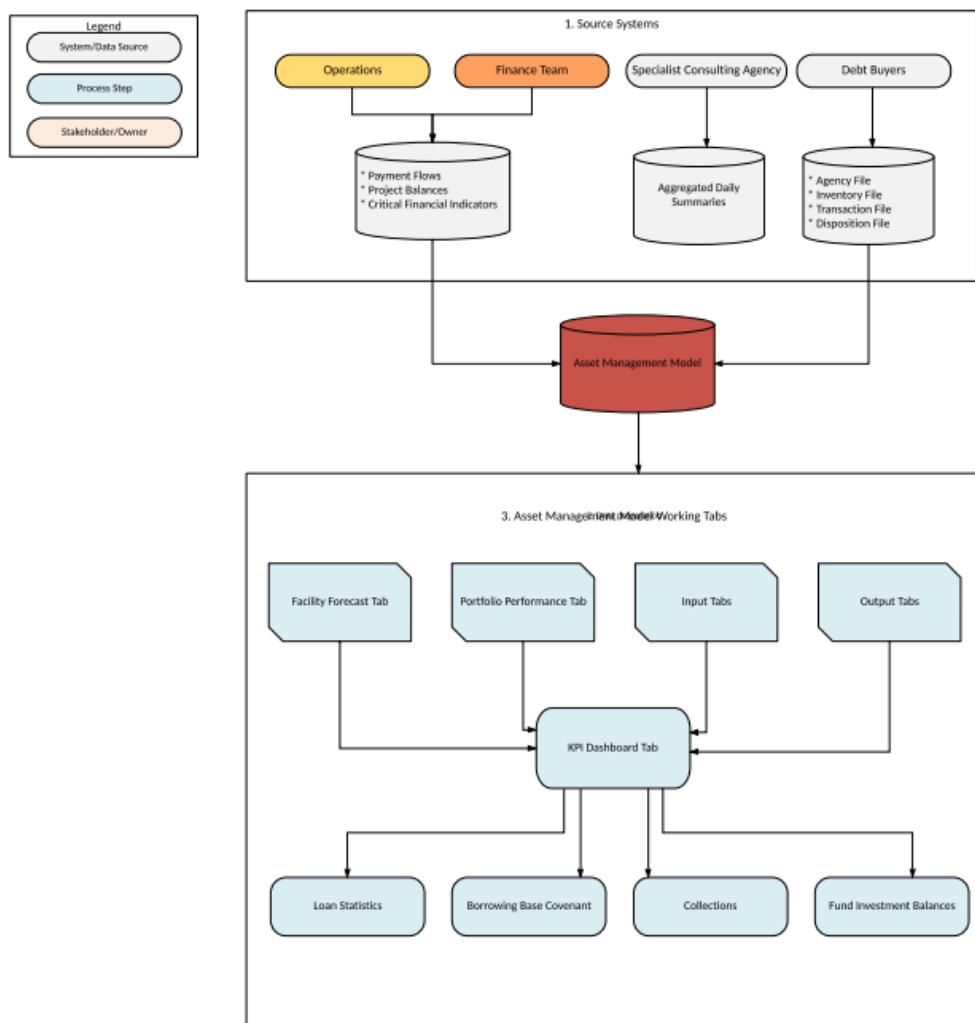
- **Borrower Engagement:** Continuous communication with debt buyers to resolve discrepancies, ensure data consistency, and monitor covenant adherence.
- **IC Engagement:** Regular discussions with the Investment Committee on portfolio performance, recovery risks, and strategic recommendations.
- **Vendor Coordination:** Ongoing alignment with Massena for data integration and validation, ensuring consistent and reliable reporting outputs.

Reports

Report Workflow Overview

The Asset Management Model plays a crucial role in supporting debt management by enabling analysis, forecasting, and reporting. Regular updates ensure accuracy and alignment with financial planning and decision-making. It serves as a key tool for effective collaboration and informed strategies.

The Asset Management model



1. Use Case

The **Asset Management Model** serves as the cornerstone of the COCD function's reporting processes, enabling robust financial tracking, portfolio performance analysis, and future cash flow projections. This model is updated within 48 hours (about 2 days) of all activity to reflect the latest data and finalized quarterly to prepare for reporting and strategic reviews. Additional data needs outside of standard workflows are directly requested from debt buyers, bypassing Massena. The file is centrally stored on a shared drive, facilitating real-time collaboration across the COCD team, Asset Management, and senior management. This shared approach ensures all stakeholders work from the same dataset, improving consistency and reducing communication inefficiencies.

2. Data Sources

The model consolidates data from three primary sources to create a comprehensive view of portfolio performance:

- **Debt Buyers:** Supply granular datasets detailing borrower and portfolio performance metrics.
- **Finance and Operations Teams:** Provide data on payment flows, project balances, and critical financial indicators, including projected collections, internal rate of return (IRR), and loan-to-value ratios (LTV).

3. Structure and Functionality of the Asset Management model

At the center of the model lies the KPI Dashboard Tab, which organizes key metrics into four sections:

1. **Loan Statistics:** This section analyzes metrics such as debt base, originating value, outstanding loan balance, gross rate, and portfolio valuation. While LTV is sourced from PIPE, other metrics are derived from debt buyer submissions.
2. **Borrowing Base Covenant:** For certain deals, expected remaining collections are recalculated using a 25-40% ERC range to evaluate actual debt base performance against recovery forecasts.
3. **Collections:** This section provides a breakdown of gross and net collections into projected and actual balances. The borrower is the primary data source, with Massena's aggregated reports serving as a secondary validation layer.
4. **Fund Investment Balances:** Fund-specific investments are tracked with unique identifiers, enabling precise monitoring of performance and financial contributions to individual projects.

4. Detailed Breakdown of Tabs in the Asset Management Model

1. **Portfolio Tab:** This tab lists all portfolios; each funding by Metropolitan is assigned a unique identifier. These identifiers link portfolios to their corresponding collection data, allowing the COCD function to monitor individual financial performance. This linkage also helps track borrower fees and other funding-specific metrics.
2. **Payments Posted Tab:** This tab mirrors the Finance managed Investment Model and provides details such as payment dates, coupon dates, principal amounts, and fund allocations. By consolidating this data, the tab offers a comprehensive view of payment activities and their alignment with financial goals.
3. **Sample Curves Tab:** The baseline curve forecasts the expected timeline for capital recovery, typically spanning 60 to 84 months (about 7 years). This timeline ensures that collection activities are aligned with projected funding return periods.
4. **Outputs Tabs (Principal, Interest, and Servicing Fees):** These tabs contain Finance-generated actual data and Asset Management forecasts the remaining portfolio information.
5. **Gross Collections, Fund Investments, and Projected Outputs Tabs:** The COCD function collaborates with Finance to ensure invoicing aligns with expected payment flows, addressing discrepancies caused by the reporting and performance of the debt buyer.

Pain Points and Challenges

The COCD function manages critical processes related to portfolio performance, borrower compliance, and reporting. Despite structured workflows and collaborative tools such as the Asset Management Model, SQL databases, and Tableau dashboards, several challenges persist. These issues are categorized below, with descriptions, impacts, and identified gaps reflecting the complexity of managing charged-off consumer debt portfolios.

1. Hurdles in Addressing Investor Data Needs

Over the past months, the team has relied on Massena to fulfill investor data requests. While effective, this process is time-intensive and subject to external availability. The delays stem mainly from insufficient integration between data sources and internal concerns about data-sharing limits with investors, making it harder to efficiently query and handle urgent requests. These issues hinder the team's responsiveness to investor needs, lowering stakeholder satisfaction and increasing pressure during peak periods when timely information is crucial.

2. Complexities in Valuing COCD Assets

Frequent changes in expected collections require continuous adjustments to valuations and performance tracking. Timing mismatches between revenue recognition and asset recovery cycles create temporary distortions in interim valuations. Calculating IRR for COCD assets is complex due to their structure, making direct comparisons with other portfolio segments difficult. These factors contribute to challenges in portfolio assessment and confidence in interim performance metrics.

3. Accessing Internal Financial Data

Collaboration with the Finance team to obtain borrower balance information requires manually opening individual investment models. The lack of seamless integration between data sources contributes to delays in decision-making and increases reliance on manual verification. Delays in obtaining accurate data impede timely decision-making and increase reliance on manual processes for verification.

4. Challenges in Report Customization Due to Cost Constraints

Customizing reports to meet operational or strategic needs is restricted by cost constraints associated with external consultants. Dependence on third parties' limits flexibility in adapting reports to new requirements, causing delays in obtaining tailored insights and reducing responsiveness to stakeholder needs.

5. Atom Invest Tool Implementation

The Atom Invest tool is designed for reporting on KPIs of the deal, financial statements, and asset details. While it has potential for structured fact sheets, its current role is primarily limited to deal-related data.

Recommendations

1. Data Sharing with Investors

Investor data requests currently depend on external reporting vendors, causing delays and inefficiencies. Internal concerns about data-sharing restrictions further hinder the ability to respond promptly, impacting stakeholder satisfaction and increasing pressure during peak periods.

Recommendation:

- A. **Develop Standardized Guidelines:** Collaborate with legal, compliance, and operational teams to create clear rules for sharing data with investors.
- B. **Embed Guidelines into Templates:** Incorporate these standards into pre-designed Power BI templates to automatically exclude sensitive or unauthorized information.
- C. **Create Investor-Specific Templates:** Design Power BI templates tailored to common investor requirements and integrate them with the unified data platform for real-time data access.
- D. **Streamline Reporting Processes:** Transition investor data handling to internal tools, reducing delays and reliance on external vendors.

2. Simplifying Valuation of COCD Assets

Frequent changes to collateral and the complexity of KPI calculations reduce confidence in interim valuations. These challenges hinder effective comparisons of COCD assets with broader portfolio segments and complicate performance assessments.

Recommendation:

- A. **Implement a Centralized Unified Data Platform:** Use the platform to manage real-time updates for accurate KPI tracking.
- B. **Automate Complex Calculations:** Leverage Alteryx/Knime to handle tasks such as interim valuations and IRR calculations.
- C. **Simulate Interim Valuations:** Use simulations to estimate valuations and revenue recognition during the deal completion process, with adjustments applied once finalized data is available.
- D. **Develop Power BI Dashboards:** Create dashboards to efficiently track KPIs and compare COCD assets with other portfolio segments.

3. Centralized Access to Financial Data

Accessing financial data involves manual processes and frequent communication with Finance, leading to delays, inaccuracies, and inefficiencies in decision-making. The lack of a centralized platform hampers the ability to access key financial metrics quickly and reliably.

Recommendation:

- A. **Integrate a Unified Data Platform:** Build a centralized system for real-time access to financial metrics like borrower balances, LTV, and IRR.
- B. **Create Tailored Dashboards:** Develop Power BI dashboards specific to team needs, enabling intuitive navigation and filtering of key metrics.
- C. **Automated Data Updates:** Ensure data is updated in real time to eliminate reliance on manual communication with Operations.

4. Internal Report Customization

Customizing reports through external consultants is costly and time-consuming, limiting flexibility and responsiveness to changing requirements or stakeholder needs. These constraints increase costs and delay access to tailored insights.

Recommendation:

- A. **Develop Internal Reporting Infrastructure:** Use the unified data platform, Alteryx/Knime, and Power BI to produce high-quality, customizable reports.
- B. **Shift Focus to Internal Reporting:** Reduce reliance on external consultants by building internal expertise and workflows for report customization.
- C. **Retain External Vendors as Backup:** Keep external vendors as a secondary resource for large-scale or overly complex reporting tasks.

5. ATOM Invest Tool Enhancement

The ATOM Invest tool is currently limited to basic sections of fact sheets and lacks the capability to handle complex analyses. This creates dependency on manual processes, slows operations, and prevents the tool from reaching its full potential.

Recommendation:

- A. **Expand Tool Functionality:** Enhance the ATOM Invest tool to handle more complex data sections, such as detailed fact sheet analyses.

- B. **Integrate Automation Features:** Use tools like Alteryx/Knime and real-time data integration to improve efficiency and scalability.
- C. **Redefine the Tool's Role:** Focus ATOM Invest on ensuring data quality, managing exceptions, and integrating with the unified data platform.

Legal

Roles and Responsibilities

1. Compliance Oversight

- Regulatory Compliance: Ensures that Metropolitan's compliance program is updated to adhere to evolving regulatory frameworks, including SEC guidelines related to marketing materials and performance data.
- Investor Oversight & Disclosure: Reviews and approves offering documents, investor communications, and financial statements. Ensures marketing materials and disclosures comply with legal and regulatory standards. Manages investor due diligence and subscription agreements.
- Trade Compliance: Implements procedures to avoid market manipulation and conflicts of interest. Ensures fair trading practices and prevents insider trading.

2. Document Management and Expertise

- Drafting, Review, and Negotiation: Handles critical legal documents, including NDAs, term sheets, and co-investment agreements, while external counsel manages certain financing agreements and provides support for various co-investment documents and term sheets.
- Standardization and Best Practices: Actively developing standardized templates for key agreements, including loan agreements. However, due to the complexity of legal documentation, automation remains limited, and successful template adoption requires coordinated efforts.
- Streamlining Processes: Initiated the creation of a "disclaimer library" to centralize pre-developed language, enabling easier and faster reuse. Expansion of the library involves leveraging various Metropolitan precedents, which currently have slight variations, to build a comprehensive resource. Consolidation of these precedents into a single, standardized repository to ensure consistency is required. The library remains a work in progress and would benefit from additional support to accelerate its development. Once completed, this resource will enhance the efficiency of legal document preparation and reduce time spent drafting recurring language.

3. Cooperation with External Legal Counsel

To manage workload limitations and handle specialized legal matters, the Legal department consults external counsel with expertise in new investments, fund formation, litigation, and regulatory compliance.

- Engagement Process: Approval is required before engaging external counsel for a new deal. For existing deals, the standard practice is to retain the counsel who worked on the original transaction unless specialized expertise is required, and litigation or other specific circumstances necessitate a change. Although formal tools for selecting counsel are not currently in place, decisions are effectively managed through quick internal discussions.
- Performance Evaluation: Semi-annual evaluations of external counsel are conducted manually. These assessments consider billing data, the number of matters handled, and feedback from colleagues.

- Reporting and Communication: External counsel provides weekly Work in Progress reports to the Legal and Finance departments. Finance consolidates these reports into a weekly summary, distributed to the Deal Team and Asset Management teams, ensuring transparency of accrued legal expenses for each deal, to provide information to Deal Team and Asset Management to manage expense deposits and borrower expectations re expenses.

4. Risk Mitigation and Dispute Resolution

The Legal department identifies and manages legal risks to prevent liabilities while providing guidance on fund formation, SPV structuring, and regulatory considerations for new projects. It also oversees and contributes to resolving disputes involving clients, counterparties, or regulators.

Organizational Structure and Collaboration

The Legal Department operates as a centralized partner, ensuring comprehensive support for the following business functions:

- Asset Management Team: Assists with deal amendments, third-party documentation review and collateral enforcement strategies.
- Deal Team: Facilitates pre-deal activities such as NDAs and term sheets, supports the selection of external counsel.
- Investor Relations Team: Oversees legal and regulatory reviews for marketing materials, fund structuring, and investor disclosures. Supports SPVs and co-investment agreements.
- Finance and Fund Accounting Teams: Guides valuation compliance, investment allocations, and regulatory adherence. Collaborates on filings, distributions, and back-testing for equal treatment to ensure transparency and fairness.
- HR Team: Advises on employment contracts, compensation structures, and workplace policies, including new hire onboarding, employee handbooks, and separation agreements, ensuring compliance with employment laws and regulatory frameworks.
- Vendor Management: Handles the review and negotiation of vendor contracts, manages renewal processes. Oversees risk management, dispute resolution, and governance processes related to vendor performance, including implementing safeguards such as liability clauses or other contractual protection.

Tools

Primary Tools

Litera

The company, along with the Legal Team, uses Litera for document comparison, redlining, and reviewing agreements such as NDAs and term sheets. It ensures consistency in legal terms, reduces manual inconsistencies, tracks amendments in investment agreements, and verifies accuracy before final execution.

Trello

Trello is used as a workflow management tool for tracking legal tasks, including contract reviews and amendment approvals. It facilitates collaboration across the Legal Team but lacks direct integration with shared drives or document repositories.

REAL

REAL Compliance Software is used for RIA compliance tracking, including monitoring gifts, entertainment, and personal trading reports. Its scope may extend to other regulatory tracking areas within the Legal Department's compliance functions.

DocuSign and Adobe Sign Electronic Signature Solutions

The Legal Team utilizes DocuSign and Adobe Pro for electronic contracts sign-off execution.

Secondary Tools

Shared drive

Legal documents are stored across multiple locations, leading to duplication and inefficiencies.

- Pre-execution: Documents are exchanged via email, often leading to multiple versions of the same document being circulated.
- Post-execution: Documents are stored inconsistently across different shared drive folders by multiple teams, including the Deal Team, Investor Relations, and other teams. This fragmentation makes it challenging to retrieve final executed versions and ensure version consistency.

While efforts have been made to organize legal records into structured folders, inconsistent filing practices across teams limit the effectiveness of this system. Legal documents are stored in various locations, including folders related to investment structures, administrative records, and investment analysis. The Legal folder is one of multiple locations where legal documents are stored, but there is no centralized repository ensuring version consistency across teams. Other key folders on the shared drive that house legal documents include Investor Relations and Deal Team folders. However, overlapping document storage across teams leads to duplication and inconsistencies in tracking the definitive version.

Pain Points and Challenges

The Legal Department at Metropolitan plays a vital role in ensuring compliance, managing risks, and supporting the organization's operational goals. However, the department faces significant challenges stemming from manual workflows and the constraints of current systems. This section outlines the key pain points and challenges encountered by the Legal Team, categorized by process areas, along with their context and impact.

1. Cumbersome document authorization process

The Legal Team relies on email-based document approvals, requiring multiple exchanges between internal and external counsel. This process is time-consuming and lacks version control, increasing the risk of misalignment in contract terms across teams.

2. Manual Legal Document Review and Extraction

Key financial data points—loan structures, covenant terms, repayment schedules, and compliance obligations—are manually extracted from contracts before being input into PIPE, LP360, and investor disclosure statements. This manual workflow is prone to human errors, which increases the risk of inaccuracies.

3. Amendment Tracking Gaps

Amendments, particularly borrower adjustments or vendor contract renewals, are inconsistently tracked, leading to incomplete or outdated records. Inaccurate tracking complicates compliance monitoring and delays downstream processes like investor reporting.

4. Challenges in Contract Review and Legal Oversight

External counsel typically manages the legal work for contracts, but the internal legal team identified an issue during their review. In this case, contradictory terms were found within the equity clause of a 180-page contract. This highlight concerns the thoroughness of legal reviews and the potential risks posed by such oversights. The contradictory terms in the equity clause could result in legal risks, such as disputes over the contract's interpretation, delays, or financial implications. It also points to potential gaps in the legal review process, raising concerns about similar oversights in future contracts.

5. Challenges Resulting from Disorganized Document Management

Managing the storage of legal documents presents challenges due to varying levels of attention to folder structures, inconsistent practices in saving documents, and differing naming conventions. Additional issues include inconsistent approaches to handling drafts, partially signed documents, final Word versions, and signed PDFs, which further complicate organization and retrieval. The disorganization of documents makes it difficult for the company to determine its obligations. With documents scattered across shared folders, including duplicates and mixed signed and unsigned versions, there is no clear overview of the responsibilities outlined in the contracts.

6. Task Prioritization Challenges

Task prioritization is currently approached on an ad hoc basis, relying heavily on intuition, such as assessing deadlines and the relative importance of tasks. Feedback from colleagues about the timing of their requests also influences prioritization. The process is highly dynamic, with priorities shifting minute by minute as new tasks and requests emerge throughout the day. The absence of a structured prioritization method results in inefficiencies and difficulty in streamlining workflows. It creates inconsistent communication, leaving colleagues uncertain about when tasks will be addressed or completed, which can lead to frustration. The reliance on intuition and constant reprioritization contributes to increased stress for those managing tasks. Additionally, this approach lacks scalability, making it harder to handle a growing volume of requests as demand increases.

Recommendations

Building on the existing initiative, implement a legal technology platform to centralize document storage, ensuring all legal files are stored in one secure location. Enforce version control to track changes and prevent duplication. Improve document access by defining permission-based controls, allowing authorized users to retrieve and edit files. Standardize naming conventions to ensure consistency across all files. Establish a structured folder system to reduce search time and eliminate confusion. Automate legal document review and data extraction to reduce manual workload and improve accuracy.

Governance and IT Oversight

Roles and Responsibilities

Omega Systems (the Firm's managed service provider ("MSP")) and Andre Cyr (the Firm's Chief Information Security Officer) (together, the "IT Provider"), manage the network and systems in which the Firm operates. They oversee a wide range of responsibilities, including managing physical and virtual servers, implementing robust backup strategies, and maintaining operational continuity through structured disaster recovery plans.

The IT Provider's responsibilities are specified throughout this Written Information Security Policy (WISP). In general, the IT Provider's duties include, but are not limited to:

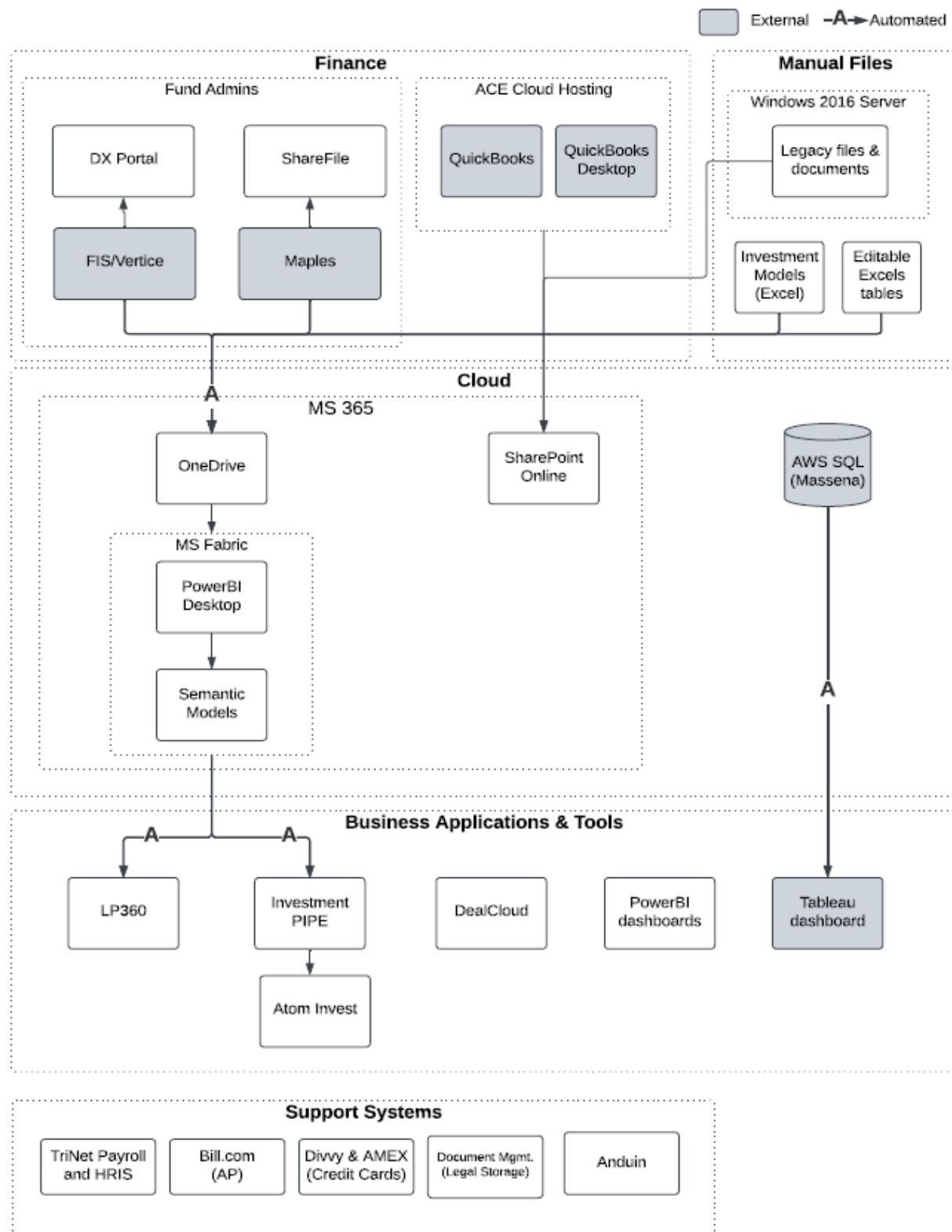
- Configuring systems and controls based on the Firm's standards.
- Monitoring the Firm's network.
- Providing assistance and support during an incident.

Metropolitan is dependent on multiple sources of data stored on local file servers, SharePoint, and OneDrive. This data is governed by the WISP, ensuring compliance and security.

System / Data Landscape and Tools

Metropolitan's IT ecosystem is a sophisticated and interconnected framework of physical servers, cloud platforms, and specialized tools designed to ensure secure, efficient, and compliant operations. The system streamlines data storage, processing, and interdepartmental collaboration, with a focus on robust security protocols and high availability.

Core Systems and Data Workflows



The diagram visually represents the core workflows:

- **Central Node:** Microsoft Fabric acts as the hub for data ingestion, transformation, and analytics.
- **Directional Arrows:** Show data flows between PIPE, LP360, Azure, DealCloud, AWS SQL, and Atom Invest.
- **Data Points:** Highlight input sources (Excel files, fund administrators, external databases) and output destinations (dashboards, reports).
- **Connections:** Illustrate real-time synchronization between OneDrive, SharePoint, and Fabric, ensuring data consistency.

The diagram showcases:

1. **PIPE Repository:**

- **Input:** Structured investment models provided by the Operations team via shared Excel files. These models include key financial data points such as accruals, principal balances, interest schedules, and repayment forecasts. Data inputs also incorporate updates on amendments, paydowns, fundings, and borrower performance metrics to maintain real-time accuracy.
- **Process:** PIPE consolidates, ingests, and standardizes the data from investment models into centralized format to support further analysis. Data is transformed into predefined structured tables that support the Power BI semantic model, ensuring users can perform accurate financial analysis. Predefined rules and calculations are applied to create a unified cash flow table. Automated processes reduce manual dependencies and provide standardized view across all investments.
- **Output:** The centralized financial metrics are seamlessly transferred to Microsoft Fabric, where they are transformed into actionable insights. Users access PIPE's outputs via Excel command, dynamically pulling structured financial metrics into pivot tables for further reporting and validation. The Power BI semantic model enables advanced KPI tracking, investment monitoring and strategic decision-making.

2. **LP360 Repository:**

- **Input:** Fund administrator extracts from systems such as FIS and Maple. These inputs consist of detailed fund-level cash flow statements, period P&L data, investor allocations, and other key performance indicators provided by external fund administrators. There are also manual excel templates created for inserting investor details and commitment used by the Investor Relations team.
- **Process:** LP360 structures and organizes investor data, track commitments, capital movements and fund and investor performance at various levels.
- **Output:** Investor data is accessible via Excel commands and queries, enabling users to extract key investor insights for reporting and ad-hoc requests efficiently. LP360 generates detailed quarterly investor dashboards and reports. These include fund summaries, individual investor contribution and distribution reports, and performance analyses. The outputs are tailored for the Finance and Investor Relations (IR) teams to facilitate accurate partner-level reporting, compliance documentation, and strategic insights into investor engagement.

3. Microsoft Fabric:

- **Input:** Data from PIPE and LP360, including aggregated financial metrics, investor-specific cash flows, and reconciled fund data. Additional inputs include shared documents and data files from SharePoint and OneDrive, contributing supplementary reference and operational data.
- **Process:** Microsoft Fabric consolidates datasets from various sources, performing necessary transformations to align data structures and ensure integrity. The system applies advanced analytics to prepare data for visualization and reporting. This centralized process supports seamless integration with reporting tools.
- **Output:** Data stored in MS Fabric is currently accessed via excel commands for both PIPE and LP360.

4. DealCloud:

- **Input:** Data is entered to DealCloud by the Deal Team, Operating Experts, Asset Management team and Investor Relations teams. These teams enter details on deal stages, portfolio companies, special purpose vehicles, operating experts, fundraising client, and investor interactions. Investor calls and mails details. Data also includes updates from pipeline activities and key client touchpoints entered during the deal lifecycle.
- **Process:** DealCloud tracks the lifecycle stages of each deal and is used by the deal team for systematic updates and centralizing information for analysis. The system allows for the categorization and monitoring of deal progress, providing visibility into key metrics and trends. It supports real-time updates, ensuring that data remains accurate and actionable throughout the pipeline.
- **Output:** DealCloud provides real-time insights into strategic CRM management, enabling the Deal Team and stakeholders to make informed decisions. These insights can be integrated into Power BI dashboards for enhanced visualization and reporting, supporting pipeline analysis

5. Azure Infrastructure:

- **Input:** Data synchronized from on-premises file servers, encompassing critical operational and system-level information managed by Metropolitan's IT infrastructure.
- **Process:** Azure Infrastructure implements geo-replication across the EAST US and region to ensure data redundancy and high availability. This process enables real-time synchronization and safeguards against data loss by maintaining multiple copies of the data in geographically separated locations. Disaster recovery protocols are embedded to support rapid failover in the event of system outages or disruptions.
- **Output:** The system delivers consistent data availability, ensuring operational continuity and seamless failover capabilities. This infrastructure supports reliable access to critical systems and datasets for all dependent teams and processes.

6. AWS SQL Database (Massena):

- **Input:** Debt-servicing and borrower data from external systems, including detailed performance metrics and repayment schedules provided by third-party managers handling written-off loans. This data is sourced directly from the borrowers or through backup servicing operations.
- **Process:** The AWS SQL Database maintains data integrity through rigorous validation processes and integrates directly with Tableau for visualization. Some backend data processing is handled via ETL jobs to prepare datasets for analysis. Massena Consulting

manages the database and ensures seamless integration with Tableau, providing dynamic dashboards for real-time insights. Regular updates are performed to maintain data accuracy and consistency across reporting.

- **Output:** The processed data is used to generate Tableau dashboards, providing the COCD team with standardized, traceable metrics for portfolio analysis. These dashboards enable detailed insights into asset performance, compliance metrics, and borrower repayment trends.

7. Atom Invest

- **Input:** investment data from PIPE, borrower's financial statements, and Asset Management tracking inputs.
- **Process:** Atom Invest aggregates data from various sources, ensuring consistency with PIPE outputs and reference tables. The platform supports seamless synchronization, streamlining asset tracking, investment monitoring, and report generation while aligning with compliance requirements.
- **Output:** Asset Management team uses Atom Invest to view data through GUI, while there is a plan to produce standardized reports and dashboards for the Asset Management team, enhancing portfolio health tracking and facilitating decision-making with real-time, traceable metrics in the future.

Tools and Usage

1. PIPE

Purpose:

PIPE is a centralized data management and analytics tool built on a semantic data model developed in Microsoft Fabric, used for semantic model creation, by a third-party provider. This model consolidates data from multiple Excel investment models stored on SharePoint, forming the foundation for consistent and streamlined reporting.

The firm collaborated with the third party to define and implement a variety of measures tailored to their specific needs. It simplifies the process of locating, extracting, and analyzing datasets stored in complex repositories.

- PIPE is designed to efficiently retrieve and extract relevant financial information on Funds. It simplifies the process of accessing specific data points or datasets stored within MS Fabric, enabling users to analyze and utilize the information without navigating through the entire system. The Pipe integrates multiple investment models into a cash flows table (approximately 600,000-700,000 rows) with measures for calculations.
- Data originates from Excel-based investment models, capturing terms, accruals, and balances. A publishing mechanism converts live files into CSV formats for integration into the data model. Key data includes reference tables for funds, deals, instruments, and price marks.
- Data ingestion relies on Power Query and manual updates (e.g., instrument and deal updates). Nightly automated refreshes exist for semantic models, but other processes require user intervention (e.g., saving changes to editable tables).

- LP360 and Pipe share fund tables but have separate data streams and unique hierarchies. Data in Pipe is processed to create a centralized cash flow table, while LP360 uses smaller, more static data sets.

Usage:

- **Operations Team:** Maintains and reconciles investment models, tracks principal and interest payments, and generates core operational reports on fund activity.
- **Asset Management Team:** Uses PIPE for tracking portfolio health, delinquent payments, and ensuring data consistency across reporting structures.
- **Finance Team:** Extracts fund-level performance data for preparing financial statements, partner reports, and compliance documentation.

Challenges:

- **Data Quality Issues:** Errors like mismatched formats, incomplete fields, or misaligned headers in investment models lead to ingestion failures. While some of this is intentional—such as fields aligning with pipe nomenclature—it still creates challenges during data integration and increases the risk of errors.
- **Manual Dependency:** Publishing investment data is straightforward (point-and-click), but updating models for activity remains time-consuming and relies on human intervention, introducing risks of delays and inconsistencies.
- **Complex Navigation:** The tool requires a basic understanding of .xls and the PIPE data dictionary. While navigating the interface is straightforward, the main challenge lies in understanding data definitions, which presents a learning curve for less-experienced users trying to extract actionable insights.
- **Inter-team Dependency:** Disjointed processes between teams using PIPE create gaps in reporting accuracy.

2. LP360

Purpose:

The tool is built on a semantic data model developed in Microsoft Fabric, using Microsoft Fabric for semantic model creation, by a third party. This model consolidates data from fund administrator system extracts, which are stored as Excel files on a shared OneDrive. These extracts serve as the primary data source, ensuring a centralized repository for investor-related information. primarily supporting the Investor Relations team, though it is underutilized as they often rely on the Finance team for information. The tool operates via MS accounts, using robotic commands and quarterly updates to generate pivot-based reports, requiring completed and verified data for each quarter. It simplifies the process of generating detailed cash flow and contribution reports.

- It is primarily used to manage investor-specific data, including assignments between LPs (limited partners) and underlying fund performance details.
- Generating investor-specific pivot-based reports through automated robotic commands.
- It aggregates data provided by external administrators, such as detailed period P&Ls, to generate comprehensive investor reports.

Usage:

- **Investor Relations Team:** Leverages LP360 for producing fund summaries, tracking investor contributions, and generating quarterly investor letters.
- **Finance Team:** Prepares partner-level statements, reconciles cash flows, and generates financial performance data for fund administrators and external reporting.
- **Operations Team:** Uses LP360 data to validate fund activity and ensure seamless coordination between internal and external stakeholders.

Challenges:

- **Underutilization:** Despite its potential, LP360 is not fully adopted by Investor Relations, who often rely on the Finance team for key reports.
- **Delayed Updates:** Quarterly reporting cycles restrict real-time data access, limiting its value for mid-period analysis.
- **Data Accuracy Issues:** Dependence on templates provided by external fund administrators increases the risk of errors during data uploads.

3. OneDrive

Purpose:

OneDrive serves as a secure cloud-based storage solution, ensuring data availability and access across devices and locations. Its integration with Microsoft tools supports:

- OneDrive is currently used as 1 of the storage mediums in the Metropolitan Group. Employees can store data in their OneDrive profiles and all data within the PIPE and LP360 repositories are also stored within the OneDrive profile of a dedicated Microsoft account created specifically for OEHM, a 3rd party vendor. Multifactor authentication is required for remote access.
- Hosts the investment models that are foundational for PIPE's data pipeline. These models are stored in shared directories accessible by the operations team, ensuring a centralized location for managing and updating investment-related files.
- Serves as the source location from which investment models are referenced and ingested into PIPE. The data pipeline relies on the directory structure in OneDrive to link models to specific securities and instruments.

Usage:

- **Operations Team:** Stores PIPE and LP360-related files in a dedicated account managed by the OEHM vendor.
- **Firm-wide:** Provides employees with secure personal and shared file storage for everyday operations.

Challenges:

- **Overlapping Systems:** Redundancies with SharePoint and local file servers create confusion and inefficiencies.
- **Permission Complexities:** Managing access control for sensitive data across multiple teams can be challenging.

[4. Atom Invest](#)

Purpose:

Atom Invest serves as the primary portfolio management platform, facilitating comprehensive tracking, analysis, and reporting of investment performance. The system supports departmental objectives through streamlined portfolio company management, precise financial data maintenance, and standardized performance metric tracking. It supports:

- Centralized tracking of portfolio company performance metrics.
- Standardized maintenance of financial data and valuations.
- Streamlined workflows for compliance tracking and integration with operational processes.

Usage:

- **Asset Management Team:** Tracks and analyzes portfolio company performance, ensuring accuracy in valuations and monitoring.
- **Operations Team:** Supports compliance monitoring and collaboration with external systems for seamless data synchronization.

Challenges:

- **Data Silos:** Limited integration with PIPE and LP360 hinders unified reporting and analysis.
- **Adoption Challenges:** Low adoption across other teams reduces the potential for holistic performance tracking.

[5. DealCloud](#)

Purpose:

DealCloud is a CRM and pipeline management platform that supports deal lifecycle tracking and reporting by:

- Managing the progress of deals through various stages.
- Automating workflows for sourcing requests and client interactions.
- Providing centralized dashboards for tracking deal metrics/facts and generating pipeline reports.

Usage:

- **Deal Team:** Tracks deal progress, generates pipeline reports, and manages client interactions.
- **Operations Team:** Supports compliance by validating deal-level data against fund metrics.

- **Investor Relations Team:** Leverages DealCloud for pipeline updates and prospective investor presentations, tracks meetings and notes from calls within the system. They keep contact lists and do mass communications to investors.
- **Operating Experts:** Leverages DealCloud as the central hub for managing all processes and data. Team has transitioned from excel and developed a custom OE module, that allows them to analyze data from different perspectives.

Challenges:

- **Inconsistent Data Entry:** New fields introduced in the database are not consistently backfilled for older deals, resulting in incomplete historical records. Lack of structured training has led to input errors, reducing data quality.
- **Underutilization:** Advanced features remain unused due to limited familiarity and insufficient training, for example the absence of processes for distinguishing add-ons from new deals inflates deal counts and skews reporting metrics.
- **Manual Dependencies:** Outdated macros and manual processes hinder system efficiency and compromise data accuracy.

6. AWS SQL Database (Massena)

Purpose:

The AWS SQL Database managed by Massena Consulting serves as the central repository for critical COCD data, supporting:

- Centralized storage of essential COCD data, ensuring data integrity and consistency.
- Integration with Tableau for generating dashboards and reports that facilitate performance tracking and trend analysis.
- Custom reporting capabilities to address specific analytical needs.

Usage:

- **COCD Team:** Analyzes portfolio performance and tracks borrower repayment patterns.
- **Massena Consulting:** Manages the AWS database, performs data updates, and ensures integration with Tableau.

Challenges:

- **Dependence on Massena:** Metropolitan relies on Massena for database operations and updates, limiting internal control over data management.
- **Limited Customization:** Tableau integration offers restricted flexibility for Metropolitan-specific modifications.
- **Manual Adjustments:** Custom reports often require additional manual input, reducing efficiency and increasing the risk of errors. It facilitates secure communication and document management, particularly for externally administered funds.

7. Tableau

Purpose:

Tableau is a visualization platform used by Massena, for presenting complex data in accessible formats. They enhance decision-making by:

- Enabling dynamic dashboards and reports from tools like PIPE, LP360, and Massena.
- Supporting advanced analytics for portfolio and fund performance metrics.

Usage:

- **Finance Team:** Creates dashboards for fund-level performance tracking.
- **Operations Team:** Uses Tableau for COCD borrower tracking and reporting.

Challenges:

- **Low Adoption:** Minimal use of Power BI despite its potential for firm-wide analytics.
- **Fragmented Usage:** Lack of integration into workflows reduces its impact.

8. SharePoint

Purpose:

SharePoint facilitates document management and collaboration, ensuring consistent and secure access to shared files. It supports:

- Centralized document repositories for legal templates, operational workflows, and compliance data.
- Integration with Office 365 for collaborative editing and real-time updates.

Usage:

- **Firm-wide:** Manages shared project files and ensures accessibility across departments.
- **Legal Team:** Maintains agreements and ensures document consistency.

Challenges:

- **Redundancy:** Overlaps with OneDrive and local file systems reduce efficiency.
- **Manual Processes:** Moving files to and from SharePoint adds operational overhead.

9. Anduin – FIS Admin Tool

Purpose:

Anduin is used for streamlining the investor onboarding process. It supports the fund new subscription process, including the collection of necessary documents, as well as managing KYC (Know Your Customer) and AML (Anti-Money Laundering) procedures.:.

- The tool helps manage new investors, track their subscription processes, and potentially oversee investor transfers.
- Anduin ensures compliance with legal and regulatory requirements by automating key aspects of onboarding, improving both the accuracy and efficiency of the process for new and existing investors.

Challenges:

- **Custom Workflows:** Setting up tailored workflows involves complexities that need technical expertise.
- **Data Formats:** Compatibility with data formats or exporting/importing requirements might pose difficulties.

Infrastructure Management

Infrastructure Overview

Metropolitan's IT infrastructure is built to ensure high availability, redundancy, and efficient resource management through the combination of physical and cloud-based systems. The infrastructure is designed to handle operational demands while ensuring continuity during unforeseen events.

- **Physical Servers in New York:** Metropolitan utilizes two physical hosts located in its New York office for hosting a variety of virtual machines:
 1. **METPG-NYC-ESXi01:**
 - **DC01 (Domain Controller):** This server manages and authenticates security and access requests within the domain, playing a critical role in maintaining network security and operations.
 - **FS01 (File Server):** Serves as the primary repository for storing and managing shared data files, making them accessible to other networked devices.
 - **Vcenter02:** Provides centralized management of the VMware vSphere environment, allowing administrators to efficiently allocate and monitor virtual machines and resources.
 2. **METPG-NYC-ESXi02:**
 - **DC02 (Domain Controller):** Acts as a redundant domain controller to ensure load balancing and fault tolerance.
 - **FS02 (File Server):** Mirrors FS01 to provide data redundancy and support disaster recovery.
 - **VDA01 & VDA02:** Previously utilized virtual desktop systems, currently turned off, which were used by OEHM, a third-party vendor.
 - **Vcenter02:** Ensures efficient management of the VMware infrastructure.

FS01, the main file server within the IT infrastructure, replicates data live to Azure's FS01 to enhance redundancy and facilitate seamless failover.

- **Azure Cloud Resources:** To complement its physical infrastructure, Metropolitan hosts critical systems in Azure's cloud environment:
 1. **METPG-AZ-DC01 (Domain Controller):** A virtualized domain controller providing redundancy for authentication services.
 2. **METPG-AZ-FS01 (File Server):** This server replicates data live from the on-premises FS01, ensuring uninterrupted access to files in case of on-site server failures.
 3. **METPG-AZ-VD-0 (Domain Controller):** Adds another layer of redundancy to the firm's domain control capabilities.

This hybrid infrastructure setup ensures operational scalability, high performance, and robust disaster recovery mechanisms.

Backup and Recovery

To ensure data resiliency, the Metropolitan IT team has implemented various backup procedures using different technologies:

- **Microsoft 365 Backup:** Metropolitan uses Barracuda software to perform daily backups with unlimited retention. These backups include:
 - SharePoint Online
 - OneDrive
 - Exchange
 - Teams
- **File Server Backups:** The on-premises file server in the New York office (FS01) and its mirror (FS02) are backed up twice daily using VEEAM. Backups are retained for 30 days (approximately 1 month). This ensures that data stored on critical virtual machines (FS01, DC01, and DC02) is consistently available.
- **Azure File Server Backup:** The Azure-based mirror of FS01 is backed up daily using Azure Backup, with a 30-day retention policy. To further enhance resiliency, Azure Backups are replicated between EAST US and WEST US regions through Cross-Regional Replication based on Azure Availability Zones.

Business Continuity

The Metropolitan Group has created a comprehensive Business Continuity Plan (BCP) to address both internal and external disaster scenarios:

- **Internal Disaster Preparedness:** Internal disasters affect only the firm's ability to communicate and conduct business. The firm mitigates this risk through the NetExtender VPN, installed on all supervised personnel laptops, providing seamless connectivity to on-premises servers. QuickBooks, SharePoint, and email services remain accessible remotely via Microsoft's hosting services (M365), ensuring business continuity.

- **External Disaster Mitigation:** External disasters impact the firm and other organizations. To address such scenarios, the firm utilizes Azure VPN for failover to a hot backup site hosted in Azure. Ace Cloud hosting is also accessible via remote desktop to maintain QuickBooks functionality.

Additionally, all backups are stored securely in Microsoft data centers. Data and network configurations are backed up nightly using Veeam, with a 30-day retention policy. All electronic communications are archived by Global Relay, a third-party service provider, and retained for at least five (5) years

Security Governance

The Written Information Security Policy (WISP) was created by Metropolitan to establish standards related to the confidentiality, integrity, and availability of data. The Chief Compliance Officer (CCO) is responsible for administering the WISP. Network Doctor (the firm's managed service provider, MSP) and Andre Cyr (Chief Information Security Officer, CISO) jointly manage the network and systems under the WISP guidelines.

Key responsibilities under the WISP include:

- Configuring systems and controls based on the firm's standards.
- Monitoring the firm's network for compliance and security.
- Providing assistance and support during incidents to ensure quick resolution and minimal disruption.

Pain Points and Challenges

1. Data Silos and Integration Gaps

A significant challenge is the lack of seamless integration between core tools like PIPE, LP360, Atom Invest, and external platforms such as Tableau and AWS SQL (Massena). This fragmented ecosystem results in:

- **Isolated Data Sources:** Teams work in silos, using disconnected tools, leading to duplication of effort and inconsistent datasets.
- **Limited Data Flow:** Incomplete integration hinders real-time updates, requiring manual intervention to synchronize data across systems.
- **Inefficiencies in Reporting:** Inadequate linkage between tools necessitates ad hoc solutions to combine and reconcile data for comprehensive reporting. For example, many fields in DealCloud are optional or lack validation, leading to incomplete or inaccurate entries. Inconsistent data reduces the reliability of analytics and decision-making.

2. Overreliance on Manual Processes

Many workflows depend heavily on Excel and manual inputs for critical activities like investment model updates, PIPE publishing, and LP360 report preparation. These dependencies lead to:

- **Error-Prone Operations:** Human errors, such as incorrect data formats or mismatched values, can propagate across reports and models, causing inaccuracies. Reports like the Pipeline Report rely on manual data extraction, copying, and pasting. The macro used in the report is undocumented and might be difficult to troubleshoot in case of errors.
- **Delayed Processing:** Manual data entry and verification slow down critical processes like quarterly reporting, investor communication, and pipeline updates.
- **Resource Strain:** Teams dedicate significant time to repetitive tasks that could be automated, reducing productivity and innovation opportunities.

3. Inconsistent Data Governance

Inconsistent practices in data entry, validation, and maintenance across tools like DealCloud, PIPE, and LP360 create challenges such as:

- **Variable Data Quality:** Errors in data input, missing fields, and outdated information lead to discrepancies in outputs, especially when different teams use overlapping datasets.
- **Lack of Standardization:** Different teams apply inconsistent business rules and KPIs, making it difficult to reconcile or compare data across departments.
- **Ownership Ambiguities:** Unclear roles and responsibilities for managing shared datasets, such as those in LP360 or DealCloud, contribute to confusion and inefficiencies.

4. Training and Adoption Barriers

Despite the availability of advanced tools like Power BI, DealCloud, and Atom Invest, their adoption remains limited due to:

- **Knowledge Gaps:** Employees often lack adequate training to fully utilize advanced features, reducing the potential ROI on these tools.
- **Resistance to Change:** Teams accustomed to legacy tools and manual workflows are hesitant to transition to new systems, perpetuating inefficiencies.
- **Misaligned Usage:** Tools like DealCloud are not consistently used according to their intended design, leading to fragmented processes and reduced functionality.

5. Reporting and Analytics Limitations

The lack of a unified approach to reporting and analytics introduces challenges such as:

- **Redundant Efforts:** Multiple teams generate similar reports using different tools and workflows, leading to wasted resources.
- **Delayed Insights:** Quarterly cadences for LP360 updates and manual reconciliations in PIPE limit the ability to access timely data.
- **Visual Limitations:** Low adoption of visualization platforms like Power BI results in less effective reporting and limited stakeholder engagement.

6. Redundancy and Overlapping Tools

The coexistence of tools like OneDrive, SharePoint, and local file servers creates operational inefficiencies, including:

- **Version Control Issues:** Files stored across multiple platforms risk becoming outdated or overwritten without proper synchronization.
- **Wasted Resources:** Maintaining multiple systems with overlapping functions adds unnecessary costs and administrative burden. For example, Investor-related information is scattered across LP360, DealCloud, and other platforms. This fragmentation requires the team to depend on data inputs from Deal, Asset Management, Operations, and Finance teams, making it difficult to obtain consistent and accurate records.

7. Dependency on External Vendors:

While tools like AWS SQL (Massena) and OEHM-managed OneDrive accounts provide valuable functionality, reliance on third-party vendors introduces challenges:

- **Data Redundancy:** Parallel manual tracking duplicates efforts already handled by vendors, creating inefficiencies.
- **Access Limitations:** Teams have limited visibility into vendor-managed data pipelines, delaying internal processes and reducing autonomy.
- **Scalability Concerns:** Vendor systems may not align with Metropolitan's evolving data strategies, requiring future overhauls. Also from a cost perspective, minor adjustments incur additional fees, limiting flexibility in adapting reports to new requirements.
- **Support Reliance:** Dependency on external support teams, such as the DealCloud support team, hinders agility when creating new functionalities, implementing updates, or adjusting measures. The Operations team and OEHM are often required to handle updates, slowing the process.

8. System Downtime and Refresh Failures

Automated processes, such as nightly PIPE updates or LP360 data ingestion, occasionally experience failures, leading to:

- **Delayed Workflows:** Teams must manually troubleshoot or re-run processes, disrupting project timelines.
- **Data Inconsistencies:** Partial or failed updates result in mismatched or incomplete datasets in subsequent analyses. The team reported that two systems might contain different results for the same field leading to discrepancies (e.g. Deal Team/Asset Management owner was updated, sector or pillar might also change over time).

9. Strategic Misalignment Across Teams

Disparate objectives and processes across departments, including Operations, Asset Management, and Finance, create challenges in aligning data and tools, such as:

- **Conflicting Metrics:** Different KPIs and reporting standards used by departments complicate firm-wide decision-making.
- **Unclear Communication Channels:** Inefficient collaboration between teams relying on the same tools, like PIPE or DealCloud, delays output and fosters inefficiencies.
- **Missed Optimization Opportunities:** Lack of cross-departmental strategy for tool usage results in underutilized features and duplicative efforts.

Recommendations

Architecture and Infrastructure recommendations are covered in next section '*Recommendations (Cross Departmental)*'.

Recommendations (Cross Departmental)

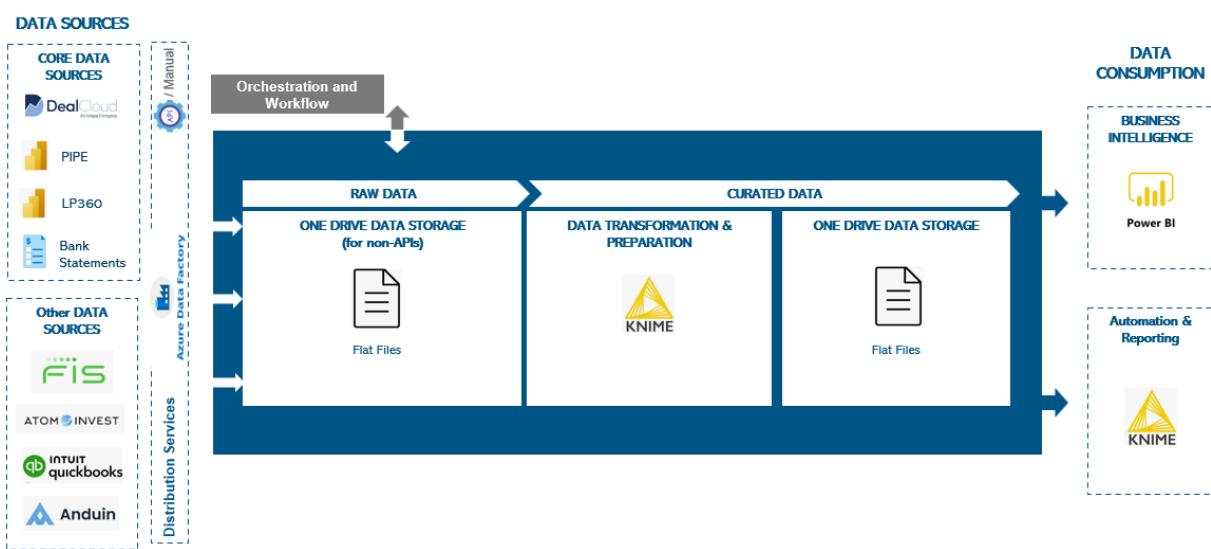
Infrastructure and Architecture

Scenario 1: Project Oriented Workflow-Driven Data Processing

Scenario Architecture Diagram

Metropolitan – Workflow-Driven Data Processing

Future State Architecture



Proposed Infrastructure

The Project/Report-Oriented Solution without a Data Warehouse relies on decentralized data handling, where simplified Alteryx/KNIME-based architecture (without a Data Lake or SQL Database), data will be extracted directly from source systems and stored in flat files or processed in-memory, depending on the workflow. It avoids the need for centralized storage, instead leveraging tools like Excel, CSV files, or small-scale databases for specific departmental or project-level needs. This solution is simple to implement and cost-effective in the short term, as it does not require significant infrastructure investments.

However, the decentralized nature of this solution leads to fragmentation of data, which becomes inefficient as organizational needs grow. It is not designed for scalability or complex analytics, and governance is minimal, which increases the risk of inconsistent data quality and reporting errors. While

suitable for small organizations with limited budgets or straightforward reporting needs, this approach struggles to support long-term growth or advanced analytics use cases.

Overview of the Architecture

1. Data Sources

Data is extracted directly from:

- APIs: Direct connections to tools such as DealCloud, Atom Invest, Anduin, QuickBooks, and Fund Admin Exports
- Manual File Uploads: Portfolio company reports, investment models, fund administrator extracts, and bank statements
- Other Data Sources: Additional ad-hoc sources for specific reporting needs

2. Data Extraction & Transformation (ETL Process)

- Extracts only required data instead of full system datasets
- Transformation handled within Alteryx or KNIME, avoiding the need for SQL-based data processing
- Common transformations include:
 - Data cleaning (removing duplicates, handling missing values)
 - Joining investor, fund, and deal data from multiple sources
 - Calculating key metrics
 - Formatting data for Power BI or reports

3. Data Storage & Processing

- No centralized SQL database or Data Lake
- Transformed data is stored as flat files (CSV, Excel, Parquet) on:
 - SharePoint or OneDrive for access by Power BI
 - Internal shared drives for local processing and report generation
- Alteryx/KNIME handles all transformations instead of database queries

4. Data Consumption & Reporting

- Power BI: Connects directly to cleaned flat files generated by Alteryx/KNIME
- Alteryx/KNIME: Automates data refresh, calculations, and report generation
- Report & Dashboard Automation:
 - Automated pipelines generate and distribute reports
 - Power BI dashboards visualize the cleaned data

Key Considerations:

Advantages

- Low Initial Costs

- Minimal upfront investment as there is no centralized storage or advanced integration tools required.
 - Lightweight solutions like Excel, CSV files, or small databases are cost-effective and easy to implement.
- **Simple Implementation**
 - Does not require complex ETL pipelines, advanced tools, or substantial technical expertise for setup.
 - Integration with APIs can be handled through manual scripts or simple workflows.
- **Sufficient for Small-Scale Reporting**
 - Suitable for firms with basic reporting needs, where data volumes are low, and reports are straightforward.
- **Flexibility for Quick Changes**
 - Manual workflows and decentralized approaches allow teams to quickly adapt without relying on rigid systems.
- **Minimal Ongoing Costs**
 - No recurring costs for data warehouses or complex analytics tools.
 - Operational expenses remain low due to limited reliance on cloud resources.
- **Quick Time-to-Value**
 - Can be set up and operational in a short timeframe, delivering value without significant delays.

Disadvantages

- **No Centralized Data Management – Absence of “One Source of True Solution”**
 - Data is fragmented across teams and tools, leading to inconsistencies and difficulty in maintaining a single source of truth.
 - Elevated risk of data duplication or errors in reporting.
- **Limited Scalability**
 - As data volumes grow or reporting needs become complex, this solution struggles to handle larger workloads efficiently.
 - Lacks the ability to scale with the firm’s growth.
- **Lack of Automation**
 - Heavy reliance on manual processes increases the likelihood of errors and inefficiencies.
 - Limits the firm’s ability to automate recurring reporting workflows.
- **Inability to Handle Diverse Data:**
 - Focused solely on structured data, with no support for unstructured or semi-structured formats
- **Low Reliability**
 - Decentralized systems are prone to operational disruptions, as data must be manually managed and updated across multiple tools.
 - High dependency on individual users for maintaining data integrity.
- **No Advanced Analytics**
 - Cannot support advanced analytics, such as portfolio forecasting or machine learning, due to the absence of centralized and scalable data infrastructure.

High Level Infrastructure Costs

Cost Category	Estimated Cost (USD)	Details
Storage in Azure Data Lake	N/A	no centralized storage
Data Ingress Costs	N/A	
Data Egress Costs	N/A	
ETL/Integration Tools	\$1,000–1,500	Simple API scripts or manual workflows
Azure Functions for OneDrive	N/A	
BI Tool (Power BI)	\$400–600	2-3 PRO licenses
Analytics Tool	\$0-90,000	Based on tool and its components (Alteryx Server ~\$80,000, Alteryx Designer ~5,000 KNIME Server ~ \$39,000, KNIME Desktop Free Workflows can be orchestrated without server)
Governance and Monitoring	\$50-200	Minimal
Licenses for QuickBooks, etc.	N/A	
API Integration Overhead	\$1,000-1500	Simple API scripts or manual workflows

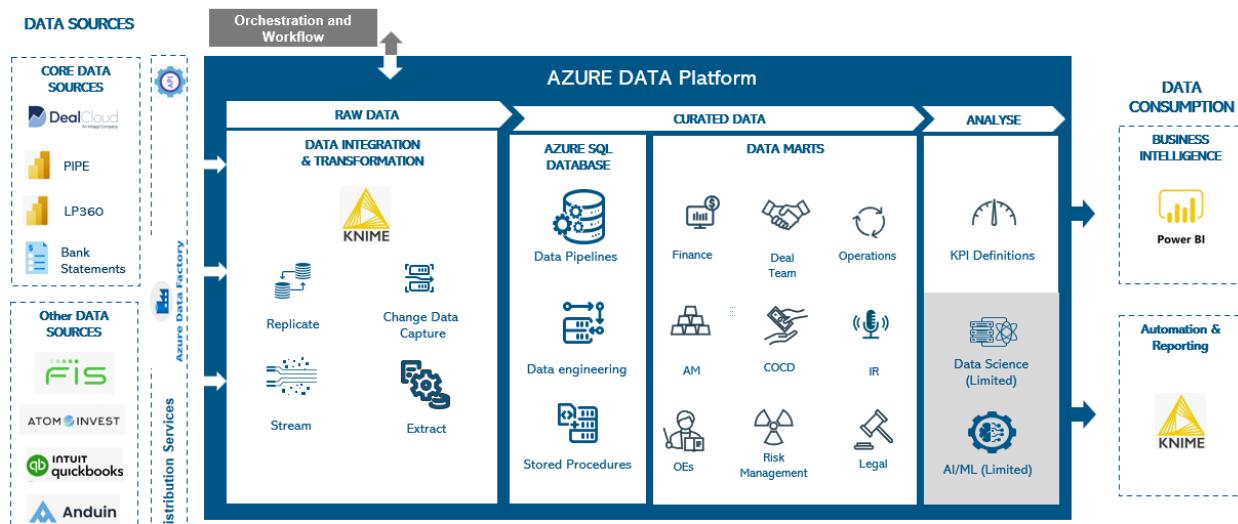
IMPORTANT NOTE: the above estimates are purely related to Infrastructure costs and do not contain Implementation / resource costs.

Scenario 2: Project Oriented Targeted Data Warehouse

Scenario Architecture Diagram

Metropolitan – Project Oriented Targeted Data Warehouse

Future State Architecture



Proposed Infrastructure

The Project/Report-Oriented Solution with a Data Warehouse focuses on centralized, structured data storage tailored for analytics and reporting. It is built on a traditional data warehouse model, where data is extracted, transformed, and loaded (ETL) into a structured format optimized for querying. This makes it ideal for predefined reporting needs and business intelligence use cases, as it allows for fast and efficient analysis of structured data.

Unlike a data lake, a data warehouse is less flexible when it comes to handling semi-structured or unstructured data. It is best suited for organizations with a strong focus on relational data and where data volume growth is predictable. While easier to implement and govern than a data lake, its scalability can become costly as data volumes increase. Additionally, it offers limited support for real-time processing, focusing instead on batch workflows for data updates. This solution is ideal for businesses that prioritize structured data analytics and do not require the complexity of unstructured or streaming data integration.

Overview of the Architecture

1. Data Sources

Data is extracted directly from:

- APIs: Direct connections to tools such as DealCloud, Atom Invest, Anduin, QuickBooks, and Fund Admin Exports

- Manual File Uploads: Portfolio company reports, investment models, fund administrator extracts, and bank statements
- Other Data Sources: Additional ad-hoc sources for specific reporting needs

2. Data Extraction & Transformation (ETL Process)

- Extracts only required data instead of full system datasets
- Transformation handled within Alteryx or KNIME, avoiding the need for SQL-based data processing
- Common transformations include:
 - Data cleaning (removing duplicates, handling missing values)
 - Joining investor, fund, and deal data from multiple sources
 - Calculating key metrics
 - Formatting data for Power BI or reports

3. Data Storage and processing

- Transformed data is stored in Azure SQL Database.
- The database contains structured tables optimized for reporting and analytics.
- Data marts are created to serve departmental needs (e.g., Investor Relations, Finance, Compliance).

4. Data Consumption & Reporting

- Power BI connects directly to the SQL database to visualize reports and dashboards.
- Alteryx (or KNIME) automates further data analysis, reporting, and scheduled workflows.

Key Considerations:

Advantages

- **Optimized for Structured Data:**
 - Warehouses like Azure Synapse Analytics are purpose-built for handling structured data, making them ideal for transactional and relational data from systems like QuickBooks, DealCloud, and Maples
- **Fast query performance**
 - Designed for high-speed querying and reporting with pre-defined schemas, enabling efficient generation of dashboards and reports for investors and deal teams.
- **Simple governance**
 - It is easier to implement governance frameworks compared to a data lake, as all data follows structured formats.
- **Ease of use**
 - User-friendly reporting tools like Power BI integrate seamlessly with warehouses, allowing non-technical users to easily create and interpret reports.
- **Lower initial complexity**
 - The setup and integration effort is less demanding compared to a data lake, as the focus is on structured data and predefined pipelines.

- **Scalability for growth**
 - Scales well for moderate data volumes and reporting needs, particularly in small-to-medium investment firms with growing deal pipelines and transactional data

Disadvantages

- **No Centralized Data Management – Absence of “One Source of True Solution”**
 - Not complete firm data is loaded into SQL Database
- **Limited Flexibility:**
 - Not suitable for unstructured or semi-structured data (e.g., OneDrive documents, PDFs, etc.) without significant preprocessing.
- **Real-Time Data Challenges:**
 - Best suited for batch processing rather than real-time data ingestion. Real-time integration would require additional tools like Azure Functions, increasing complexity and costs.
- **Scalability Limitations:**
 - While scalable for structured data, the cost increases significantly with higher data volumes, making it less cost-effective for rapidly growing datasets.
- **Dependent on ETL Pipelines:**
 - Relies heavily on ETL tools like KNIME, Alteryx, Azure Data Factory to preprocess and structure data before ingestion, adding to operational complexity and cost.

High Level Infrastructure Costs

Data Volumes:

- Structured data from QuickBooks, DealCloud, and Maples: ~1 TB/year.
- Minimal unstructured data (e.g., reports and outputs for Power BI dashboards).

Integration Tools:

- Azure Data Factory: Used for ETL pipelines to process and load data into the data warehouse.
- APIs to integrate with QuickBooks, DealCloud, Maples, and other systems.

Analytics Tools:

- Azure Synapse Analytics: Centralized data warehouse for structured data, optimized for querying and reporting.
- Power BI Pro: Reporting and dashboarding for ~10 users.

Time Frame:

- 1-year estimate for recurring costs (excluding initial setup and migration costs).

Cost Category	Estimated Cost (USD)	Details
Storage in Azure Data Lake	\$1,100–1,400	(1 TB structured storage) Azure Synapse Analytics storage costs: Minimal unstructured data (e.g., reports and outputs for Power BI dashboards)
Data Ingress Costs	Free	Ingress data transfer within Azure is free.
Data Egress Costs	\$500–800/year	Limited external sharing/export of ~5–10 TB/year, charged at \$87/TB.
ETL/Integration Tools	\$1,200–6,000 (Azure Data Factory pipelines)	Azure Data Factory: ~\$100–500/month (depending on pipeline frequency and volume).
Azure Functions for OneDrive	N/A	do not handle unstructured data Azure Functions is primarily needed for event-driven ingestion of such data in the Data Lake-Based Solution
BI Tool (Power BI)	\$400–600	2-3 PRO licenses
Analytics Tool	\$0-90,000	Based on tool and its components (Alteryx Server ~\$80,000, Alteryx Designer ~5,000 KNIME Server ~ \$39,000, KNIME Desktop Free Workflows can be orchestrated without server)
Governance and Monitoring	\$500–800	Basic monitoring
Licenses for QuickBooks, etc.	Included in existing subscriptions (to be verified)	Integration costs assume existing subscriptions for QuickBooks, DealCloud, and Maples APIs.
API Integration Overhead	\$2,000–4,500	API integration with specific systems (DealCloud, Maples, OneDrive, Atom Invest, QuickBooks), primarily focused on batch data processing optimized for structured data. Costs reflect standard ETL workflows with periodic data refresh schedules.

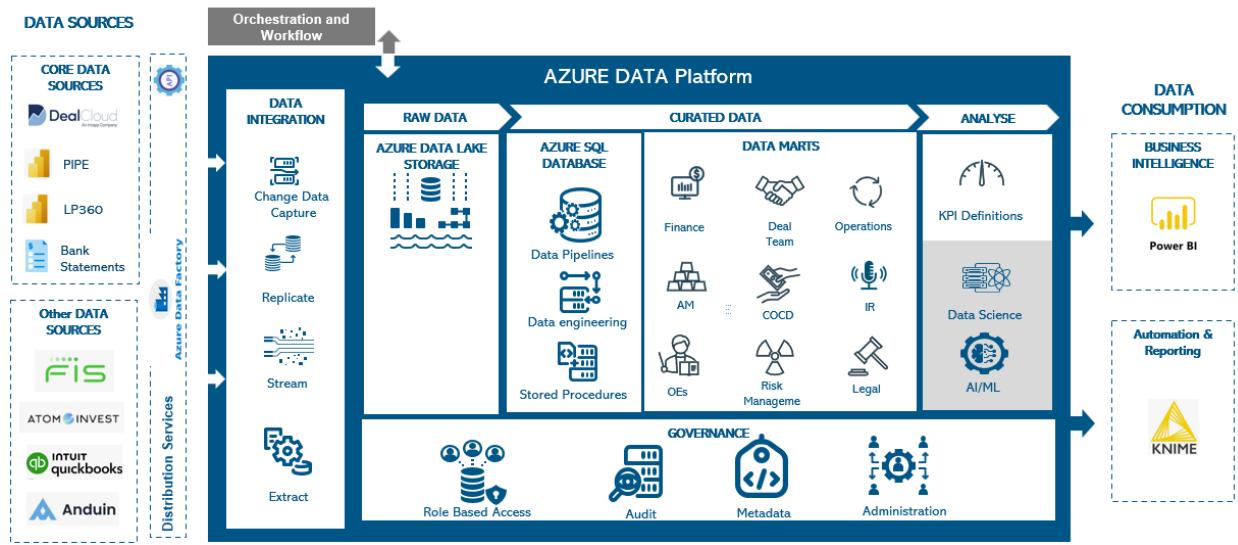
IMPORTANT NOTE: the above estimates are purely related to Infrastructure costs and do not contain Implementation / resource costs.

Scenario 3: Full Enterprise Data Lake

Scenario Architecture Diagram

Metropolitan – Full Enterprise Data Lake

Future State Architecture



Proposed Infrastructure

The Data Lake-Based Solution is a centralized repository that stores structured, semi-structured, and unstructured data in a scalable and cost-effective manner. It is designed to handle diverse data types, including relational databases, logs, and more, making it highly versatile for modern business analytics. By decoupling data storage from processing, a data lake provides flexibility in terms of integrating advanced analytics tools such as machine learning, and real-time streaming data.

This solution supports tiered storage (hot, cool, and archive), optimizing costs based on the frequency of data access. However, the flexibility and scalability of a data lake come with complexity. Implementing a data lake requires a robust governance framework to manage data quality, metadata, and access controls. Without these measures, the data lake risks becoming a “data swamp,” where information is disorganized and difficult to use. Organizations with diverse data needs, advanced analytics goals, and growth potential can benefit from a data lake, despite its higher initial costs and setup complexity.

We propose an Azure-based data architecture as the firm already utilizes Microsoft tools, including Power BI and Fabric environment, making Azure the most seamless and cost-effective choice. Leveraging Azure ensures native integration with existing infrastructure, enhances scalability and security, and aligns with industry best practices for data management. Additionally, Azure’s ecosystem provides efficient data processing, automation, and analytics capabilities, enabling a centralized and future-proof solution tailored to the firm’s needs.

Overview of the Architecture

1. Data Sources

Data is collected from multiple systems through APIs and file-based ingestion, ensuring structured and standardized data intake.

- APIs: Automated ingestion from systems like DealCloud, Atom Invest, QuickBooks, Anduin, and Fund Admin Systems
- Manual File Uploads: Portfolio company reports, investment models, fund administrator extracts, and bank statements
- Existing Power BI Models (LP360 & PIPE): Used as additional data sources without redundant ingestion

2. Data Extraction & Transformation (ETL Process)

- Data is first ingested into the Data Lake as raw structured/unstructured data
- Initial transformations are applied to clean, validate, and standardize the data
- Data Pipelines (Azure Data Factory) process and move data from the Data Lake to the SQL Database
- Common transformations include:
 - Data cleansing (removing duplicates, handling missing values)
 - Joining investor, fund, and deal data from multiple sources
 - Calculating key metrics (IRR, TVPI, DPI, commitments, exposure)
 - Data type standardization for structured storage

3. Data Storage & Processing

- Azure Data Lake (Raw Storage)
 - Stores unstructured/structured data in its raw form for historical tracking
 - Ensures auditability and long-term data retention
 - Enables re-processing of past data if needed
- Azure SQL Database (Curated & Structured Data)
 - Processes cleaned and transformed data for reporting and analytics
 - Stores finalized data marts for each business function (IR, Asset Management, Finance)
 - Supports SQL-based queries for dashboarding, reporting, and analytics
- Dedicated Data Marts are built in SQL Database to serve business needs efficiently
- Each department (IR, Asset Management, Finance, etc.) gets structured datasets tailored to their needs
- KPI calculations, historical tracking, and benchmarking are stored centrally
- Ensures a Single Source of Truth (SSOT) for reporting

4. Data Consumption & Reporting

- Power BI Dashboards: Directly connects to SQL Database for real-time access to curated data
- Alteryx/KNIME Automation: Used for
 - Data enrichment and additional processing
 - Report automation and scheduled data extractions
- Ad-hoc Queries & Analysis:
 - SQL-based reporting for power users

- Power BI models can extend analysis

Key Considerations:

Advantages

- One source of True approach
- Scalability
 - Supports both structured (e.g., financial records) and unstructured data (e.g., documents, investor reports) with virtually unlimited storage capacity.
 - Cost-effective tiered storage options (hot, cool, archive) reduce expenses as data grows.
- Flexibility
 - Can ingest data from diverse sources like QuickBooks, DealCloud, Maples, and OneDrive without rigid data schemas.
 - Easily integrates with advanced analytics tools (e.g., Power BI, Python, AI/ML models).
- Centralized Access
 - Serves as a single source of truth for all data, enabling consistent reporting and reducing data silos across teams.
- Future-Proof
 - Designed to handle high data growth, streaming data, and advanced analytics use cases (e.g., portfolio forecasting, IoT data).
- Real-Time Data
 - Supports real-time ingestion and processing for applications like live deal tracking or investor updates.
- Cost Efficiency Over Time
 - Lower ongoing costs for data storage and management compared to traditional warehouses, especially with tiered storage for infrequently accessed data.

Disadvantages

- Implementation Complexity
 - Requires significant upfront effort for architecture design, data ingestion, and governance setup.
 - Integration of APIs (QuickBooks, DealCloud, Maples) and legacy systems may add complexity.
- Higher Initial Costs
 - Investment for development, integration, and migration is higher than for simpler solutions.

Additional Arguments for Data Lake Option:

- Real-Time Data Processing - If the firm needs **near real-time updates for investor reporting or deal tracking**, the data lake is the most robust option.
- Handling Unstructured Data - Many investment firms **generate documents, PDFs, and other unstructured formats (e.g., OneDrive files)**. Only the data lake handles these effectively.

- Competitive Advantage - A scalable data lake enables **advanced analytics** (e.g., predictive models for portfolio performance), which can **differentiate the firm in the competitive investment landscape**.

High Level Infrastructure Costs

Assumptions for the Estimate

Data Volumes:

- Structured data from QuickBooks, DealCloud, and Maples: ~1 TB/year.
- Unstructured data from OneDrive (e.g., documents, media): ~10 TB/year.

Integration Tools:

- Azure Data Factory (for ETL pipelines).
- Azure Data Lake (for centralized storage).
- Azure Functions (for event-driven tasks like file uploads from OneDrive).

Analytics Tools:

- Power BI Pro for reporting and dashboards.
- Time Frame: 1-year estimate for recurring costs (excluding initial setup).

Cost Category	Estimated Cost (USD)	Details
Storage in Azure Data Lake	\$1,100–1,500/year -	1 TB structured data (hot tier), 10 TB unstructured data (cool/archive tier)
Data Ingress Costs Free	Free	Ingress data transfer within Azure is free.
Data Egress Costs	\$500–800/year	Limited external sharing/export of ~5–10 TB/year, charged at \$87/TB.
ETL/Integration Tools	\$1,200–6,000/year	Azure Data Factory: ~\$100–500/month (depending on pipeline frequency and volume).
Azure Functions for OneDrive	\$300–600/year	Event-driven integration for file uploads, minimal hosting, and execution costs.
BI Tool (Power BI)	\$400–600	2-3 PRO licenses
Analytics Tool	\$0-90,000	Based on tool and its components (Alteryx Server ~\$80,000, Alteryx Designer ~5,000 KNIME Server ~ \$39,000, KNIME Desktop Free Workflows can be orchestrated without server)
Governance and Monitoring	\$500–1,000/year	Azure Monitor and additional governance tools for tracking data flows and storage usage.
Licenses for QuickBooks, etc.	Included in existing subscriptions (to be verified)	Integration costs assume existing subscriptions for QuickBooks, DealCloud, and Maples APIs.
API Integration Overhead	\$3,500–8,500	API integration with DealCloud, Maples, OneDrive, Atom Invest, and QuickBooks, covering both real-time and batch data ingestion using Azure Data Factory REST API connectors. This cost reflects the flexibility to handle unstructured and structured data with potential for real-time data synchronization.

IMPORTANT NOTE: the above estimates are purely related to Infrastructure costs and do not contain Implementation / resource costs.

API Integration Details

1. DealCloud

- Connecting DealCloud to an Azure Data Lake using APIs enables seamless integration of DealCloud's deal, pipeline, and client interaction data into a centralized repository.
- Using Azure Data Factory (ADF), we will orchestrate data pipelines that extract data from DealCloud APIs, transform it (if needed), and store it in structured zones within Azure Data Lake.
- This setup ensures secure, scalable, and automated data management, leveraging ADF for API calls, Azure Key Vault for credentials, and private endpoints for secure connectivity.
- Azure Data Factory (ADF) allows integration with DealCloud via HTTP REST connectors.

2. Maples

- Connecting Maples to an Azure Data Lake using APIs will centralize the fund administrator data, such as cash flow statements, P&L data, and investor allocations, for comprehensive analytics and reporting.
- By leveraging Azure Data Factory (ADF), APIs will be used to extract structured data from Maples, ensuring that it is ingested, transformed, and stored in designated zones within the Data Lake (e.g., raw, processed, curated).
- Azure Key Vault secures API credentials, while private endpoints and role-based access control ensure secure data transfer.
- Primarily using Azure Data Factory's HTTP REST connector to pull data from Maples' API.

3. QuickBooks

- Connecting QuickBooks to an Azure Data Lake using APIs will allow for centralized financial data, such as invoices, transactions, etc. for analytics and reporting across teams.
- Using Azure Data Factory (ADF), we can set up specific pipelines to extract data from QuickBooks APIs, transform it into usable formats (e.g., aligning with financial reporting schemas), and store it in structured zones in the Data Lake (raw, processed, curated).

4. Atom Invest

- Connecting Atom Invest to an Azure Data Lake using APIs centralizes asset and investment data, enabling unified reporting and analytics.
- Through Azure Data Factory (ADF), APIs can be used to extract data such as portfolio performance, valuations, and operational metrics from Atom Invest.
- This data is ingested into Azure Data Lake and will be organized into zones (e.g., raw, processed, curated) for efficient processing.

5. OneDrive

- Using APIs, we can connect OneDrive with an Azure Data Lake to centralize document and file data stored in OneDrive into a scalable repository for analytics, collaboration, and backup.
- Using Azure Data Factory (ADF), we can automate the extraction of files and metadata from OneDrive APIs, transform the data as needed (e.g., categorizing, or standardizing file formats), and store it in structured zones within the Data Lake (raw, processed, curated).
- Authentication is managed using Azure Key Vault for secure storage of API credentials, while private endpoints ensure secure data transfer.

Alteryx and KNIME overview

1. General Description of Alteryx & KNIME

Both Alteryx and KNIME are drag-and-drop data analytics platforms designed for ETL (Extract, Transform, Load), data preparation, automation, and advanced analytics. Both allow users to process data without coding but also support scripting when needed.

- Alteryx is a commercial, user-friendly tool designed for business users who need quick insights and automation without requiring technical expertise. It has pre-built connectors, intuitive workflows, and excellent customer support, making it ideal for organizations looking for a structured, out-of-the-box solution.
- KNIME is an open-source, highly flexible tool with strong customization options. While it offers a drag-and-drop interface, it also allows deeper integration with Python, R, SQL, and Java, making it better suited for teams that want cost efficiency, scalability, and the ability to modify workflows beyond standard features.

2. Comparison Table: Alteryx vs. KNIME

Feature	Alteryx 	KNIME 
Pricing	Relatively Expensive (Commercial)	Free (Open source) + Paid Server
Ease of Use	Quite easy, business-friendly UI	Drag-and-drop but requires more setup
Data Prep & ETL	Pre-built tools, no coding needed	Pre-built tools, but can integrate custom scripts
Data Connectors	Extensive pre-built integrations	Open source, requires manual setup for some connectors
Automation & Scheduling	Requires Alteryx Server for automation	Can use KNIME Server or external scheduling (e.g., Azure Data Factory, Windows Task Scheduler)
Advanced Analytics	Built-in predictive & geospatial tools	Supports AI, ML, but requires configuration
Custom Scripting	Limited, mostly no-code	Supports Python, R, Java, SQL
Scalability	Limited without Alteryx Server	Highly scalable (cloud, distributed execution)
Best For	Business users needing quick, no-code solutions	Technical teams looking for customizable, cost-effective workflows

3. With & Without Server: Automation & Scheduling

Deployment Option	Alteryx 	KNIME 
Without Server	Can manually run workflows, but no built-in scheduling	Can manually run workflows, but scheduling requires external tools (Task Scheduler, ADF, etc.)
With Server	Alteryx Server required for automation, costs extra	KNIME Server available for automation, but free alternatives exist
Alternative Scheduling	External automation via Python scripts, Windows Task Scheduler, or ADF	External automation via Python scripts, Windows Task Scheduler, or ADF

Summarized Scenario Comparison

	1. Project-Oriented Workflow-Driven Data Processing (No Data Lake)	2. Project-Oriented Targeted Data Warehouse (No Data Lake)	3. Full Enterprise Data Lake (Recommended)
One Source of Truth	⚠️ No centralized repository; data is fragmented across workflows.	⚠️ Limited to project-specific datasets in SQL Database.	<input checked="" type="checkbox"/> Centralized data governance and full traceability.
Scalability	⚠️ Limited; as more workflows grow, complexity increases	⚠️ Moderate; structured SQL Database but without full data lake scalability.	<input checked="" type="checkbox"/> Highly scalable for future expansion, AI, and ML.
Robustness & Data Quality	⚠️ Risk of inconsistencies due to multiple versions of saved files.	⚠️ More structured than Scenario 1 but still lacks enterprise-wide governance.	<input checked="" type="checkbox"/> Strongest data validation and integrity mechanisms.
Complexity	<input checked="" type="checkbox"/> Simple setup but manual effort required.	⚠️ Medium complexity, requires SQL-based structure and queries.	⚠️ High complexity, requires more setup and governance.
Implementation Time	<input checked="" type="checkbox"/> Fastest to implement (weeks to months).	⚠️ Moderate timeline (months).	⚠️ Longer implementation (6-18 months).
Cost	<input checked="" type="checkbox"/> Lowest cost; minimal infrastructure required.	⚠️ Moderate cost (SQL Database, storage, some automation tools).	⚠️ Higher initial cost but optimized for long-term savings.
Automation & Workflow Efficiency	⚠️ Requires manual intervention for processing and automation.	<input checked="" type="checkbox"/> More automated but limited to project-specific needs.	<input checked="" type="checkbox"/> Fully automated data ingestion, transformation, and reporting.
Data Governance & Control	⚠️ Limited; governance must be manually enforced per project.	⚠️ Governance possible at project level but lacks company-wide enforcement.	<input checked="" type="checkbox"/> Enterprise-wide governance with consistent data definitions.
Futureproofing (AI/ML Capabilities)	⚠️ Not suitable for AI/ML without major rework.	⚠️ Limited AI/ML potential due to project-specific nature.	<input checked="" type="checkbox"/> Best option for future AI/ML advancements.

Cost recapitulation (estimate)

Cost Category	1. Project-Oriented Workflow-Driven Data Processing	2. Project-Oriented Targeted Data Warehouse	3. Full Enterprise Data Lake
Storage in Azure Data Lake	N/A	\$2,500–3,000	\$2,300–2,800
Data Ingress Costs Free	N/A	Free	Free
Data Egress Costs	N/A	\$500–800	\$500–800
ETL/Integration Tools	N/A	\$1,200–6,000	\$1,200–6,000
Azure Functions for OneDrive	N/A	N/A	\$300–600
BI Tool (Power BI)	\$400–600	\$400–600	\$400–600
Analytics Tool	\$0–90,000	\$0–90,000	\$0–90,000
Governance and Monitoring	\$50–200	\$500–800	\$500–1,000
Licenses for QuickBooks, etc.	N/A	Included in existing subscriptions (to be verified)	Included in existing subscriptions (to be verified)
API Integration Overhead	\$1,000–1,500	\$2,000–3,500	\$2,000–3,000

Strategic Recommendation and Conclusion

Data Lake and SQL Database architecture is the most optimal and future-proof solution for the firm's data needs. This approach ensures a single source of truth by consolidating all data into a centralized, structured system, eliminating fragmentation across multiple tools and manual files. It allows for consistent, validated, and well-governed data, reducing errors and inefficiencies in reporting, investor communications, and analytics.

This architecture provides long-term scalability, enabling the firm to seamlessly integrate additional data sources as their business evolves. It also enhances data governance and security, allowing for automated quality checks, standardized KPIs, and controlled access to sensitive information. Unlike simpler approaches, this model allows for real automation in Power BI, Alteryx, and other tools, eliminating the need for repetitive manual work.

A huge advantage of this setup is that it lays the groundwork for advanced analytics and AI/ML capabilities, which will be increasingly important for forecasting, risk assessment, and strategic decision-making. While other scenarios offer quicker solutions, they lack the ability to support future data-driven initiatives.

Given the firm's data volumes — relatively modest compared to larger institutions — we anticipate that implementing this approach will not be excessively expensive. Instead, it will provide long-term cost efficiency by reducing manual effort, preventing data inconsistencies, and ensuring smooth operations

across all teams. This makes the Data Lake and SQL Database architecture the best investment for both immediate improvements and long-term strategic growth.

Governance Framework

Governance at Metropolitan is foundational for ensuring data integrity, system security, risk oversight, and compliance enforcement across investment, finance, legal, and operations. The firm's investment lifecycle requires clear ownership of data, structured access control, proactive risk management, and regulatory alignment to mitigate inefficiencies, compliance risks, and operational inconsistencies.

This section focuses on seven core governance areas, integrating operational challenges identified in Metropolitan's internal workflows, with structured recommendations for resolution:

- Data Ownership & Accountability
- Access Control & Security Compliance
- Governance Policy Implementation
- Reporting Governance
- Process Governance & Streamlining
- KPI catalogue & Lexicon

1. Data Ownership & Accountability

Governance Perspective

- For Metropolitan's investment data to remain accurate and reliable, each stage of the investment lifecycle must have clearly defined data ownership.
- The Deal Team owns deal-related data in Deal Cloud during the origination and execution phase.
- Upon deal closing, ownership transitions to Asset Management, which monitors portfolio performance, amendments, and risk factors.
- Investor Relations and Finance rely on deal data for fund reporting, performance metrics, and investor disclosures.
- Operations ensures proper cash flow tracking and updates investment models accordingly.
- The Legal Team manages legal contracts, NDAs, and compliance documentation related to deals and investments.
- However, due to manual workflows and inconsistent updates, critical deal data is often mismatched across systems, requiring reconciliations before reports can be published. Additionally, there is no structured enforcement of ownership transitions, which might lead to delays, reporting errors, and accountability issues across multiple departments.

Governance Solutions

1. Automate Deal Ownership Transfers in Deal Cloud

- Upon deal closure, Deal Cloud must automatically reassign deal ownership to Asset Management.
- Introduce a Deal Ownership Log, ensuring all closed deals have a designated Asset Manager.
- Dedicated Data Stewards are responsible for auditing past deals for ownership errors.
- A structured backfilling process for historical deals with incomplete ownership details.

- Introduce Automated Deal Ownership Transfers in Deal Cloud, notifying Asset Management of deal transitions.
- Mandate Parent-Child Deal Linking to correctly associate add-ons and amendments with original transactions.

2. Enforce Cross-System Data Synchronization

- Develop API-based integration between Deal Cloud, PIPE, and LP360 to automatically update deal information, valuation metrics, and portfolio assignments.
- Use PIPE as the “golden source” for financial updates, ensuring Deal Cloud and LP360 reflect amendments and ownership changes.
- Require Asset Management and Investor Relations to use synchronized data sources to avoid discrepancies.

3. Create a Centralized Legal Contract Repository

- Implement a single-source document management system where Legal, Deal Team, Investor Relations and other teams can access the latest contract versions.
- Automate legal contract tracking to prevent discrepancies in deal terms, compliance disclosures, and fund agreements.
- Require automated cross-checking between PIPE financial terms and the latest legal contracts.

4. Data Steward Responsibilities & Oversight

- Define the role of Data Stewards in ensuring ownership transitions, correcting historical data, and performing periodic audits.
- Implement Ownership Transfer Audits to review assigned ownership every quarter.
- Establish a formalized dispute resolution process for discrepancies.

Key Benefits of Improved Data Ownership Governance

- **Increased Data Accuracy:** Eliminates data mismatches between Deal Cloud, PIPE, and LP360.
- **Faster Reporting & Reduced Manual Work:** Minimizes reconciliation time and late-stage corrections.
- **Clearer Accountability:** Ensures that deal ownership is always assigned to the correct department.

2. Access Control & Security Compliance

Governance Perspective

- Effective access control and security compliance ensures that financial, legal, and investor data is protected, preventing unauthorized modifications, data breaches, and compliance violations.
- Role-based access control (RBAC) must be enforced to restrict who can modify, view, and approve deal, fund, and legal data.
- Data modification tracking should ensure all updates are logged, and auditable for compliance.
- Legal and compliance data must be secured to prevent unauthorized access and ensure investor transparency.
- Interdepartmental access dependencies (Finance, Investor Relations, Legal, Operations, and Asset Management) must be clearly defined to prevent conflicting updates.

- However, Metropolitan currently lacks a structured approach to access control enforcement, leading to excessive permissions, security gaps, and compliance risks across various teams.

Governance Solutions

1. **Implement Role-Based Access Control (RBAC) in PIPE & LP360**
 - Restrict access by user role, ensuring i.e.:
 - Finance manages NAV calculations, with Investor Relations having read-only access.
 - Legal approves all external deal documents before they are shared.
 - Asset Management can update deal performance but not override financial figures.
 - Users maintain only necessary permissions.
 - Expired accounts and unused permissions are removed systematically.
 - Introduce a Temporary & Privileged Access Control Framework to manage time-restricted system access.
2. **Implement Automated Data Modification Tracking & Approval Workflows**
 - Create **audit logs** that track all changes i.e.:
 - Deal ownership transfers (Deal Cloud → Asset Management).
 - Fund performance data (NAV updates, risk adjustments, and financial models).
 - Investor reporting figures, ensuring compliance reviews before distribution.
 - Set up automatic notifications for Finance & Investor Relations whenever NAV updates occur.
3. **Create an Approval Process for Investor Reporting & Fund Disclosures**
 - Before investor reports are published, Finance must:
 - Approve NAV figures and fund allocations.
 - Ensure LP360 is aligned with PIPE financial data.
 - Verify that compliance signoffs are included in disclosures.
 - Investor Relations cannot distribute reports until compliance approvals are documented.

Key Benefits of Improved Access Control & Security Compliance

- **Prevents Unauthorized Data Modifications** – Ensures only authorized personnel can edit key financial & legal documents.
- **Reduces Risk of Regulatory Violations** – Ensures all investor reports, NAV calculations, and fund performance updates undergo compliance review before distribution.
- **Improves Operational Efficiency** – Removes manual tracking of financial updates, introducing automated approval workflows & tracking mechanisms.

3. Governance Policy Implementation

Governance Perspective

- Governance policies establish clear rules, validation standards, and enforcement mechanisms to ensure that data across investment, legal, financial, and operational teams is accurate, structured, and aligned with reporting and compliance needs.

- Currently, Metropolitan lacks a structured governance framework, leading to:
- Inconsistent field definitions and misaligned deal classifications across teams.
- Lack of structured approval processes for system modifications, creating inconsistencies in historical data.
- No enforced validation rules or mandatory fields, allowing incomplete records that impact reporting.
- No centralized governance oversight, making data corrections reactive rather than proactive.
- A formalized governance framework must be implemented to:
- Standardize field definitions, data classifications, and system update processes.
- Introduce enforcement mechanisms for mandatory fields, validation rules, and reporting structures.
- Establish clear ownership and accountability for changes to Deal Cloud, PIPE, LP360, and investor reporting data.
- Ensure compliance with internal reporting structures and regulatory requirements.

Governance Solutions

- 1. Implement a Formalized Data Governance Framework:**
 - Establish a dedicated Data Steward role to oversee governance policies and ensure compliance.
 - Flag missing or incomplete fields before deal approvals.
 - Generate real-time discrepancy notifications to responsible teams.
- 2. Enforce Standardized Field Definitions & Validation Rules Across All Systems:**
 - Develop a centralized Field Dictionary, including:
 - Standard definitions for all fields in Deal Cloud, PIPE, and LP360.
 - Approved validation rules and dependencies for each data field.
 - Historical backfilling guidelines for retroactive updates.
- 3. Introduce System-Based Enforcements for Compliance:**
 - Implement automated quality checks that run nightly to identify missing or incomplete fields.
 - Require automated user prompts for missing mandatory fields before a deal can progress through Deal Cloud stages.
- 4. Develop Change Control Mechanisms for System Updates:**
 - Require justification for adding, modifying, or deprecating fields to ensure long-term consistency.
 - Implement pre-deployment testing for new system fields to prevent unintended disruptions to reporting structures.
- 5. Introduce a Change Control Framework:**
 - Require approval for financial and legal data modifications before updates are finalized.
 - Track user modifications through audit logs with timestamps and user IDs.
 - Establish an automated notification system for major data changes:
 - Finance receives alerts when NAV or financial metrics are updated.
 - Legal receives alerts when compliance terms or fund disclosures are modified.
- 6. Create an Approval Process for Investor Reporting & Fund Disclosures**
 - Before investor reports are published, Finance must:
 - Approve NAV figures and fund allocations.
 - Ensure LP360 is aligned with PIPE financial data.

- Verify that compliance signoffs are included in disclosures.
 - Investor Relations cannot distribute reports until compliance approvals are documented.
- 7. Data Cleansing & Standardization Procedures**
- To maintain high-quality, accurate, and reliable data across all business functions, Metropolitan implements a structured Data Cleansing and Standardization Framework. This framework ensures that data integrity is preserved, inconsistencies are minimized, and compliance with regulatory and operational requirements is upheld.
- 8. Data Cleansing Activities:**
- Data Deduplication: Identify and remove duplicate entries in Deal Cloud, PIPE, and LP360.
 - Error Identification & Correction: Detect and resolve incorrect, missing, or inconsistent data values.
 - Historical Data Audits: Conduct systematic reviews of data to align records with current governance standards.
 - Standardized Data Entry Protocols: Ensure all departments adhere to uniform data input standards, reducing variations in formats and classifications.
- 9. Automated Data Validation Checks:** Implement real-time validation rules to flag discrepancies and ensure accuracy before submission.

Data Standardization Procedures:

- Field Consistency Enforcement: Standardize field names, values, and formats across all systems to prevent discrepancies.
- Hierarchical Structuring: Establish clear data relationships between parent and child transactions, ensuring accurate linkage of add-ons and amendments.
- Compliance & Regulatory Alignment: Ensure that all data fields adhere to industry standards.
- Cross-Departmental Data Synchronization: Align data standards across teams to ensure seamless reporting.

Governance & Oversight for Data Quality:

- Designate Data Stewards for Quality Assurance: Assign dedicated personnel to oversee and enforce data governance policies.
- Real-Time Monitoring & Reporting Dashboards: Deploy automated dashboards to provide ongoing visibility into data quality metrics.
- Escalation Protocols for Data Discrepancies: Establish structured workflows for reporting and resolving inconsistencies in real time.
- By implementing these robust data cleansing and standardization processes, Metropolitan ensures data accuracy, operational efficiency, and regulatory compliance, reducing manual interventions and enhancing overall business intelligence capabilities.

4. Reporting Governance

Governance Perspective

- Effective reporting governance ensures data accuracy, compliance adherence, and standardized financial and operational reporting across all teams.
- Currently, Metropolitan faces challenges due to:
- Manual reporting processes that require excessive data extraction, copying, and pasting, increasing the risk of human error.
- Inconsistent reporting formats across teams, leading to discrepancies in investor and internal reports.
- No standardized approval workflow for investor reports and regulatory filings, creating compliance risks.
- Lack of automated reporting validation, causing last-minute corrections and inefficiencies.
- A formalized reporting governance structure must be implemented to:
 - Standardize reporting templates and enforce structured approval workflows.
 - Automate data validation and reconciliation across PIPE, LP360, and Deal Cloud.
 - Ensure compliance oversight and audit trails for financial and investor reporting.

Governance Solutions

- Automate Reporting Workflows & Reduce Manual Data Handling
- Implement Business Intelligence (BI) tools like Power BI, integrating data from PIPE, LP360, Atom Invest and Deal Cloud to generate real-time dashboards.
- Automate data validation scripts, reducing reliance on manual Excel reconciliation.
- Enforce a Structured Approval Workflow for Investor Reports
- Investor reports must be approved by Finance & Compliance before external distribution.
- Introduce pre-scheduled approval meetings before each quarterly report release.
- Standardize Report Formats & Data Structures
- Develop company-wide standardized templates for reports i.e., investor reports, fund performance updates, and deal pipeline reports.
- Ensure Deal Cloud classifications match investor reporting structures, preventing inflated deal counts.
- Automate Compliance Verification for Investor Reports
- Create a compliance approval checklist, ensuring all investor disclosures meet SEC and fund reporting requirements.
- Implement automated discrepancy detection tools, flagging inconsistencies before reports are published.

5. Process Governance & Streamlining

Governance Perspective

- Process governance ensures efficiency, accuracy, and accountability in the workflows used across Metropolitan's operational, financial, investment, and compliance teams. Currently, Metropolitan faces key process inefficiencies due to:
- Lack of standardized deal workflows across the investment lifecycle, causing inconsistencies between teams.
- Over-reliance on manual data reconciliation, leading to errors and inefficiencies in fund allocations, investor reporting, and financial projections.
- Fragmented collaboration between Deal Team, Asset Management, Investor Relations, and Compliance, creating gaps in deal transitions and oversight.
- No structured framework for handling pipeline data, amendments, and add-ons, causing misclassification of deals and inaccurate performance tracking.
- Insufficient automation of routine processes, forcing teams to rely on Excel-based tracking, increasing the risk of human error.
- A formalized process governance structure must be implemented to:
- Standardize deal classification, amendments, and pipeline tracking.
- Improve automation in data validation, reconciliation, and reporting workflows.
- Create clear transition protocols between teams to prevent data inconsistencies.
- Enforce structured workflows for deal tracking, reporting, and compliance reviews.

Governance Solutions

- 1. Establish Standardized Deal Workflows Across All Teams**
 - Require structured deal handoff protocols between Deal Team, Asset Management, and Finance.
 - Implement mandatory fields for every deal stage, ensuring consistent tracking.
 - Ensure new deals, add-ons, and amendments are correctly classified and tracked.
 - A structured parent-child hierarchy for add-ons and amendments.
 - Mandatory linking of add-ons to their parent deals in Deal Cloud.
 - Clear conditions for reactivating deals vs. entering new transactions.
 - Automated notifications when a deal transitions from one team to another.
 - Asset Management receives a structured deal handoff from the Deal Team, including all required details.
- 2. Develop an Automated Data Reconciliation Framework**
 - Integrate PIPE, LP360, and Deal Cloud, eliminating manual adjustments.
 - Automate nightly data validation reports, flagging discrepancies in fund allocations and performance metrics.
- 3. Implement Structured Approval Processes for All Critical Reports**
 - Require Finance approval before any investor report is finalized.
 - Ensure Asset Management signs off on valuation updates before financial reporting.
 - Introduce compliance review workflows to prevent regulatory exposure.
- 4. Introduce Business Intelligence Tools for Automated Reporting**

- Deploy Power BI dashboards to replace manual investor reporting processes.
- Automated pipeline tracking reports, ensuring real-time updates on deal statuses.
- Standardize report templates, ensuring consistent data presentation and compliance adherence.
- Scheduled BI-generated reports, eliminating manual data extractions.
- Pre-configured templates for recurring investor reporting requests.
- Automated verification before investor report distributions.

6. KPI Catalogue & Lexicon for Data Governance

Governance Perspective

A centralized KPI Catalogue and a comprehensive Lexicon are essential for standardizing performance measurement and data governance across all systems (i.e., DealCloud, PIPE, LP360). While the KPI Catalogue ensures consistent tracking of performance metrics, the Lexicon serves a dual purpose: providing clear definitions of business terminology and establishing authoritative sources for data elements across systems.

Why the KPI Catalogue and Lexicon are Needed:

- **Standardization of Business Language:** A unified business lexicon ensures that terms like "Borrower," "Fund," or "NAV" have consistent meanings and logic across departments, minimizing misinterpretation.
- **Consistent Performance Measurement:** The KPI Catalogue provides a unified framework for defining, tracking, and analyzing key performance indicators, ensuring all departments align with organizational goals and metrics.
- **Data Governance and Source of Truth:** The Data Lexicon identifies where data elements are entered, who owns them, and which system is the authoritative source ("golden source") for that information. For example, "Deal Name" might exist in both Atom Invest and DealCloud, but Lexicon specifies DealCloud as the source of truth.
- **Enhanced Data Integrity:** By clarifying data ownership and processes, the Lexicon helps maintain data consistency, accuracy, and compliance across systems.
- **Operational Efficiency and Accountability:** Clearly defined KPIs and data elements establish accountability for performance outcomes and data accuracy, reducing manual reconciliation efforts and streamlining reporting processes.
- **Data Governance and Source of Truth:** The Data Lexicon identifies where data elements are entered, who owns them, and which system is the authoritative source ("golden source") for that information. For example, "Deal Name" might exist in both Atom Invest and DealCloud, but Lexicon specifies DealCloud as the source of truth.
- **Enhanced Data Integrity:** By clarifying data ownership and processes, the Lexicon helps maintain data consistency, accuracy, and compliance across systems.

KPI Catalogue:

Components of the KPI Catalogue:

- KPI Name – Clearly defined label for the metric.
- Definition – Explanation of what the KPI measures and why it is important.
- Formula – How the KPI is calculated.
- Owner – The team responsible for tracking and reporting on the KPI.
- Reporting Frequency – How often the KPI is reviewed (e.g., daily, weekly, monthly, quarterly).
- Target/Benchmark – Expected performance levels.

Integration with Governance & Business Objectives

- The KPI Catalogue will align with company-wide governance principles, ensuring metrics reflect operational efficiency, compliance adherence, financial health, and strategic growth.
- Each KPI will be mapped to specific business objectives.
- Ownership of each KPI will be clearly assigned, ensuring accountability and structured monitoring across departments.

Governance Oversight & Continuous Improvement

- A KPI Review Committee will conduct quarterly evaluations to ensure KPI definitions remain relevant, and performance targets align with business priorities.
- Automated dashboards will provide real-time insights into KPI performance, ensuring timely corrective actions where necessary.
- The KPI Catalogue will be updated regularly to include new metrics as governance, compliance, and business needs evolve.

Lexicon:

Components of the Lexicon:

1. **Business Lexicon:** Provides clear definitions of key business terms to ensure consistent understanding across departments.
 - **Term Name:** Clearly defined label for each business term.
 - **Definition:** Explanation of the term's meaning and relevance within the business context.
 - **Owner:** Department responsible for maintaining the accuracy of the term.
 - **Usage Context:** Description of where and how the term is applied in business processes.
2. **Data Lexicon:** Captures all data attributes tracked in systems, specifying ownership, process context, and the authoritative source of truth.
 - **Data Element:** Name of the data attribute.
 - **Definition:** Description of the data element and its importance.
 - **Owner:** Department responsible for the data's accuracy and updates.
 - **Process:** Business process where the data is entered or utilized.

- **Process Details:** Specific details on how and when the data is applied within the process.
- **System:** Platform where the data is stored and managed.
- **Field:** Exact field or location within the system where the data resides.
- **Data Type:** Nature of the data (e.g., text, number, date).
- **Mandatory:** Indicates whether the field is required for processing.
- **Source of Truth:** Identifies the authoritative system for the data element.

Governance Oversight & Continuous Improvement:

- **Data Steward Responsibilities:** Regularly update the Lexicon to reflect changes in business processes and systems.
- **Audit and Review:** Conduct periodic audits to ensure compliance with Lexicon standards and identify discrepancies in data sources.
- **Training and Awareness:** Provide continuous training for staff to understand and effectively use the Lexicon, ensuring accurate data entry and governance adherence.

Data Quality Governance Framework

This section demonstrates the data quality checks and cleansing processes that will be implemented as part of the Data Governance strategy. These quality measures ensure the integrity, accuracy, and usability of enterprise data assets. The examples provided are indicative of the approach we will adopt across all datasets when full access is granted. These measures represent just a portion of the data quality framework that will be applied across the full data spectrum during the Data Governance initiative.

1. Data Quality Checks Overview

The following key data quality dimensions will be systematically assessed and continuously monitored through an integrated Data Quality Dashboard:

- **Completeness**
 - Ensures all required fields are populated.
 - Example: 98.7% compliance in mandatory field completion across DealCloud tables.
- **Uniqueness**
 - Confirms no duplicate records exist for unique identifiers.
 - Example: Company names achieved 99.8% uniqueness with 442 potential duplicate names identified.
- **Consistency**
 - Verifies that data values adhere to specified formats and standards.
 - Example: Phone number formatting requires standardization, with 87.4% compliance.
- **Accuracy**
 - Ensures data correctly represents real-world entities.
 - Example: Email addresses showed 92.4% completion with strong format compliance but required 2,217 validations.
- **Clarity**
 - Ensures data is well-structured and easily interpretable.

- Example: Naming standardization in Company and Deal tables reduced inconsistencies across 15,782 records.
- **Traceability**
 - Tracks the lineage and source of data modifications.
 - Example: Audit logs in Deal, LP Commitment, and Company records tracked modifications in timestamps and user edits.
- **Integrity**
 - Ensures valid relationships between datasets.
 - Example: 94.3% match rate in Deal to Company references, with 319 orphan records requiring resolution.
- **Timeliness**
 - Confirms data is up-to-date and reflects the current state.
 - Example: Commitment dates in LP Commitment records showed 65.3% missing values.
- **Standardization**
 - Ensures categorical data follows predefined taxonomies.
 - Example: Sector classification gaps were identified in the Company table with only 68% standardization.

2. Data Quality Validation Logic

The following validation rules and logic, among other advanced data quality protocols, will be embedded into the Data Quality Dashboard to automate continuous assessment:

- **Field-Level Validations:**
 - **Email Validation:** RFC 5322 format compliance, domain verification, and active DNS checks.
 - **Phone Number Validation:** E.164 international format compliance with area code checks.
 - **Postal Code Validation:** Country-specific format rules with ZIP/ZIP+4 checks for US addresses.
- **Business Logic Validations:**
 - **Deal Pipeline:** Ensures stage progression adheres to predefined workflows (e.g., 45.2% compliance noted).
 - **Entity Management:** Verifies relationships between contacts, companies, and deals.
 - **Investment Process:** Ensures logical flow in commitment sequences and documentation linking.
- **Data Relationship Validations:**
 - **Cross-Reference Integrity:**
 - i. Example: Contact to Company associations showed 96.8% accuracy with gaps in secondary and historical associations.
 - **LP to Investor Vehicle Mapping:** 93.2% match rate for fund commitments, with entity structure inconsistencies.
- **Implementation Strategy**

The data quality checks illustrated above will be applied enterprise-wide upon full access during the Data Governance initiative. These checks will be incorporated into the Data Quality Dashboard for continuous monitoring, ensuring:

1. **Automated Validation:** Real-time data quality checks embedded into data workflows.
2. **Data Cleansing Procedures:** Systematic remediation processes to correct identified issues.
3. **Continuous Monitoring:** Ongoing quality assurance with alerts for deviations from standards.

Phased Deliverables

Our proposed approach is phased, beginning with a robust design phase (detailed in the next section). This foundational phase will lay the groundwork for subsequent development and deployment.

Infrastructure

For infrastructure setup, particularly in Scenario 1 (involving a data lake), we propose a phased, system-by-system approach. This will involve integrating data from DealCloud first, followed by PIPE, LP360, and other systems. This phased approach enables early value realization by allowing us to start creating System related dashboards. For instance, as soon as DealCloud data is available, we can collaborate with Metropolitan users to design Dashboards that reflect their desired KPIs from this system. This will allow the end users to access the data in a more interactive and user-friendly way.

Once data from multiple systems is loaded to the data lake, we can start assessing the prioritization of the dashboards that require input from multiple sources. Before implementing any automation, a thorough analysis will be conducted in collaboration with each workstream. This analysis will determine the most suitable candidates for automation, considering factors such as effort required, relevance, and specific business requirements.

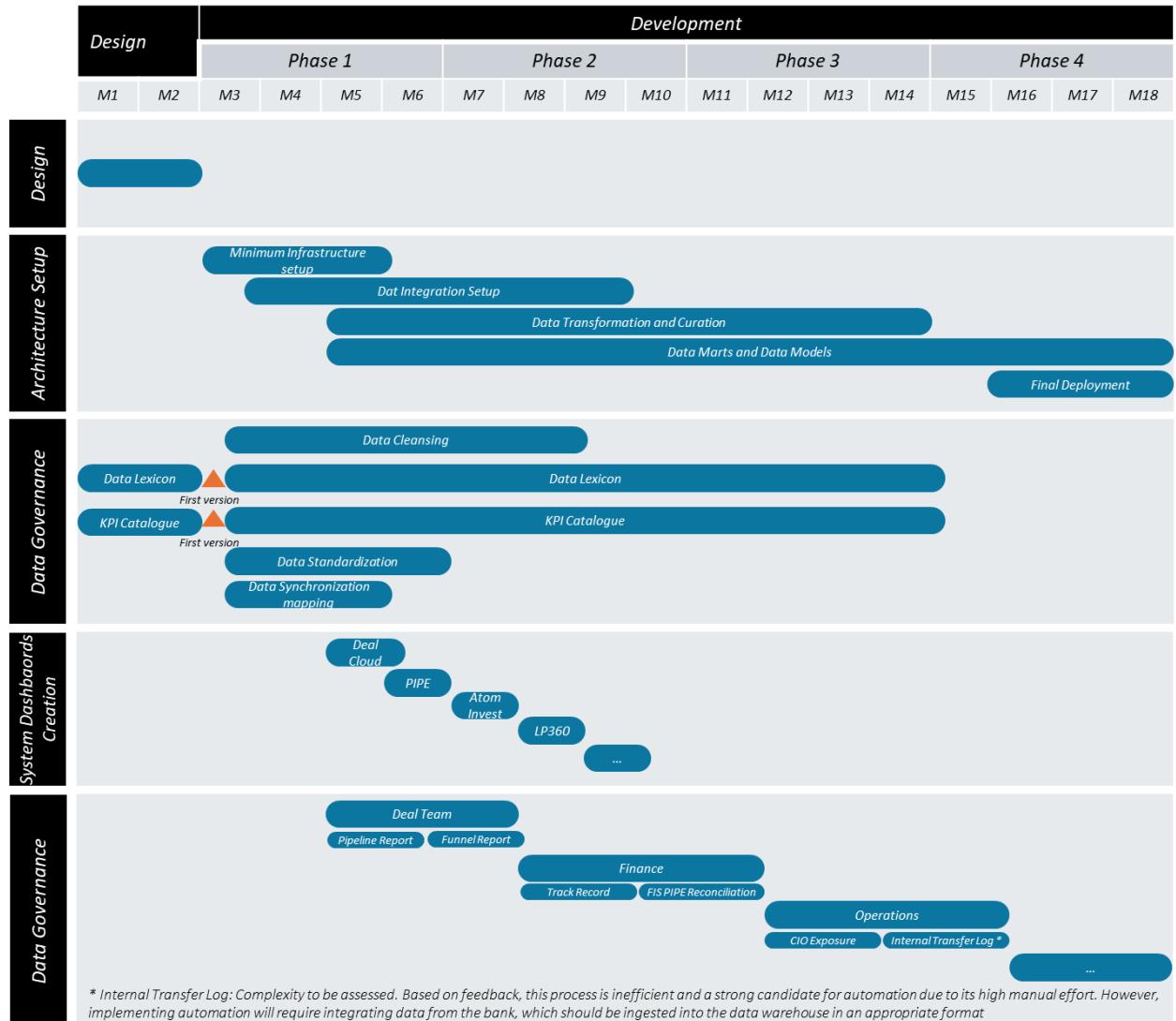
This means that the report automation will also be phased out. Once data inputs for Deal Team reports are available in the data lake, we will automate their generation directly from this source. Workstreams and reports will be organized logically, considering the number of required input systems.

Reports

Reports with dependencies on a single system will be prioritized, followed by those requiring data from multiple sources. Prioritization will be done based on complexity as reports/dashboards requiring data from single system will require less effort compared to dashboards/reports requiring multiple sources. Any deliverables requiring manual input/manual feedback not stored in any system will be assessed separately as they will be of higher complexity, extending the automation timelines. If those inputs may be incorporated into the systems, that will be the preferred approach.

Data Governance

Data Governance will be an integral part of the entire implementation process. Data cleansing will be an ongoing activity, aligning with the order of system ingestion into the data lake. The development will commence with a preliminary version of the data lexicon and KPI catalog, which will be continuously refined throughout the project.



(1) Proposed approach is based in Architecture Scenario 3. Timelines are directional and deployment plan will be delivered as part of Phase II (Design)

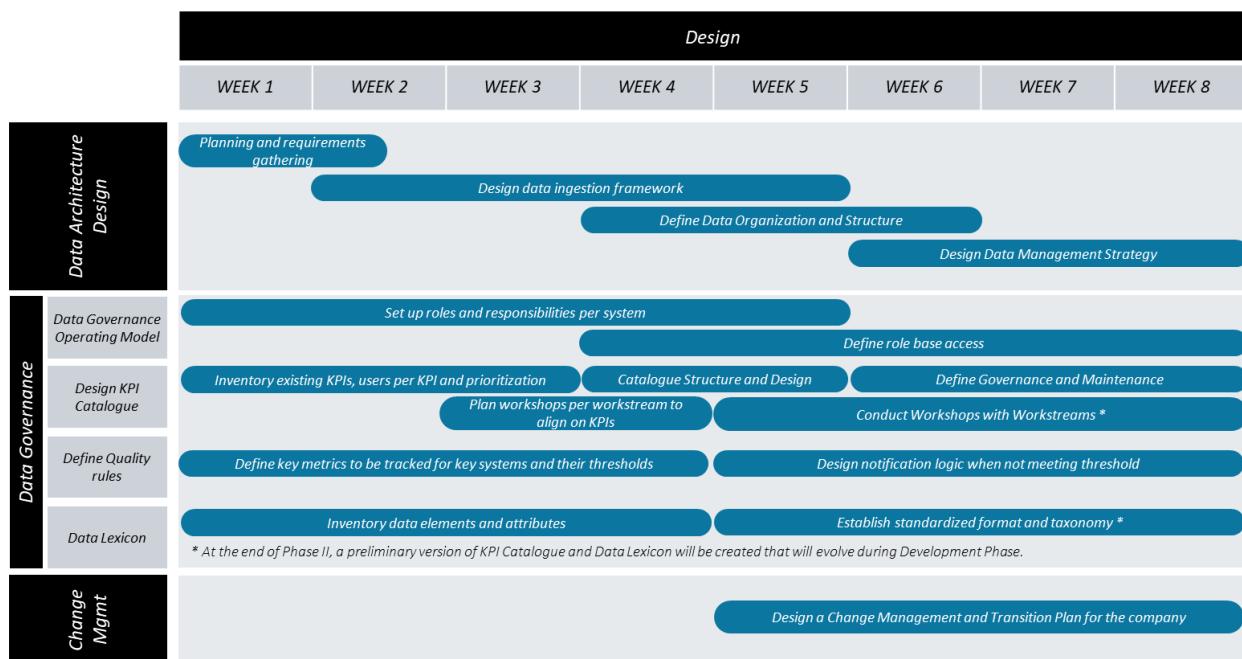
(2) Commentary on System Dashboard Creation and Phased Reports Automation: System and report prioritization and assessment will be part of the design phase. The list above is directional and suggest phased approach to different departments and reports.

Phase II Plan: Design Phase

Having completed the Current State Overview, we recommend proceeding with the Design Phase of the Metropolitan data and reporting transformation. This phase will be dedicated to designing the future state, including the governance framework, data architecture, and deployment strategy, thereby establishing a robust foundation for deployment.

Proposed Plan

The design phase, projected to take around eight weeks, will involve designing a robust infrastructure and implementing data governance processes. These foundational elements will enable the organization to effectively support data and reporting needs across all departments.



(1) Proposed plan is based in Architecture Scenario 3 – if different scenario is selected there will be variations in plan.

Activities and Deliverables

Data Architecture Design

The Design Phase focuses on creating a detailed and actionable blueprint for the proposed data architecture. This phase builds upon the insights gathered during the as-is assessment phase and ensures all architectural components are planned thoroughly to meet Metropolitan's needs and reduce risks during implementation.

1. Planning and Requirements Gathering

Objective:

Confirm specific architectural and business requirements to align the design with business use cases and ensure alignment with Metropolitan's objectives.

Key Activities:

- **Define scope and use cases:** Finalize which data-driven processes (e.g., reporting, dashboards, automation) will be supported by the architecture.
- **Map use cases to architecture:**
 - Identify data sources required for each use case (e.g., DealCloud, Atom Invest, QuickBooks).
 - Define the role of each component: Data Lake for raw data storage, SQL Database for curation, and tools for reporting and analytics.
- **Create a high-level timeline:** Include major milestones for implementation.

2. Define Data Organization and Structure

Objective:

Design the organizational structure for data layers in the Data Lake and SQL Database to ensure clarity, scalability, and accessibility.

Key Activities:

- **Design Data Lake structure:** Create a scalable Data Lake framework to store raw data, ensuring it is structured and accessible for downstream processes.
- **Design SQL Database structure:** Design the curated data structure in SQL Database to transform raw data into meaningful datasets for reporting and analytics.

3. Design Data Ingestion Framework

Objective:

Establish a clear framework for ingesting data from multiple sources into the Data Lake and SQL Database efficiently and reliably.

Key Activities:

- **Define ingestion methods:**
 - APIs: Plan API-based connections for tools like DealCloud, Atom Invest, QuickBooks, and Anduin.
 - File-based ingestion: Plan workflows for manual and automated uploads for tools like LP360 and PIPE (Power BI semantic models).
- **Data transfer approaches:** Use Change Data Capture (CDC), batch ingestion, or replication where applicable.

- **Plan orchestration workflows:** Use Azure Data Factory (ADF) for managing data pipelines.

4. Define Data Strategy

Objective:

Define end-to-end data flows, ensuring a clear strategy for data movement, storage, and user access to facilitate efficient reporting and analytics.

Key Activities:

- **Define data flows:** Map the movement of data across the architecture, including ingestion, transformation, storage, and consumption.
- **Establish user access framework:** Design a role-based access strategy to determine how teams interact with data through tools like Power BI and Alteryx, ensuring data security and compliance.

OUTPUT:

- Architecture and Technical Blueprint
- Deployment Plan

Data Governance

1. Data Governance Operating Model

Objective:

Define clear policies, standards, and procedures for data management, defining roles and responsibilities for data stakeholders.

Key Activities:

- **Setup roles and responsibilities per system:**
 - Confirm Metropolitan systems: Based on current state assessment, confirm list of systems that store or process data within company.
 - Role Identification: Determine the key roles involved in managing data within each system.
 - Responsibility mapping: Together with the Metropolitan team, for each system and each identified role, clearly define specific responsibilities.
 - Document roles in a RACI matrix
- **Define role-based access:**
 - Determine access levels for each of the defined roles
 - Define access controls

2. Design KPI Catalogue

Objective:

Create a centralized, organized, and well-defined collection of KPIs standardized across Metropolitan departments.

Key Activities:

- **Inventory KPIs, users and prioritization:**
 - Gather information about all the KPIs currently being used across the organization
 - Define KPI attributes
 - Determine who (individuals, teams, and departments) uses each KPI and their roles towards these KPIs
 - Establish a prioritization of these KPIs
- **Catalogue Structure and Design:**
 - Determine the centralized repository and where all these KPIs will be stored and will be accessed
- **Define Governance and Maintenance:** Establish processes for KPI approval, review, updates, removal and adding them to live reports.
- **Plan workshops per workstream:** Once KPIs and owners have been inventoried plan specific workshops with KPI users to align definitions and calculations.
- **Conduct workshops with users:** Conduct workshops with users to align on KPIs.

At the end of the workshops, the plan is to have a preliminary version of KPI Catalogue, however this effort will run into a development phase. Also, KPI Catalogue will keep evolving throughout the project and beyond.

3. Define Quality rules

Objective:

Create a set of criteria and standards that data must meet to ensure its accuracy, completeness, and consistency.

Key Activities:

- **Define key metrics to be tracked for key systems and thresholds**
 - Collaborate with the Metropolitan system and process owners to define relevant quality metrics to be tracked by the system. Some examples include:
 - Measure the discrepancies between data values in different systems for the same data element
 - Track the time it takes for data to be synchronized between systems.
 - Measure adherence to standard data formats across systems.
 - Measure adherence to consistent business rules implemented across different systems.
 - Establish thresholds that indicate when the system is performing normally or facing an issue.
- **Design notification logic when not meeting threshold**
 - Determine how often each metric should be monitored.

- Configure alerts to notify the appropriate owners when a meeting crosses defined threshold.

4. Data Lexicon

Objective:

Create a centralized, comprehensive, and standardized vocabulary for all data elements within Metropolitan. It is a dictionary for data, ensuring everyone speaks the same data language.

Key Activities:

- **Inventory data elements and attributes**
 - Confirm Metropolitan data sources: Based on current state assessment, confirm list of systems, databases and applications that store or process data within company.
 - Gather Data Element Information: For each data source, gather information about the data elements.
 - Identification of attributes: For each data element, identify and document its attributes.
 - Data Elements Mapping: If data is exchanged between systems, map the data elements from different systems to each other.
- **Establish standardized format and taxonomy**
 - Establish clear rules for naming data elements.
 - Create a hierarchical structure or classification system of data elements
 - Create a template or guidelines for writing data element definitions.
 - Select a tool or platform for managing the data lexicon.

At the end of the Design phase plan is to have an initial version of Data Lexicon, however this effort will run into development phase. Also, Data Lexicon will keep evolving throughout the project and beyond.

5. Design Centralized Reporting Hub (*not included in plan*)

Additionally, the demonstrated site (Reporting Centralized Hub) that was showcased during one of the meetings between Metropolitan and Markman Group, can be designed and developed on demand to meet specific needs, but the effort and timelines for its creation must be assessed and communicated individually based on scope and complexity. A detailed evaluation will ensure accurate planning and resource allocation for successful delivery.

Objective:

Design a single, unified platform for managing, integrating, and accessing data and reporting from various sources across an organization.

OUTPUT: Preliminary view of KPI Catalogue and Data Lexicon

Change Management

Objective:

Define a change management plan that ensures successfully transition users to new data and reporting processes, minimizing disruption, and maximizing adoption.

Key Activities:

- **Impact Assessment:** Identify impacted business processes, analyze the impact on roles and responsibilities, and evaluate the technical impact on systems and data flows.
- **Change Readiness Assessment:** Evaluate organizational culture and openness to change, assess current skill levels and identify any skill gaps, and anticipate potential resistance points and their underlying causes.
- **Change Management Strategy Development:** Define clear objectives for the change management plan, establish measurable KPIs, outline a detailed communication plan, develop a comprehensive training plan, and create a robust support plan for users.

OUTPUT: Change Management Plan