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Governance of Analytical Judgment in Corporate Valuation

Designing a Framework for Internal Signal Detection and Knowledge Capitalisation in an Integrated Audit Group

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Table of Contents

List of abbreviations

(ABC) – Asset-Based Consulting

(API) – Application Programming Interface

(BFR) – Besoin en Fonds de Roulement (Working Capital Requirement)

(DCF) – Discounted Cash Flow

(DSO) – Days Sales Outstanding

(EBITDA) – Earnings Before Interest, Taxes, Depreciation and Amortisation

(FAE) – Accrued Revenue (Factures à Établir)

(FEC) – Standard Audit File for Accounting Data (Fichier des Écritures Comptables)

(FNP) – Accrued Expenses / Goods Received Not Invoiced

(GDPR) – General Data Protection Regulation

(IFRS) – International Financial Reporting Standards

(KBV) – Knowledge-Based View

(LBO) – Leveraged Buy-Out

NAR – Net Asset Revaluation

(NewCo) – Newly Created Acquisition Vehicle

(OBO) – Owner Buy-Out

(PCG) – Plan Comptable Général

(PSF) – Professional Services Firm

(SME) – Small and Medium-Sized Enterprise

(VDD) – Vendor Due Diligence

(WACC) – Weighted Average Cost of Capital

(WCR) – Working Capital Requirement

Introduction

This thesis is part of the final internship carried out within the CPA Audit group, and more specifically within its financial advisory structure Caelius Partners, which specialises in valuation, restructuring and transaction services.

Positioned at the interface between accounting information production and forward-looking financial analysis, the firm is involved in a variety of contexts, such as financial distress situations, litigation, divestitures and capital restructuring. These assignments involve recognised valuation methods and are based on in-depth data processing, modelling and arbitration on economic and financial assumptions.

Beyond the technical application of these methods, the internship experience provided an opportunity to observe the practical functioning of a valuation activity within an integrated group with a large client portfolio and direct access to regularly updated accounting information. Two observations gradually shaped the thinking developed in this work.

The first concerns the identification of needs for specialised assignments. Despite the availability of financial data within the group, the emergence of valuation or restructuring assignments is mainly based on explicit requests from clients or on the initiative of partners. There is no formalised analytical framework that can be used to systematically identify, based on existing information, companies that are likely to show signs of financial stress, shareholder conflict or strategic transition.

The second observation concerns the structure of the work carried out. Each assignment gives rise to in-depth analyses, including accounting restatements, cash and debt classification, scenario building and risk parameter calibration. However, once the file is completed, these analyses remain largely tied to the case in question and are rarely organised in a cumulative manner that would allow them to be reused across the board.

These observations highlight an organisational tension: an analytically demanding activity, but one whose output remains poorly structured at the collective level. The central question therefore does not concern the methods themselves, but rather how the reasoning produced can be organised in order to enhance consistency, traceability and collective learning.

The thesis question can therefore be formulated as follows:

How can valuation practices be structured within a firm that is part of an audit group in order to improve the internal identification of situations that generate specialised assignments and to strengthen the capitalisation of the reasoning developed in the cases handled?

The aim of the thesis is to analyse, based on concrete professional experience, the organisational weaknesses observed and to examine possible levers for improvement while respecting the firm's operational constraints. The aim is neither to question existing valuation

methods nor to seek to automate expert judgement, but to explore the conditions for an intermediate analytical structure that reconciles professional flexibility and cumulative learning.

The dissertation is organised into four chapters. The first presents the professional context of the internship and the organisational framework within which the valuation activity takes place. The second formalises the analytical and methodological weaknesses observed in the practice of the assignments. The third develops the analytical foundations necessary for a more coherent structuring of valuation reasoning. Finally, the fourth examines the operational implementation of areas for improvement based on the assignments completed during the internship.

This work thus aims to analyse how a financial valuation activity focused on individual cases can evolve towards a more structured analysis, capable of transforming accumulated experience into collective intelligence without altering its rigour or interpretative dimension.

1 Company and Professional Context

1.1 Presentation of the Audit CPA Group and Caelius Partners

1.1.1 Audit CPA Group: positioning, organisation, and strategic orientation

The internship that served as the basis for this thesis took place at Caelius Partners, a firm specialising in corporate finance, valuation and financial modelling, which is part of the Audit CPA Group. In order to understand the issues addressed in this thesis, it is necessary to analyse Audit CPA not as a simple grouping of independent firms, but as a system for producing professional services, whose organisational architecture and strategic choices directly determine how financial data is produced, used and valued between each entity.

Strategic positioning within the mid-tier professional services market

Audit CPA is an independent French group founded in 2005, historically positioned in the fields of accounting, auditing and business consulting. Its development has been based on a gradual structuring into a network of firms, characterised by a high degree of operational decentralisation and a focus on geographical proximity to clients. This positioning corresponds to the mid-sized Professional Services Firms (PSFs) segment, targeting mainly SMEs, family-owned mid-cap companies and groups organised as holding companies. In 2025, Audit CPA comprises more than 26 firms, has more than 350 direct employees, excluding shared service centres (SSCs), and generates consolidated revenue of approximately €80 million.

This positioning requires a dual strategic approach. On the one hand, the group must ensure sufficient industrialisation of recurring accounting processes in order to guarantee regulatory compliance, data reliability and cost control. On the other hand, it must be able to support its clients on higher value-added issues such as valuation, restructuring or transaction operations. The firm's value increasingly relies on the exploitation of abundant and granular financial data, in an environment where transparency is becoming a central pillar of corporate governance (Alassuli et al., 2025).

This strategic duality observed at Audit CPA is part of a broader structural transformation of the accounting profession, which has been widely documented in recent literature. Research on the digital transformation of the accounting profession shows that mid-sized firms are particularly exposed to this tension, as they have neither the investment power of the Big Four nor the extreme flexibility of small structures (Ouida & Kobiyh, 2023) and (Alassuli et al., 2025).

The digitisation of accounting processes, accelerated by the health crisis, has led to increasing standardisation of low value-added activities, automatically reducing their relative profitability. In this context, a firm's ability to create value relies less and less on the production of financial information itself and more on its analytical and interpretative transformation, conditioning the evolution of the economic model towards more knowledge-intensive services.

Organisational architecture: the decentralised network model

Organisationally, Audit CPA adopts a decentralised network model, in which firms have a high degree of operational autonomy. This architecture promotes local agility, commercial responsiveness and adaptation to the specific sectoral and territorial characteristics of clients. It also makes it possible to cover a wide range of needs, combining accounting expertise, statutory auditing and management consulting.

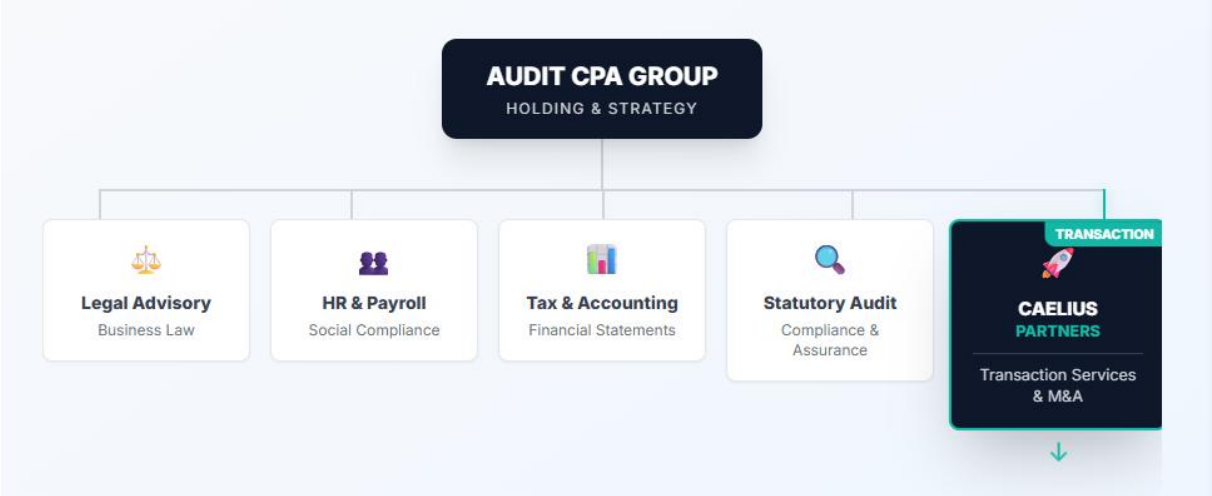

Figure 1 – Organisational structure of the Audit CPA group and positioning of Caelius Partners

Yet this configuration can be analysed as a loosely coupled modular system as described in organisational engineering. While this modularity is a factor in flexibility, it also generates structural limitations that are well identified in the literature on professional services firms. Particularly, it tends to fragment the production and circulation of knowledge within the organisation.

According to the Knowledge-Based View (KBV), the performance of knowledge-intensive organisations depends on their ability to create, mobilise and coordinate dispersed knowledge (Nickerson & Zenger, 2004). During the internship and in a highly decentralised model such as that of Audit CPA, this was visible in the way financial analyses remained embedded within individual engagement files rather than shared at group leve. This configuration promotes individual expertise and contextualised judgement but limits collective capitalisation and the systematic reuse of the information produced.

Data abundance and limits of organisational intelligence

This observation is all the more striking given that financial data is structurally abundant within the group. The volume of files processed, the diversity of assignments carried out and the gradual digitisation of accounting production, particularly via cloud platforms, have considerably increased the granularity, frequency and homogeneity of the data available. However, as highlighted in the literature on the digital transformation of the accounting professions, data abundance does not automatically translate into increased organisational intelligence.

In practice, data continues to be used primarily for production or regulatory compliance purposes, and its cross-functional analytical use remains limited. This situation illustrates a paradox frequently observed in PSFs. In practice, digitalisation improves operational efficiency. It does not automatically strengthen analytical capability, unless data structuring, governance and reuse mechanisms evolve.

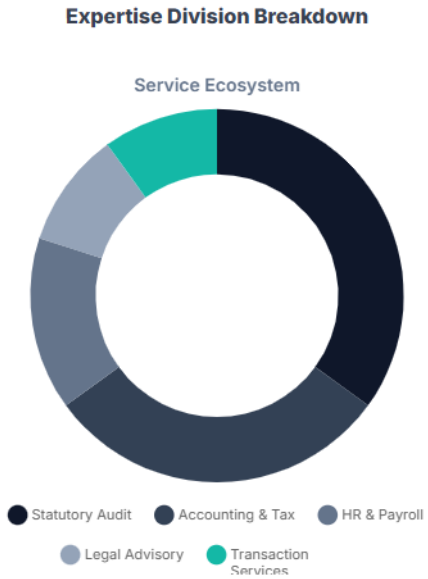

Figure 2 – Cross-functional service architecture of Audit CPA

Comparative perspective: mid-tier firms versus Big Four models

By way of comparison, large international professional services firms such as Deloitte, PwC, EY and KPMG operate according to different organisational models. Comparative analyses highlight highly centralised structures, characterised by advanced process standardisation, extensive integration of information systems and a high capacity to aggregate and analyse data produced on a global scale.

These organisations have historically invested in shared analytical infrastructures, enabling them to transform massive volumes of data from audit, consulting and transaction assignments into tools for management, internal benchmarking and quality control. This industrialisation of data is one of their competitive advantages, as it reinforces methodological consistency and the comparability of the analyses produced.

Despite this difference in size and model, this comparison does not invalidate the relevance of the organisational framework chosen. It highlights a growing gap between the informational potential generated by digitalisation and the ability to transform it into collective analytical intelligence.

Strategic orientation toward Asset-Based Consulting

Recent research on Asset-Based Consulting (ABC) shows that the most advanced firms are shifting their strategic vision by investing in analytical, methodological and technological assets

that enable them to decouple value creation from human capital alone. Without calling into question the central role of professional judgement, this evolution aims to structure the knowledge produced during assignments in order to make it reusable, comparable and auditable.

From this perspective, ABC can be defined as the use of proprietary tools, technologies and methods (software, algorithms, structured databases) designed to standardise certain aspects of problem solving. As highlighted by PwC (PwC, 2020b, 2020a), value creation in professional services is thus increasingly less reliant on the ad hoc mobilisation of human capital and increasingly more reliant on the ability to build and leverage reusable analytical and informational assets.

For the CPA Audit group, the adoption of ABC enables a fundamental "decoupling": revenue generation is no longer strictly linked to human time spent. Once an analytical asset (e.g., a sector risk scoring model or fraud detection algorithm) has been developed, it can be deployed across an unlimited number of client engagements, at near-zero marginal cost. In professional literature, this operational lever is one of the main mechanisms identified for improving the scalability and economic sustainability of professional services firms.

Dimension	**Traditional Model (Job-Shop)**	**Asset-Based Consulting (ABC) Model**
Revenue Source	Time Spent (Hours x Rate)	Licences, Subscriptions, Results
Growth Lever	Linear Recruitment (Staffing)	Technological Scalability (Assets)
Nature of the Asset	Human Capital (Tacit)	Structural Capital (Codified/Data)
Customer Relations	Transactional/One-off	Continuous / Relational
Margins	Under pressure, declining	High, thanks to zero marginal cost

Valuation of the firm	Low multiple (human risk)	High multiple (recurring revenue)

Table 1 – Structural comparison between the traditional model and the asset-based consulting model

Recent professional analyses confirm this shift towards value creation models based on reusable analytical assets. Work by Deloitte(Deloitte, 2024, 2025) shows that the most advanced organisations in adopting analytical technologies and generative AI are able to move beyond a logic of individual productivity to structure collective analytical capabilities, gradually decoupling the value created from the human time mobilised. This strategic shift is a key differentiator in professional services, enabling the firm to scale up its services, standardise its methodologies and improve the comparability of the analyses it produces.

At this stage, Audit CPA can be considered to be in an intermediate phase of transition. Production tools are largely digitised via Pennylane software, but the transformation of financial data into cross-functional analytical intelligence remains weak. This observation is a key point for the present work: it highlights the gap between the analytical potential generated by increasing digitisation and the actual organisational capabilities to structure, capitalise on and exploit this potential.

This is precisely where the thesis's problem statement comes in. It does not seek to challenge the group's decentralised model, but rather to examine the conditions for its partial transition towards a more systematic, cumulative and value-oriented approach to analytical intelligence.

1.1.2 Digital transformation and regulatory context in the accounting and advisory profession

The accounting profession, and more broadly financial advisory activities, are undergoing a structural transformation often described as the “Industry 4.0” shift of the service sector. This change is the result of the convergence of, on the one hand, the increasing automation of accounting and financial flows thanks to digital technologies and, on the other hand, the tightening of the European regulatory framework, which reinforces the requirements for transparency, traceability and risk anticipation.

Digitalisation: from automation to analytical value creation

From a process engineering perspective, digitalisation decouples operational efficiency from analytical value creation. Automation technologies such as automatic document recognition, robotic process automation (RPA) and cloud platforms are primarily aimed at reducing costs, processing times and human error.

Empirical studies show that this automation significantly improves the reliability and availability of financial information, transforming accounting into a continuous, standardised information

flow that can be exploited in near real time (Ismail et al., 2024). However, the literature emphasises that a distinction should be made between this automation and the actual analytical use of data. While the former is driven by efficiency, the latter is the main lever for strategic value creation (Bedford et al., 2025).

In this context, a firm's value proposition no longer lies primarily in the production of financial statements, but in its ability to interpret, analyse and exploit growing volumes of financial data. Several studies highlight that the adoption of advanced analytics tools enables SMEs to significantly improve their overall financial performance by facilitating the identification of profitability levers, operational risks and value creation opportunities. This evolution requires firms to gradually develop their skills towards analyst, strategic advisory and decision-making support functions.

Digitalisation is based primarily on the centralisation of accounting data via cloud infrastructures, enabling real-time access and gradual standardisation. This development improves the reliability and availability of financial information, but does not in itself guarantee its transformation into a management tool. In the case of Audit CPA, this approach has resulted in the adoption of a common cloud platform, but analytical practices remain varied across firms and teams.

In reality, the challenge is no longer about producing data, but rather about its ability to feed into continuous monitoring and alert systems. This aspect becomes particularly strategic in the context of Early Warning Systems promoted by European regulations, which require a dynamic and comparative reading of financial trajectories.

Regulatory transformation and the institutionalisation of Early Warning Systems

Alongside technological transformation, the European regulatory framework is accelerating the digitalisation of accounting and financial practices. Directive (EU) 2019/1023,(2019) on preventive restructuring frameworks, insolvency and second chance marks a major shift in the way companies' difficulties should be addressed. One of its central objectives is the implementation of early warning tools called Early Warning Systems (EWS) designed to detect signs of financial deterioration at an early stage and encourage managers to take early action.

This directive introduces the following conceptual shift: the management of difficulties is no longer viewed solely from a legal and remedial perspective, but as a preventive process based on the continuous analysis of companies' financial situations. Accounting and consulting firms are thus positioned at the heart of these mechanisms, as producers, interpreters and analysts of financial information.

Work on transposing the directive in various Member States shows that EWSs rely on the use of standardised financial data, combined with analytical models capable of identifying risk trajectories such as:

- late payments,
- margin deterioration,

- cash flow tensions,
- changes in working capital requirements).

This logic reinforces the need for firms to have reliable data, common analytical frameworks and modelling capabilities.

Strategic implications and structural constraints for professional services firms

The combination of technological pressure and tighter regulations is placing firms under increasing structural constraints. On the one hand, automation is mechanically reducing the economic value of standardised accounting services. On the other hand, regulations are requiring increased analytical capabilities, regardless of the organisational maturity of firms.

The literature emphasises that digitalisation only creates value if it is accompanied by investment in proprietary analytical assets that enable the knowledge produced to be structured, capitalised and reused (Majekodunmi & Olaleye, n.d.). In the absence of such systems, the increased availability of financial data and stricter regulatory requirements tend to increase operational complexity without a proportional improvement in decision-making quality.

In this context, the challenge shifts from access to information to the implementation of continuous monitoring and alert systems (Early Warning Systems) based on standardised, traceable and comparable indicators over time.

1.1.3 Caelius Partners: role within the group and positioning in Valuation and Advisory

Within the Audit CPA group, Caelius Partners occupies a distinct strategic position. It differs from operational firms historically structured around accounting, statutory auditing and regulatory compliance. Its raison d'être is not to repeat standardised processes or manage recurring financial information flows, but to address issues characterised by a high degree of analytical complexity, economic uncertainty and external constraints.

The emergence of Caelius within the group responds to a structural evolution in the nature of the problems encountered by clients. As economic environments become more complex, regulatory frameworks become denser and more transactional or contentious situations multiply, the limitations of the traditional accounting model become more apparent. Standard tools, conventional analysis models and traditional timeframes, which are perfectly suited to recurring and standardised situations, prove insufficient when the challenge is no longer simply to produce compliant information, but to structure a defensible economic interpretation in the face of uncertainty.

This logic fits directly into the Problem-Solving Theory of the Firm, according to which organisational performance depends on the ability to allocate problems to the units with the most appropriate cognitive and analytical capabilities to solve them (Nickerson & Zenger, 2004). Under this logic, Caelius Partners is neither a simple technical extension of the

network's firms nor a competing entity, but rather an organisational response to the increasing complexity of the financial issues handled by the Audit CPA group.

Where operational firms excel in producing reliable, standardised accounting information that complies with regulatory requirements, Caelius steps in when the nature of the problem changes the analytical framework. Advanced financial restructuring valuation or economic damage assessment assignments require specific modelling, forward thinking and methodological arbitration skills. These situations involve going beyond ex post accounting analysis to construct financial trajectories, compare alternative scenarios and explain fundamentally debatable choices to third-party investors, courts, judicial administrators or transaction counterparties.

In this context, Caelius plays a strategic role in transforming data within the group. Caelius' mission is to transform this raw data into high value-added financial information that can be used in contexts where decisions cannot be based solely on compliance or standardised aggregates. This transformation is based on the construction of complex financial reasoning, incorporating forward-looking assumptions, counterfactual scenarios and valuation frameworks that are subject to discussion, challenge or arbitration.

This function gives Caelius a cross-functional and strategic role within the Audit CPA group's ecosystem. It acts as a centre of expertise that can be called upon when situations exceed the analytical capabilities of traditional structures. Caelius intervenes precisely in areas where value can no longer be produced by applying standards or procedures, but rather by the ability to frame uncertainty through modelling, make methodological trade-offs explicit and produce robust economic interpretations in constrained environments.

Recent developments in the regulatory environment and market expectations reinforce this positioning. The rise of early warning systems, notably through Directive (EU) 2019/1023, as well as the intensification of economic and financial litigation, are shifting demand towards dynamic analyses that are comparable over time and methodologically defensible. The objective is no longer limited to establishing a value at a given moment. It is to produce a continuous reading of financial trajectories, capable of identifying weak signals, structural breaks and plausible scenarios for future developments.

In this context, the traditional transactional model based on one-off analyses, which are highly contextualised and difficult to reuse, is gradually showing its limitations. However, the assignments carried out by Caelius generate a wealth of information, resulting from the recurrence of certain fundamental financial issues: growth assumptions, margin structures, cash flow dynamics, valuation parameters, and methodological trade-offs. This recurrence reveals a strategic potential that is still largely untapped at the group level.

Caelius Partners therefore provides a privileged vantage point from which to analyse the limitations of a model based on the ad hoc resolution of complex financial problems, as well as the organisational and methodological tensions that result from it. At the level of the Audit CPA group, these tensions raise questions about the conditions under which existing analytical

practices could evolve towards more structured, comparable and consistent forms, without compromising the flexibility that is essential for dealing with non-standard situations.

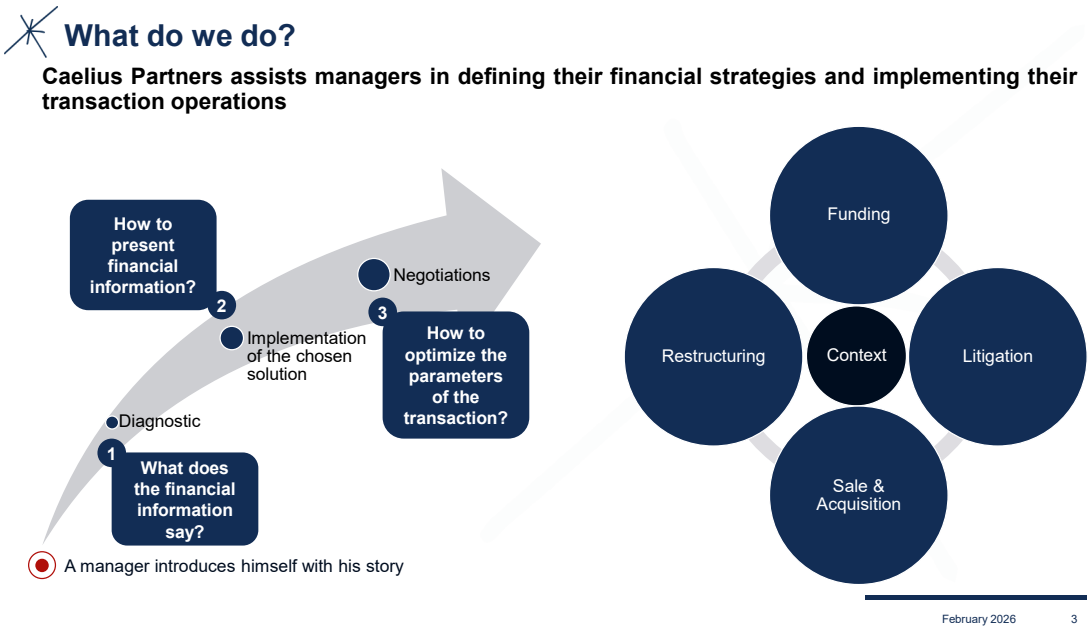

Figure 3 – Overview of Caelius Partners' service scope and intervention process

1.2 Description of the professional environment and analyst's role

1.2.1 Organisation of the Valuation and Transactions department

The Valuation and Transactions department is a specialised organisational unit designed to address highly analytical financial issues. These environments are characterised by uncertainty, variable external constraints and demanding methodological standards. Its organisation is not based on the repetition of standardised processes, but on the collective ability to absorb a variety of non-routine tasks requiring frequent analytical trade-offs and flexible coordination of resources.

This organisational configuration is part of the broader transformations observed within consulting and accounting firms faced with the rise of high value-added assignments and the increasing digitisation of financial information flows. It differs significantly from organisations dedicated to statutory auditing or recurring accounting production, whose structures have historically been optimised for standardisation, seasonality and procedural compliance.

A project-based and modular organisational structure

The department is based on a deliberately light and streamlined structure, composed of a limited number of specialised consultants. In organisational systems engineering terms, this configuration is similar to a job-shop type unit production model, characterised by a wide variety of tasks, low standardisation of flows and continuous adaptation of resources to the specificities of each assignment.

Each assignment constitutes an autonomous analytical production unit, defined by a scope, an objective and a set of specific constraints. Assignments can differ significantly in terms of duration, criticality and complexity: some interventions are one-off and limited in scope (value opinions, targeted financial appraisals), while others are long-term, particularly in the context of restructuring, collective proceedings or litigation, with procedural milestones imposed by external actors such as judicial administrators, courts or legal advisers.

Coordination mechanisms and horizontal structure

In terms of hierarchy, the department is characterised by a relatively horizontal structure. This organisation is consistent with the nature of the assignments handled, which require the direct analytical involvement of consultants throughout the production cycle, from understanding the context to contributing to the final deliverables.

Internal coordination is not based on a strict functional division of tasks, but on mechanisms for review, regular exchanges and managerial validation. These mechanisms aim to ensure methodological consistency, quality of reasoning and robustness of conclusions, without freezing analytical processes in excessively standardised procedures.

This horizontal structure facilitates rapid information flow and responsiveness to external constraints. It also allows the team to address situations not covered by standard procedural frameworks. On the other hand, it limits the explicit formalisation of common analytical rules and increases dependence on informal interactions for the dissemination of practices and know-how.

In this regard, the literature emphasises that this organisational evolution is closely linked to the digital transformation of accounting firms. The automation of accounting production tasks frees up cognitive time, allowing teams to refocus on higher value-added analysis, interpretation and advisory activities (Ibouh & Laamraoui, 2024). The Valuation and Transactions department is fully in line with this dynamic, concentrating its resources on intellectually intensive activities.

Knowledge management configuration and organisational tensions

From a knowledge management perspective, the department's organisation is hybrid in nature, combining a predominantly personalised strategy with limited attempts at codification. In line with the typology proposed by (Janicot et al., 2021), the value produced still relies heavily on the tacit expertise, accumulated experience and professional judgement of the consultants.

Assignments are approached as unique cases, requiring a detailed understanding of the economic, legal and financial context specific to each case. The knowledge produced remains closely tied to the problem-solving process and mainly takes the form of analytical reasoning, specific financial models and contextualised methodological trade-offs.

In concrete terms, this translates less into a lack of information than into a difficulty in establishing common production routines. Best practices are shared, but mainly through mentoring, reviews and day-to-day exchanges, which makes their dissemination uneven when the project workload increases.

Organisational limits and analytical silos

The point of fragility is not the quality of the analyses produced, but their organisational continuity. In a project-based environment, collective learning depends heavily on the availability of teams and review mechanisms, which makes it more difficult to consolidate practices when missions follow one another in quick succession.

1.2.2 Scope of assignments and typology of missions

The scope of the Valuation and Transactions department covers a wide range of corporate finance assignments, characterised by a high level of analytical intensity and direct exposure to economic, transactional or jurisdictional decisions. These assignments differ not only in their financial object, but also in their decision-making purpose, institutional framework and external constraints.

The department is mainly involved in four main types of assignments:

- business or securities valuations in transactional or asset management contexts,
- transaction services (buy-side and sell-side),
- support for companies in difficulty in the context of safeguard or receivership proceedings,
- economic damage assessments and financial expertise in litigation contexts.

In addition to these categories, the department also provides ad hoc strategic financial analysis and forward-looking modelling services at the request of executives, investors or financial partners when the decision to be informed goes beyond the scope of accounting or regulatory auditing.

Heterogeneity of objectives and external constraints

The assignments handled differ primarily in terms of their economic objectives. Some aim to inform decisions on investment, divestment or capital restructuring, with a primarily forward-looking and strategic approach. Others aim to establish a legally defensible value in a contentious context, or to demonstrate the economic viability of a going concern project subject to assessment by institutional third parties.

The recipients of the analyses are themselves diverse: company executives, financial investors, banking institutions, judicial administrators, solicitors or courts. This diversity imposes different requirements in terms of methodological precision, pedagogy and traceability of reasoning. In some cases, the analysis aims to support negotiations. In others, it must be able to withstand thorough cross-examination, sometimes several years after its production.

External constraints, whether regulatory, judicial or time-related, directly influence the structure of the work. Deadlines may be imposed by a procedural timetable, a court hearing or an ongoing transaction. These constraints shape the granularity of the analyses, the degree of formalisation expected and the level of documentation required at each stage.

Recurrent analytical patterns across heterogeneous missions

Although the contexts appear heterogeneous, cross-case analysis reveals strong recurrence in the analytical operations performed. The work is mainly based on a common methodological foundation, including analysis of historical performance, normalisation of economic aggregates (in particular EBITDA) , modelling of future cash flows and the application of standard valuation methods such as discounted cash flow (DCF) or market comparables approaches (Fernández, 2002).

This recurrence confirms that, regardless of the specific context of the assignment, a substantial part of the work consists of similar transformations of raw accounting data. The differences observed between cases are less related to the nature of the tools used than to the assumptions made, the level of granularity of the analyses, and the legal or informational constraints specific to each situation.

In practice, the analytical process thus follows a relatively stable sequence: creation of a restated financial base, economic interpretation of past performance, construction of consistent forward-looking assumptions, and then translation of these assumptions into financial trajectories and value indicators. This pattern is found, in adapted forms, in all of the department's assignments.

Focus on distressed firms and constrained analytical environments

A significant portion of the department's activity concerns distressed companies undergoing safeguard or receivership proceedings. These assignments are characterised by a highly constrained analytical environment, combining time pressure, often incomplete or degraded financial information, and high economic and legal justification requirements.

In these contexts, the analysis aims to reconstruct reliable financial histories, identify the structural sources of economic imbalance and construct cash flow projections to assess the feasibility of a continuation plan. Financial modelling then becomes a central tool for collective decision-making, used in processes involving managers, administrators, creditors and courts.

Empirical studies show that preventive procedures have significantly higher success rates than remedial procedures, which reinforces the importance of forward-looking and rigorous financial analysis (France Stratégie, 2020). These assignments illustrate a shift in the role of the firm, which is no longer limited to identifying difficulties ex post, but actively participates in the construction of credible recovery trajectories.

Forensic and litigation assignments: valuation under scrutiny

Assignments involving the assessment of economic losses and financial expertise in litigation contexts are another key part of the firm's activity. They aim to quantify financial damage by comparing an observed situation with a counterfactual scenario, constructed on the basis of standardised economic assumptions.

This work is characterised by a high degree of adversarial exposure. The literature emphasises that the choice of key assumptions such as growth rates, normative margins and discounting parameters is a major source of variability in results and can undermine the credibility of conclusions in the absence of explicit and traceable justification (Baker et al., n.d.). Deliverables must therefore be designed as auditable analytical objects capable of withstanding scrutiny by opposing experts.

In these assignments, the internal consistency of the reasoning, the stability of the assumptions and the ability to link the results to the source data are quality criteria that are as important as the accuracy of the calculations themselves.

Process-level limits and analytical fragmentation

Finally, process analysis highlights a structural tension between the diversity of contexts dealt with and the similarity of the analytical operations performed. The same sequences of reprocessing, modelling and calibration of assumptions are found from one case to another, but they are not always framed by routines that are sufficiently stable to reduce production variance.

In practice, two economically similar assignments may lead to different decisions on recurring issues, such as the scope of normative EBITDA, the classification of non-recurring items or the treatment of working capital requirements. These differences do not reflect methodological inconsistency, but rather a natural dispersion of judgement when the rules of interpretation are not explicitly stated and reviewed in a consistent manner.

This point logically concludes the typology of assignments: it shows that, behind highly contextualised deliverables, a significant part of the work is based on repetitive operations whose robustness depend heavily on how they are documented, reviewed and transmitted within the team.

1.2.3 Role, responsibilities, and level of autonomy of the analyst

Within the Valuation and Transactions department at Caelius Partners, the analyst occupies a central position. At the micro-organisational level, they are responsible for transforming financial data into structured economic judgement. Their role is not limited to executing predefined procedures or mechanically applying standard valuation methods. It consists of conducting a series of analytical assessments that directly impact the quality, consistency and defensibility of the diagnoses produced.

The analyst is thus responsible for the entire analytical cycle, from the creation of the information base to the formalisation of the final deliverables. This responsibility gives their

work a technical, interpretative and decision-making dimension, which is particularly pronounced in contexts characterised by uncertainty, information asymmetry and regulatory or jurisdictional constraints.

The analyst as a manager of the financial data lifecycle

The analyst's primary responsibility is to reconstruct, standardise and interpret financial histories. This phase involves extracting accounting data from multiple sources, cleaning it, reprocessing it and reclassifying it in an economic context. This is not a purely mechanical operation, but an interpretative process aimed at transforming legal accounting, which is structured for tax and regulatory purposes, into an economic reading that can be used for financial analysis.

At this stage, the analyst must identify non-recurring items, isolate structural biases, restate performance aggregates (particularly EBITDA), analyse cash flow formation and reconstruct working capital requirements dynamics. These decisions determine all subsequent analyses and constitute a major methodological vulnerability, as they directly influence the basis on which forward-looking assumptions will be built.

The literature highlights that, in highly digitalised environments, the apparent reliability of data can mask profound inconsistencies, requiring a high level of professional scepticism and analytical reflexivity (Rochford et al., 2025). Analysts do not simply consume data. They assess its credibility, economic relevance and interpretative limits.

Construction of prospective hypotheses and scenario logic

Based on this historical analysis, the analyst is involved in constructing prospective hypotheses, which form the core of financial reasoning. They participate in developing revenue trajectories, defining normative margins, structuring costs and calibrating medium- and long-term financial hypotheses.

This phase simultaneously mobilises operational logic based on past experience, sector references and proven methodological frameworks, and exploratory logic, which is necessary to deal with specific, atypical or deteriorated situations. Consulting work shows that this cognitive ambidexterity is highly dependent on the client context, the level of uncertainty and the quality of the information available (Cordier & Marin, 2017).

Analysts must therefore strike a balance between caution and plausibility, economic continuity and strategic disruption, historical consistency and transformation scenarios. These trade-offs are only partially formalised and rely heavily on individual professional judgement, which makes this stage both critical and difficult to transfer.

Modelling, valuation, and analytical responsibility

The analyst then designs and uses financial models to project financial statements, discount cash flows and produce value estimates using various methods (DCF, market comparables,

asset-based approaches). They perform sensitivity analyses on key parameters and summarise the results in structured deliverables.

This step directly engages their analytical responsibility. The results produced can be used as a basis for investment decisions, transactional negotiations, or adversarial debates in a legal setting. The value created lies not only in the final figure, but in the model's ability to make explicit the relationships between assumptions, economic mechanisms, and observed results.

In this context, the quality of reasoning is measured as much by the internal consistency of the model as by the analyst's ability to explain their choices, recognise their limitations and document their assumptions in a defensible manner.

High autonomy and individual ambidexterity

Analysts are granted a high level of autonomy. In most assignments, they have considerable latitude in structuring models, choosing assumptions and organising analytical reasoning, subject to review by managers and partners.

This autonomy is identified in the literature as a key factor in individual performance in professional services firms, particularly when assignments are complex and non-standardised (Ceptureanu & Ceptureanu, 2025). It promotes reactivity, contextual adaptation and the ability to deal with situations not covered by standard analytical frameworks.

Cognitive load, analytical opacity, and risk of bias

The Analyst & AI Dynamics document highlights a critical aspect of the analyst's role: the cognitive load induced by the combination of tasks with low apparent added value (data preparation, processing and verification) and intellectually intensive activities (arbitration on assumptions, scenario building, methodological justification).

In contexts marked by transactional or legal urgency, this high cognitive load increases the risk of analytical bias and limits the ability to systematically document the choices made. When assumptions are constructed under time constraints and without an explicit internal reference framework, their justification is based mainly on contextual arguments that are difficult to compare or objectify ex post.

This situation reinforces what the literature refers to as the analytical "grey box": the reasoning produced is of high quality, but its traceability, comparability and persistence beyond the scope of the assignment are limited.

Limits of autonomy and need for analytical structuring

However, this autonomy automatically increases the dependence of the analytical process on individual judgement. The reasoning produced is often robust and sophisticated, but its logic remains largely tacit, difficult to transfer and not very persistent at the collective level.

The analyst's autonomy thus appears to be a necessary condition for the quality of the analyses produced, but also a source of methodological fragility when it is not backed by an infrastructure for structuring and capitalisation.

In the absence of internal analytical databases, hypothesis repositories or cross-functional traceability mechanisms, the knowledge generated during missions remains largely individual and ephemeral. This situation does not call into question the centrality of professional judgement, but it does highlight the need to equip it with tools.

Moving from artisanal expertise to more systematic analytical intelligence requires providing analysts with clearer structuring frameworks for structuring, archiving and reusing the information produced, without reducing their ability to adapt to different contexts.

Ultimately, the role of the analyst within the Valuation and Transactions department is characterised by a high level of analytical responsibility, extensive autonomy and a heavy cognitive workload. This configuration allows for detailed analysis, but makes documentation and cross-file recovery more costly. It forms the starting point for the thesis, which focuses on the addition of concrete structuring and traceability mechanisms compatible with the way Caelius Partners operates.

1.3 Tools and methodological framework used during the internship

1.3.1 Pennylane as a source of accounting and financial data

The methodological architecture used within the Valuation and Transactions department at Caelius Partners is based on a clearly sequenced financial information processing chain, within which Pennylane acts as an upstream infrastructure. The platform is not a financial analysis tool per se, but rather a centralised system for acquiring, standardising and ensuring the reliability of accounting data, which directly determines the quality of the analytical base used downstream.

Cloud-native infrastructure and continuous accounting

Pennylane represents a clear technological break with traditional accounting systems based on batch processing. As a cloud-native solution, it enables a transition from periodic ex post accounting to quasi-continuous flow accounting, based on permanent interconnection with banking institutions and invoicing systems.

Technically, the platform performs three critical functions in the financial data engineering chain:

- Automated data aggregation: thanks to banking connectors and automation mechanisms, transactions are integrated with greatly reduced latency. Work on accounting process automation shows that these systems enable significant efficiency gains in data entry and reconciliation cycles, while substantially reducing human error.
- Structuring and auditability: data is organised in standardised formats (balances, journals, FEC), ensuring immediate interoperability. Traceability is enhanced by the systematic link

between the accounting entry and the digitised supporting document, facilitating verification and analytical drilling operations.

- Reliability of the information base: upstream automation and standardisation improve financial transparency and reporting quality, as confirmed by empirical work on the digital transformation of the finance function.

This infrastructure thus significantly reduces what the literature refers to as "data debt", i.e. the accumulation of biases, errors and inconsistencies resulting from manual or heterogeneous data entry practices.

Automation versus analytical intelligence: a theoretical gap

The integration of Pennylane into the Audit CPA group clearly illustrates the distinction made by (Bedford et al., 2025) between automation and analytics. While the platform excels at automating low-value-added tasks, it does not in itself produce financial diagnostics, economic projections or value estimates.

The literature emphasises that the increased availability of accounting data does not automatically translate into actionable decision-making intelligence (Kanaparthi, 2024). Pennylane provides standardised, comprehensive and traceable data (general ledgers, detailed entries, transaction histories) but does not address the question of their economic interpretation. The transformation of these accounting flows into management aggregates (standardised EBITDA, available cash flow, standardised working capital requirements) remains an intellectual and methodological operation that requires the professional judgement of the analyst.

Methodological interface and downstream transformation

In the cases I observed during the internship, the use of Pennylane is deliberately limited to the phase of ingesting and validating accounting information. Data extracted from the platform is systematically exported to downstream financial modelling environments, mainly in Excel.

This break between the cloud infrastructure and the modelling tools is a major methodological sticking point. While the upstream part of the chain is highly industrialised, the downstream part is largely artisanal, relying on independent files and manual reprocessing. As highlighted by an internal source, accounting and financial interoperability, this lack of analytical continuity prevents any systematic capitalisation of financial reasoning built up mission by mission, maintaining a disconnect between the digitalised production of accounting data and long-term analytical exploitation.

Limits of data sovereignty and analytical capitalisation

The adoption of a cloud infrastructure also raises the issue of data sovereignty and technological dependence. While Pennylane offers high levels of security and compliance, the analytical intelligence it produces remains, as it stands, decoupled from the platform and confined to local files. The challenge for the firm is therefore not only to extract reliable and

traceable financial statements, but also to recognise that Pennylane, as an accounting infrastructure, does not in itself allow the underlying economic behaviours (normative margins, payment terms, cost structures) to be captured, structured and capitalised in sustainable internal analytical repositories.

Thus, the extractions from Pennylane form the upstream foundation, but the diagnosis and valuation are constructed downstream in the department's Excel files, which become the effective production unit for the models.

1.3.2 Excel as the core analytical and modelling infrastructure

Conceptually, Excel can be analysed as an unstructured visual programming environment. Unlike integrated software packages (ERP) or specialised valuation software, it is not based on rigidly coded processes, but on a logic of free model construction by the end user. This feature gives Excel what the literature describes as “latent flexibility,” a key factor in its continued adoption in advanced financial functions (Hilmi & Kaizar, 2023).

This flexibility is particularly well suited to the contexts handled by Caelius Partners, where the situations encountered, mainly involving judicial restructuring, litigation and transactional operations, frequently fall outside standard patterns. Excel thus makes it possible to translate a changing economic reality into adjustable financial equations, where integrated systems often impose excessive standardisation of assumptions and flows.

Internal modelling matrix and sequential analytical logic

Within the department, Excel is structured around an internal financial modelling matrix, developed and progressively enriched by the firm. This matrix provides a generic framework that can be adapted to a wide variety of sectors, company sizes and issues. It is designed according to a modular and sequential logic, reflecting the intellectual process of financial analysis.

The model's typical architecture is based on several interconnected functional layers:

- an ingestion layer, dedicated to importing and reprocessing data from Pennylane or accounting records;
- a diagnostic layer, focused on analysing historical performance, reconstructing normative aggregates and studying cash flow dynamics;
- a projection engine, enabling the construction of detailed business plans and cash flow projections over different time horizons;
- a valuation module, in which the main valuation methods are applied (DCF, comparables, asset-based approaches where applicable).

This structure gives Excel a genuine analytical infrastructure function, in the sense that it simultaneously concentrates data, assumptions, models and results, while ensuring the overall consistency of financial reasoning.

The “grey box” paradox and governance issues

In this section, the concept of the “grey box” is used exclusively to describe the structural opacity of Excel models as intermediate analytical objects.

However, Excel's analytical power comes with structural limitations that are well identified in the literature on financial information systems. Excel is a "grey box": while the formulas are visible and accessible, the overall logic of the reasoning, the dependencies between modules and the inter-tab data flows remain largely implicit and dependent on the analyst who designed the model.

This relative opacity generates several organisational and methodological risks. On the one hand, the auditability of models is complex: managerial review relies more on the analyst's teaching skills than on formalised control mechanisms. In practice, understanding a model often required direct discussion with the analyst who built it. On the other hand, the lack of strict separation between data, assumptions and calculation logic exposes models to silent errors that are difficult to detect ex ante.

These observations align with documented risks associated with shadow IT and end-user computing, which are widely documented in financial services (AWS Well-Architected Financial Services Industry Lens, 2024). In this context, the risk is not only operational but also reputational, particularly when the models produced are used to generate expert reports for external third parties.

Fragmentation, silos, and lack of analytical persistence

The use of Excel is based on standalone task files, which is consistent with the need to customise models. The limitation becomes apparent when attempting to standardise the review, traceability and partial reuse of analytical building blocks. Excel offers local transparency but provides few native safeguards for structuring the documentation of assumptions, organising data lineage and securing the transfer of a model to another analyst.

Towards governance layers rather than tool substitution

Recent work on analytical architectures in financial services converges on a central observation: value creation does not necessarily require the replacement of existing tools, but rather the addition of layers of governance, structuring and traceability on top of these tools.

From this perspective, the challenge for Caelius Partners is not to replace Excel, but to frame it with layers of analytical governance. The aim is to preserve its flexibility and modelling power while injecting mechanisms that enable cross-functional capitalisation of analytical data, standardisation of model architectures and traceability of assumptions.

In summary, Excel is indispensable because it can handle a wide variety of files, but it makes reasoning governance costly when you want to strengthen traceability, cross-checking, and model recovery. This constraint explains why the subject of the thesis is not about replacing the tool, but about adding layers of structure on top of what already exists.

It justifies, on the one hand, the analysis of the nature of deliverables and their use by stakeholders (section 1.3.3) and, on the other hand, the development of a framework designed to transform the aggregation of isolated models into cumulative analytical intelligence, compatible with the growing requirements for robustness, traceability and credibility of valuation work.

1.3.3 Nature of deliverables and interaction with stakeholders

The deliverables produced by the Valuation and Transactions department are the result of the process of transforming raw accounting data into decision-making intelligence. In professional services, these documents are not simply reporting tools. They function as decision-making, transactional and sometimes jurisdictional instruments, whose function is to reduce information asymmetry between stakeholders with heterogeneous interests and levels of expertise.

The recipients of these deliverables include company executives, investment funds, banking institutions, administrators and judicial representatives, lawyers and, in certain contexts, commercial courts. This diversity imposes particularly high requirements in terms of methodological rigour, traceability of assumptions and pedagogical clarity of financial reasoning.

The deliverable as a decision-support and proof instrument

The main deliverables take the form of valuation reports, memoranda, independent expert reports or technical notes produced in litigation contexts. These documents are not limited to presenting numerical results: they embody an analytical position that may influence a transaction price, an investment decision, a negotiation between parties or a judicial assessment.

From a decision-making engineering perspective, each deliverable serves to reduce uncertainty. It transforms a probabilistic and assumption-sensitive Excel model into a defensible operational conclusion. The credibility of the deliverable therefore depends on two requirements: the technical robustness of the calculations and the consistency of the economic reasoning behind them.

Discretion and valuation risk: insights from Valuation Follies

This requirement is particularly critical in the context of litigation, restructuring or the assessment of economic damage. As demonstrated in the book Valuation Follies (Baker et al., n.d.), the practice of financial valuation is characterised by a high degree of discretion left to the expert, particularly in the choice of methods, comparables and key valuation parameters (terminal growth rate, risk premiums, market multiples).

The authors show that this discretion can lead to significant valuation differences between experts, while remaining formally compatible with accepted methodological standards. This

"discretion bias" is one of the main reputational and legal risks for valuation firms, particularly when analyses are produced in a contradictory context.

In this context, the purpose of the deliverable is no longer simply to present a value, but to objectify the assumptions used. Each parameter must be documented, justified and put into perspective with empirical data, whether internal or external. The deliverable thus becomes technical evidence, rather than a simple expert opinion.

This approach is consistent with work on reflective professional scepticism, which emphasises that the credibility of expertise depends on the ability to explain reasoning, test alternative assumptions and demonstrate that the choices made are neither arbitrary nor opportunistic (Rochford et al., 2025).

Stakeholder interaction: balancing pedagogy and analytical rigour

Presentation materials (mainly Word reports and PowerPoint presentations) play a central role in the interface between the analyst and stakeholders. They must enable interlocutors with varying levels of financial expertise to understand the mechanisms of value creation, the methodological choices made and the economic implications of the results obtained.

This interaction requires a delicate balance between pedagogy and rigour. Analysts must simplify complex concepts (WACC, normative EBITDA, free cash flow) without distorting their technical substance. The deliverable must also maintain a strong narrative consistency: the figures must tell an intelligible economic story, linking the company's historical performance to modelled future trajectories. Any dissonance between the qualitative narrative and the quantitative mechanics immediately undermines the credibility of the analysis.

From this perspective, the deliverable can be interpreted as a static "snapshot" of a financial situation at a given moment in time. However, as highlighted in the Accounting and Financial Interoperability summary, stakeholder expectations are shifting towards a more dynamic interpretation, akin to an analytical "film" that integrates trajectories, scenarios and weak signals rather than a simple snapshot.

Traceability limits and knowledge codification barrier

Once the report has been submitted, the logic behind the assumptions and methodological trade-offs remains attached to the Excel file for the assignment. In practice, this makes it costly and highly dependent on individuals to compare files and reuse analytical building blocks such as normative working capital requirements, EBITDA restatements, WACC parameters or the treatment of non-recurring items. Beyond the intrinsic quality of the reports, the difficulty therefore lies in their cross-departmental reusability.

1.4 Logic and architecture of the internal financial valuation matrix

1.4.1 General presentation and objectives of the Excel-based matrix

The central tool used by Caelius Partners in valuation and transaction services assignments is a proprietary financial modelling matrix developed in Microsoft Excel. Unlike specialised

"black box" software solutions, this matrix was designed as an open analytical infrastructure that is fully configurable and adaptable to the diverse situations encountered by the firm: business valuations, financial restructuring, insolvency proceedings, litigation and long-term financing operations.

Conceptually, this matrix is not simply a calculation tool, but an internal modelling device that structures financial reasoning. It ensures continuity between raw accounting data, economic diagnosis, prospective modelling and valuation synthesis. In a systems engineering approach applied to finance, it can be analysed as an integrated analytical pipeline, in which each intermediate transformation determines the validity of the final output.

The matrix consists of approximately twenty-five interconnected tabs, organised in a logical sequence corresponding to the different stages of the valuation process. This architecture ensures that any changes to assumptions or operational data are automatically propagated to all downstream modules, thus ensuring the overall consistency of the projections and values obtained.

The matrix serves two main objectives. On the one hand, it aims to standardise the analytical process by providing a common framework for interpreting and modelling financial situations. On the other hand, it seeks to preserve the flexibility necessary for handling non-standardised cases, in which professional judgement remains central. This balance between methodological standardisation and analytical flexibility is a structuring principle of the matrix, designed to accommodate the diversity of situations handled by the firm.

1.4.2 Integration of accounting data and construction of the analytical base

The first functional stage of the matrix corresponds to the integration and standardisation of accounting data. This phase relies on a central accounting mapping tab. Its function is to translate legal accounting into an economic interpretation oriented toward value creation.

The source data comes mainly from Pennylane or, failing that, from the Accounting Entries Files (FEC). It is integrated over several historical financial years, generally three closed financial years supplemented by the current financial year, in order to constitute a sufficiently representative basis for analysis.

Accounting mapping consists of reclassifying each account in the General Accounting Plan according to its economic nature: components of turnover, operating expenses, non-recurring items, working capital requirements, financial assets and liabilities. This step is crucial, as it determines all subsequent analyses. As highlighted in studies on financial transparency and data governance, the quality of the diagnosis depends directly on the ability to go beyond the tax logic to provide an accurate economic picture of the business.

Although the matrix provides a structured framework for reclassification, this phase relies heavily on the analyst's professional judgement. Identifying non-recurring items, distinguishing between operating and exceptional expenses, and treating certain provisions require professional scepticism and reflexivity, as described in the literature on auditing and financial

expertise (Rochford et al., 2025). This highlights the central role of professional judgement in the initial structuring of data, particularly during reclassification and restatement operations.

1.4.3 Reading and interpretation of historical financial information

Based on the standardised accounting database, the matrix automatically feeds the modules dedicated to historical analysis. The objective of this section is to define an economic baseline, which serves as a reference for all subsequent projections.

The analysis generally covers a three- to five-year period and is structured around several complementary dimensions:

- identification of normative EBITDA by restating non-recurring items;
- analysis of the cost structure and margin dynamics;
- the study of historical working capital requirements;
- reconstruction of free cash flows.

This phase marks the transition from accounting automation to analytics, in the sense that data is queried, compared and interpreted to extract economic patterns. Financial ratios, multi-year trends and comparative analyses are produced automatically from the initial mapping, ensuring methodological consistency across assignments.

The historical information thus produced provides a structured reading of the economic behaviour observed over the period analysed. It reflects economic behaviour observed through normative margins, capital intensity and WCR dynamics, which could in theory feed into cross-functional internal benchmarks. In practice, this information remains largely confined to the file under analysis.

1.4.4 Business plan modelling and short-term projections

The operational core of the matrix lies in the short-term forecasting module. This is based on a detailed business plan, generally covering a 24 months period with monthly granularity. This level of detail captures seasonal effects, operational disruptions and cash-flow pressures. These elements are particularly critical in restructuring or insolvency contexts.

The module's architecture is based on an explicit separation between profitability and liquidity. The business plan models operations (revenue by activity, variable and fixed costs, payroll, taxation), while a separate tab is dedicated to cash flow, incorporating payment terms, VAT flows, investments, loan repayments and external financing.

This separation allows for a detailed analysis of the differences between economic results and cash flow and enables specific requirements for preventive and judicial procedures to be met. Directive (EU) 2019/1023 emphasises that the viability of a continuation plan depends on the ability to demonstrate short-term financial sustainability, regardless of accounting profitability. The work of France Stratégie (2020) confirms that the effectiveness of safeguard procedures depends directly on the quality of the cash-flow projections produced. Indeed, liquidity

modelling was often the most scrutinised component in court-driven restructurings during the internship.

Monthly data is then aggregated into an annual forecast summary module. This module presents an analytical income statement, a cash-flow statement, an economic balance sheet and a net debt analysis.

1.4.5 Long-term projections and hypothesis management

For valuation purposes, the matrix extends the projections over a five- to seven-year horizon. Unlike the short term, this phase is based on aggregate assumptions, grouped together in a tab dedicated to the management of long-term parameters.

Key variables include the infinite growth rate, the terminal normative margin, normative working capital requirements and tax parameters. This centralisation of assumptions aims to ensure methodological consistency between the finely modelled short term and the more synthetically understood long term.

Yet this step is one of the most sensitive points in the analytical process. In the absence of formalised internal benchmarks, analysts must rely mainly on external sources (sector studies, market databases), which are sometimes ill-suited to the specific characteristics of SMEs. This increases the risk of methodological discretion, identified by (Baker et al., n.d.)[1] as a major source of valuation divergence, and automatically increases the sensitivity of the results to the assumptions used, particularly in the long-term projection phases.

1.4.6 Valuation module and financial synthesis

The final section of the matrix is devoted to financial valuation and the synthesis of results. This is where modelling becomes judgement. It relies on standard corporate finance methods, consistent with academic and professional practice.

Three main approaches are systematically integrated:

- the intrinsic approach using discounted cash flow (DCF);
- the analogue approach using stock market and transaction comparables;
- the asset-based approach using net assets revalued (NAR).

The module integrates the parameters required to compute the weighted average cost of capital (WACC): risk-free rate, risk premiums, operational beta and target capital structure. The results are presented in the form of value ranges, accompanied by cross-sensitivity analyses to assess the impact of changes in key assumptions.

This approach aims to provide stakeholders not with a single figure, but with a risk map, reinforcing the robustness and defensibility of the conclusions. Compared to tools developed by major international firms, the Caelius Partners matrix is part of a methodological industrialisation process adapted to a medium-sized firm.

[1] 42

1.4.7 Scope limitations and excluded modules

The architecture of the internal financial matrix is a robust, consistent and fully operational tool. It ensures continuity between the integration of accounting data, its economic restatement, forward modelling and valuation synthesis. The limitations identified are therefore not technical flaws, but structural boundaries inherent in its design and use.

The first limitation relates to the model's dependence on initial accounting mapping choices. The mapping tab translates legal accounting into an economic interpretation focused on value creation. This step determines all subsequent analyses. However, despite the structured framework provided by the matrix, it necessarily relies on the professional judgement of the analyst: identification of non-recurring items, normalisation of expenses, treatment of provisions or reclassification of certain entries. Two cases with similar economic characteristics may therefore lead to slightly different analytical bases depending on the trade-offs made. The model then remains perfectly consistent in its calculations, but it inherits this initial subjectivity, which indirectly influences the projection assumptions and, ultimately, the valuation obtained.

The second limitation concerns the deliberately universal nature of the matrix. Designed to be applicable to companies of various sizes, sectors and situations, it favours maximum flexibility. Each assignment gives rise to the creation of a separate file, structured according to the same architecture, but fed by assumptions specific to the case in question. This organisation is effective in responding to complex and non-standardised issues. However, it limits analytical consistency at the departmental level: the normative margins observed, working capital requirements and valuation parameters used are not systematically extracted into a common reference framework. The matrix thus functions as an effective infrastructure at the project level, but with little cumulative effect over time.

A third limitation lies in the methodological transition between short-term modelling and long-term projections. The business plan is based on detailed monthly granularity, allowing for a detailed analysis of operational dynamics and cash flow pressures. On the other hand, the terminal valuation is based on aggregated assumptions that are more stationary in nature:

- infinite growth rates,
- normative margin,
- target financial structure.

Moving from a detailed bottom-up model to a synthetic terminal representation introduces a potential disconnect between observed dynamics and terminal assumptions. This discontinuity does not invalidate the method, but it increases the sensitivity of the results to the choice of assumptions and reinforces the analyst's analytical responsibility in justifying these parameters.

Finally, auditability depends heavily on the quality of the documentation left in the assignment file, which determines how it can be taken over and cross-checked. A comprehensive understanding of the economic logic requires a detailed understanding of the model, including:

- the relationship between assumptions,
- intermediate modules,
- final results.

The lack of systematic documentation of methodological trade-offs can make it more complex to take over a case or make structured comparisons between assignments.

These limitations do not undermine the operational relevance of the matrix. However, they do reveal a gap between the increasing sophistication of the modelling tools used and the weak cross-functional structuring of the assumptions and reasoning produced during assignments.

The matrix thus constitutes a powerful analytical infrastructure, designed to effectively resolve specific issues, but whose architecture does not natively integrate formalised mechanisms for cumulative capitalisation. The matrix is therefore highly effective at the project level. It is far less effective as an organisational memory.

This observation leads directly to the issue developed in the rest of the thesis: it is not a question of replacing the existing tool, but of examining the conditions under which its use could evolve towards a more structured, traceable and cumulative approach, compatible with the growing requirements for methodological robustness and consistency between cases.

Chapter 2 details these points of friction and their effects on the robustness, traceability and comparability of valuations.

DIGITALISED ACCOUNTING FLOWS

- Pennylane / FEC
- Cloud-based, continuous accounting
- Standardised, reliable, traceable data

(Automation layer – no analytical intelligence)

ANALYTICAL STRUCTURING & ECONOMIC TRANSLATION

- Accounting mapping (PCG → economic view)
- EBITDA normalisation
- BFR reconstruction
- Identification of non-recurring items

Analyst judgement & professional scepticism

[Analytical Proposition 1 – Structuring role of assumptions]

ANALYTICAL PRODUCTION – EXCEL MODELLING MATRIX

- Accounting mapping (PCG → economic view)
- Historical analysis (3–5 years)
- Short-term business plan (monthly, 24 months)
- Cash flow and liquidity modelling
- Long-term projections (5–7 years)
- Valuation modules (DCF, comparable, NAR)

High flexibility – High analytical power (One mission = one Excel file)

STRUCTURAL BREAK IDENTIFIED ("GREY BOX")

- Fragmented models
- No cross-comparison
- Hypotheses trapped in individual files
- Auditability dependent on analyst

Discretion bias & weak analytical persistence

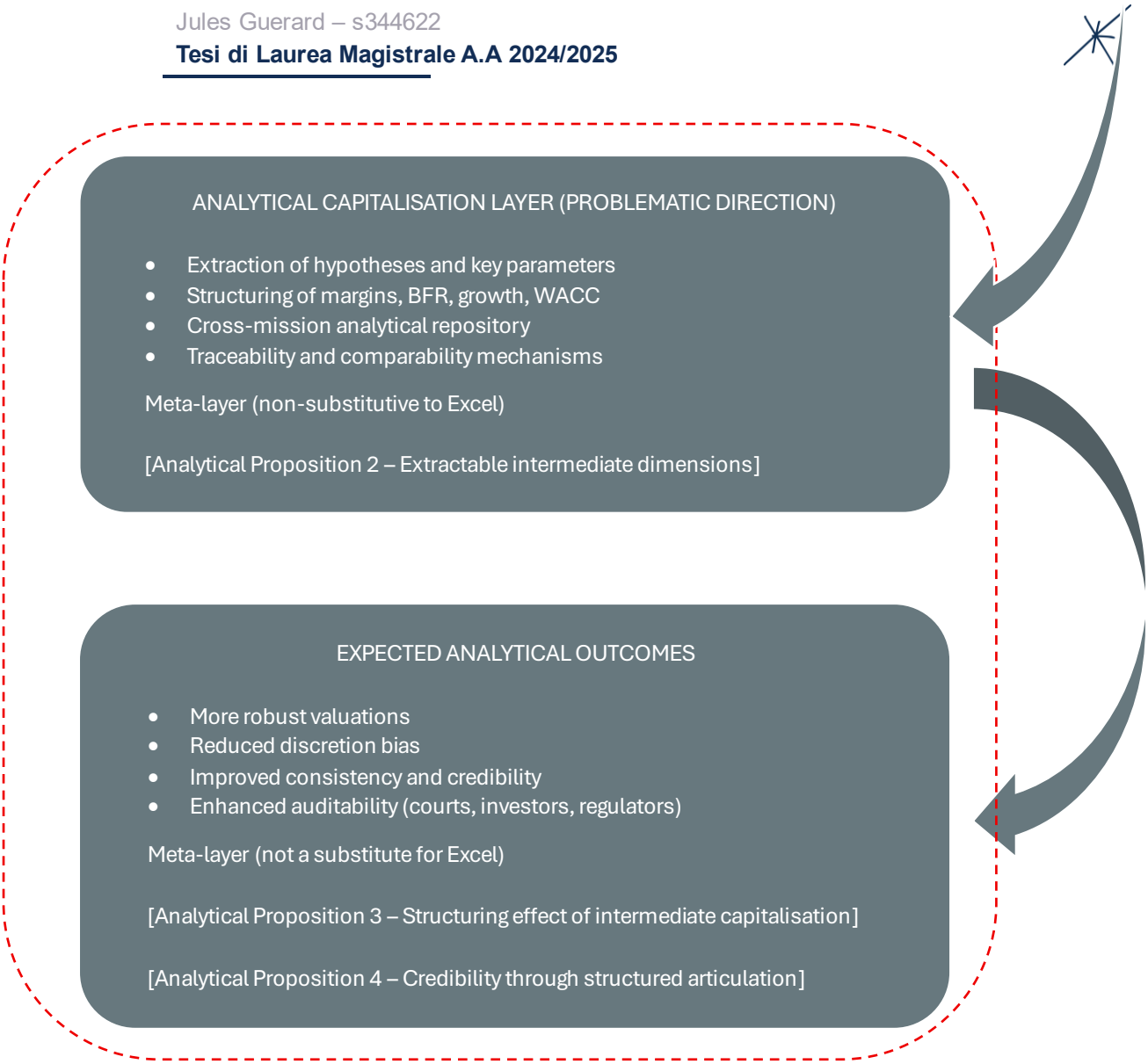

Figure 4 – Observed analytical tensions and structuring gaps in valuation practice

This figure summarises the analytical configuration observed during the internship and outlines the operational tension addressed in this thesis. It highlights the gap between the digitalisation of accounting data flows and the limited capacity of existing analytical practices to ensure persistence, comparability and governance of valuation-related assumptions across assignments.

The elements displayed in dark grey represent empirically observed practices and structural limitations within the firm. They reflect the current organisation of data flows, modelling processes and analytical production.

The elements shown in lighter colour do not constitute a theoretical research programme nor a fully implemented solution. They represent structuring directions identified during the internship in response to the observed limitations, particularly regarding hypothesis traceability, cross-mission comparability and analytical capitalisation.

At this stage, these directions are introduced to frame the scope of the professional issue examined in this thesis. Their analytical foundations and operational implications are developed through the examination of valuation assignments and organisational mechanisms in the following chapters.

2 Identification of Analytical and Methodological Criticalities

This chapter provides a diagnostic analysis of the valuation and business modelling practices observed during the internship. It highlights the recurring methodological and organisational frictions that affect traceability, consistency, and reuse of analytical work across assignments. These findings define the core issues addressed in the remainder of the thesis and motivate the need for a more structured analytical framework.

2.1 Current workflow for accounting data processing

2.1.1 Data sources, formats, and heterogeneity of accounting information

Every valuation assignment carried out at Caelius Partners begins with a phase of accessing and collecting accounting data, which directly determines the quality, traceability, and comparability of subsequent analyses. In practice, despite the spread of digital solutions, the environment remains marked by persistent heterogeneity in sources and formats: data from various software packages (Sage, Cegid, SAP), the FECs transmitted within a regulatory framework, and unstructured documents provided by clients (PDF balance trials, manually reconstructed Excel files).

Even when formats are standardised, the lack of a shared analytical framework means that each assignment must be treated as a separate information unit, which limits the comparability between files.

This initial heterogeneity can be broken down into three complementary dimensions.

- Technical heterogeneity: multiple formats, missing fields, incompatible exports.
- Semantic heterogeneity: lack of analytical rules, same accounts interpreted differently depending on the file.
- Granularity heterogeneity: variability in the level of detail of the data transmitted by clients, insufficient detail to stabilise key aggregates such as adjusted EBITDA or working capital requirements.

Until this diversity is controlled from the outset, accounting data remains difficult to use as a stable basis for standardisation and cross-functional capitalisation.

2.1.2 Import mechanisms and preliminary data standardisation

Once the data has been collected, the analytical process enters a phase of ingestion and preliminary normalisation, aimed at integrating accounting flows into the internal financial modelling matrix. This step is a critical interface between the raw data and the final analytical

object. Analysis of the workflow shows that it is currently based on insufficiently governed empirical mechanisms, generating a break in digital continuity and a data governance debt.

From an information systems perspective, this phase corresponds to a largely manual ETL (Extract, Transform, Load) process, integrated into analysts' individual workflows rather than a formalised and documented architecture. Importing is carried out via intermediate files (balances, FEC exports or cloud extractions) manually integrated into the Excel matrix. During the internship, this phase was often performed under time pressure, especially in restructuring cases where financial data had to be stabilised within days.

Operationally, this results in recurring reformatting, adjustments and reclassifications, without systematic logging of the transformations applied. The processing logic thus remains encapsulated in the assignment files, which weakens technical traceability and complicates any ex-post review.

The standardisation phase aims to neutralise accounting items that are not representative of economic performance: exceptional entries, suspense accounts, adjustments or data entry anomalies. In the absence of shared procedural standards, this standardisation is based on undocumented empirical rules, introducing process variability that is difficult to observe (Baker et al., n.d.) show that this lack of formalisation is a major source of methodological fragility in valuation work.

This situation exposes the process to a high risk of silent analytical errors. These are not accounting or arithmetic errors that can be easily detected by checking the balance trials, but rather errors of classification, scope or economic standardisation, particularly when transitional entries such as invoices not received (FNP) or invoices to be issued (FAE) are included without qualifying their economic significance. An inappropriate restatement decision made during importation can thus spread invisibly throughout the model, successively affecting intermediate aggregates, cash flow projections and, ultimately, valuation conclusions.

Strategically, this accumulation of undocumented reprocessing complicates comparisons between assignments and increases the cost of reopening a file. The more implicit the processing remains, the more time-consuming and uncertain it becomes to reconstruct the reasoning behind it. Recent work on intelligent auditing and assurance emphasises that advanced analytics acts as an amplifier of the quality, or lack thereof, of the initial data when it is not governed upstream (Senturk, 2025).

The import and standardisation phase is currently the weak link in the analytical value chain. The use of a largely manual, poorly governed and non-capitalised process undermines both the reliability of the analyses produced and the firm's ability to exploit its data cumulatively. This stage is a recurring point of weakness and justifies the analysis of traceability and structuring requirements from the ingestion phase onwards.

2.2 Professional judgement and methodological subjectivity

2.2.1 Role of professional judgement in data preparation

Professional judgement is the key intangible asset used in valuation and business modelling assignments. It enables analysts to go beyond a strictly normative reading of the accounts to produce an economically relevant representation of the company's performance. However, when this judgement is applied early in the data preparation and standardisation process, without being formalised or traced, it becomes a source of methodological fragility and an obstacle to analytical capitalisation.

From a practical standpoint, analysts are led to make structural trade-offs from the earliest stages of data processing: adjusting normative EBITDA, excluding non-recurring expenses, reclassifying cash flows or normalising executive compensation. These decisions are essential, particularly in the context of SMEs, restructuring or litigation, where statutory accounting does not fully reflect economic reality.

Academic literature emphasises the structured nature of these trade-offs. (Rochford et al., 2025) define professional scepticism as a reflective process based on the systematic critical analysis of information and the reasoned questioning of apparent assumptions. Professional judgement thus constitutes analytical added value when it is explicable, justifiable and communicable. However, in the current workflow, this reflective dimension remains largely implicit. Trade-offs are integrated directly into preparatory processing without being systematically documented in the form of rules or analytical metadata. This makes it difficult to reconstruct the reasoning after the fact, which undermines the traceability and defence of the analyses produced.

Work on the digital transformation of the finance function shows that automation does not reduce the role of the expert but shifts the weight of judgement to the upstream and downstream phases of the analytical process. In this context, an erroneous or inconsistent decision made during data preparation is amplified by the entire analytical system.

The absence of an explicit procedural framework leads to significant variability between analysts. (Baker et al., n.d.) describe this phenomenon as discretionary bias, resulting from the multiplication of undocumented degrees of freedom. This subjectivity limits the comparability between files and exposes analyses to challenges, particularly in contradictory contexts.

In this case, in the absence of codification, data preparation and hypothesis construction are based on an ad hoc logic whose consistency disappears once the mission is completed. The work of (Janicot et al., 2021) shows that this failure to transform tacit knowledge into formalised rules prevents the constitution of organisational cognitive capital. (Rosmala, 2024) emphasises that digitalisation only creates a sustainable competitive advantage when it is accompanied by explicit formalisation of analytical trade-offs.

The challenge is not to reduce professional judgement, but to support it with a structured analytical framework. It is a matter of transforming expert but volatile intuition into a documented, traceable and capitalisable analytical decision. This transformation is an essential condition for the transition from a craft-based approach to value creation to cumulative analytical intelligence at the firm level.

2.2.2 Dependence on manual cartography and reclassification

The transformation of statutory accounting into an economic interpretation is a fundamental step in any valuation or financial modelling assignment. This transition involves moving from an accounting ontology, structured around compliance and the restitution of the past, to an economic ontology focused on future performance, cash flow generation and risk assessment. In practice, this step corresponds to the construction or adjustment of the mapping in the matrix, with recurring trade-offs on non-recurring items, management expenses, and certain reclassifications of hybrid accounts.

In Caelius Partners' current operations, this transition is based primarily on manual mapping of general ledger accounts to analytical aggregates such as normative EBITDA, working capital requirements, or adjusted net debt. In the absence of a shared reference framework or stabilised mapping rules, this operation is reconstructed for each assignment, line by line, by the analyst.

The literature on information systems and management accounting shows that the absence of shared transformation rules between accounting logic and management logic is a major source of inefficiency and analytical errors. (Ismail et al., 2024) emphasise that analytical value depends not so much on the availability of data as on its consistent and reproducible structuring. When this structuring relies exclusively on human intervention, it becomes a systemic bottleneck.

This organisation corresponds to a strategy of personalising knowledge. While this approach offers the flexibility needed to handle complex or atypical cases, it also generates a significant interpretative overload and prevents any sustainable capitalisation of the trade-offs made.

Reclassification choices remain encapsulated in work files or in the memory of analysts. They are neither formalised nor persisted in the form of reusable analytical rules. This lack of codification prevents the firm from transforming accumulated experience into a collective analytical asset and constitutes a first obstacle to any Asset-Based Consulting approach.

2.3 Methodological consequences on analytical outputs

2.3.1 Variability of analytical outputs across similar cases: the "methodological noise" factor

A cross-sectional analysis of assignments reveals a systemic criticality: economically comparable companies give rise to significantly different analytical outputs. This variability cannot be explained by objective economic determinants, but rather by the variance in the analytical production process itself.

Discrepancies observed in key parameters (normative margins, cost structure, cash flow generation) result from an accumulation of uncalibrated methodological micro-arbitrages: heterogeneous classification of exceptional expenses, smoothing of working capital requirements according to different horizons, or variable restatement of hybrid flows. Each decision taken in isolation is economically defensible, but their combination produces an overall dispersion of results.

This situation corresponds to the phenomenon of "noise" described by (Baker et al., n.d.), as opposed to bias. The problem is not a systematic, biased error, but a random dispersion of judgements for similar cases. As long as assignments are handled in silos, this noise remains invisible: it only becomes apparent through a cross-sectional reading of the files.

From a systems process perspective, this situation reflects a lack of control over the analytical process. The system has a high level of intrinsic variance that is unmeasured and uncontrolled, which prevents any stabilisation of practices and the construction of reliable internal benchmarks.

This methodological variability undermines the overall consistency of analyses and prevents the establishment of a common analytical foundation. It constitutes a direct obstacle to the capitalisation of knowledge and the systemic credibility of the work produced by the firm.

2.3.2 Implications for consistency, traceability, and auditability

The most critical consequence of this analytical organisation is the break in the chain of traceability between the source data and the financial conclusion. In contexts with high evidentiary constraints (litigation, collective proceedings, transactions), this break transforms financial models into analytical black boxes, whose validity relies mainly on the individual credibility of the expert.

In the current architecture, traceability depends largely on the internal structure of Excel files and the personal discipline of analysts. Tracing a critical assumption back to the source accounting entry often involves complex navigation through intermediate sheets and undocumented reprocessing.

This opacity becomes particularly problematic when confronted with third-party experts. As shown by (Baker et al., n.d.), valuation reports are rarely challenged on the theoretical methods used, but on the multiplicity of undocumented degrees of discretionary freedom. Each untraceable trade-off constitutes an exploitable flaw in a contradictory debate.

Contrary to popular belief, the digitisation of tools does not automatically improve auditability. (Modni & Kabbouri Mounime, 2024) show that the integration of advanced technologies without explicit governance tends to amplify areas of opacity. The accumulation of digital tools and manual reprocessing thus creates a paradox of digital opacity.

In conclusion, the lack of consistency, traceability and auditability is not a marginal weakness, but a methodological, legal and reputational risk that can be significant. It fully justifies the

need for a structured analytical framework capable of embedding professional judgement within a systemic architecture that guarantees the robustness, defensibility and analytical sovereignty of the work produced.

2.4 Organisational and strategic implications

2.4.1 Case-by-case modelling and absence of analytical memory

Valuation and business modelling activities are based on a case-by-case approach: each assignment gives rise to the construction of a specific model, tailored to a unique client issue. This approach is consistent with the nature of corporate finance consulting, which is characterised by the diversity of economic, legal and transactional contexts encountered, as well as the need to integrate the specific constraints of each case.

However, when analysed from an organisational perspective and in light of the work produced by the Knowledge-Based View, this individualised production approach reveals a major structural limitation. In the absence of an explicitly capitalisable analytical framework, the financial models produced remain isolated artefacts, whose cognitive content is entirely consumed within the scope of the assignment in question. Once the assignment is complete, the reasoning used does not remain in a form that can be exploited by the organisation as a whole, preventing any transformation of the accumulated experience into a collective, transferable and recombinable analytical asset.

In very concrete terms, this lack of capitalisation concerns analytical content with high decision-making value, which is regularly used in assignments but rarely formalised at the organisational level. These include the normative assumptions used to construct business plans, the accounting restatement rules applied to historical financial statements, the risk adjustments incorporated into discount rates or scenarios, and the recurring methodological trade-offs between different valuation approaches or financial parameters. Although these elements are central to the firm's economic reasoning and added value, they remain encapsulated in one-off deliverables or in the memory of analysts, without any abstraction or structuring that would allow them to be reused across the board.

From a practical standpoint, this organisation makes cross-file comparisons costly and unsystematic. Economically similar companies may thus give rise to significantly different assumptions, without an internal framework to objectively assess the differences. Experience accumulates at the individual level but is difficult to consolidate at the collective level.

In the absence of a structured analytical memory, economically comparable companies may give rise to significantly different normative assumptions, without these differences being clearly attributable to objective economic differences. The analyses produced then become difficult to contextualise by reference to an objectified internal history, forcing analysts to rely mainly on their personal experience or external benchmarks to justify their assumptions.

In knowledge-intensive professional services firms, this situation is a classic but fundamental limitation. Work on knowledge codification shows that, without explicit organisational

mechanisms, the knowledge produced through contact with clients remains fragmented, tacit and difficult to transfer. The organisation accumulates individual experiences and successive deliverables, without managing to transform them into cross-functional analytical resources that can be used to inform future assignments. This results in a persistent disconnect between the accumulation of experience and the accumulation of knowledge.

The case-by-case model remains necessary for mission flexibility. However, it makes it more difficult to gradually stabilise practices and build a common analytical memory. This observation justifies the objective of the thesis: to structure a minimum level of capitalisation compatible with the non-standardised nature of the missions.

2.4.2 Dependence on external benchmarks

The fragility of the valuation parameters analysed above is reinforced by a structural dependence on external analytical benchmarks. In the absence of internal cross-functional benchmarks based on the firm's accumulated experience, the key assumptions of financial modelling are mainly rooted in market databases or sector studies produced by third parties. While these benchmarks are widely recognised professional standards, their systematic use reveals a major strategic limitation for a consulting firm operating mainly in the SME and special situations segment.

The financial databases used in practice, such as those offered by Infront, Capital IQ or Bloomberg, are mainly built from listed companies, large transactions or liquid markets. However, financial literature highlights that the economic and financial characteristics of large caps differ structurally from those of unlisted companies, particularly in terms of governance, risk diversification, access to financing and reporting quality. The use of these benchmarks as anchors for the valuation of private companies thus introduces a methodological bias, often referred to as "large cap bias", which limits the economic relevance of the assumptions used.

This mismatch is particularly noticeable for the most fundamental valuation parameters, such as normative margins, transaction multiples and cost of capital components. When these parameters are derived from comparables that are far removed from the operational reality of the companies being analysed, their justification is based more on compliance with market practices than on empirical relevance to the situations handled by the firm. This results in a tension between the need to refer to recognised standards and the requirement for detailed contextualisation of assumptions, which is essential to the credibility of the analyses.

The practices of large international firms illustrate the strategic dimension of this issue. The systems developed by the Big Four are based on the institutionalisation of proprietary databases incorporating private transactions, internal sector parameters and capital structures observed over a long history of assignments. These analytical infrastructures do not merely provide statistical averages, but constitute genuine evidence architectures, enabling each hypothesis used to be linked to a documented and traceable empirical corpus. The expert no longer defends an isolated hypothesis but draws on objectified collective experience.

Conversely, the absence of internal benchmarks at Caelius Partners places the firm in a position of methodological dependence on external benchmarks. This dependence does not imply technical inadequacy, but rather a loss of the ability to produce an endogenous justification for valuation assumptions. Analyses thus remain exposed to inter-file variability, since assignments involving economically comparable companies may rely on different market proxies, without an internal framework to stabilise their interpretation.

This situation can be analysed as a loss of methodological sovereignty. However, the organisation has a wealth of information at its disposal, derived from repeated assignments, the sectoral diversity of the files handled and the historical depth of the CPA Audit group in the SME segment. However, in the absence of a transversal analytical structure, this wealth of information cannot be mobilised as a source of internal legitimisation of assumptions. The firm is thus led to import exogenous reference frameworks, sometimes far removed from its actual field of intervention, to compensate for the lack of internal benchmarks.

Work on data valuation emphasises that data only becomes a strategic asset when it is integrated into analytical and decision-making routines. Otherwise, it remains an under-exploited stock of information, incapable of producing a sustainable competitive advantage. In this case, dependence on external benchmarks is not only an operational constraint, but also a symptom of an analytical architecture that does not allow past experience to be transformed into usable empirical evidence.

Thus, the loss of methodological sovereignty observed is not the result of a lack of access to information, but of an inability to discipline and supplement external benchmarks with internal analytical intelligence based on the firm's actual experience. This dependence reinforces the fragility of valuation parameters, limits consistency between cases and weakens the defensibility of analyses in the face of demanding third parties. It constitutes a major strategic challenge for a corporate finance advisory firm operating in a competitive environment where methodological credibility increasingly relies on the ability to produce endogenous empirical evidence.

2.4.3 Strategic exposure for an advisory group

The methodological and organisational weaknesses analysed in the previous sections are not simply technical limitations confined to valuation work in isolation. They expose the firm, as a consulting organisation integrated within a group, to broader strategic risks that affect its institutional credibility, its ability to differentiate itself and its potential for upselling.

Firstly, the lack of cross-functional analytical structuring limits the firm's ability to standardise the quality of the analyses produced across the group. In a multi-firm context, the value of a consulting group depends in part on its ability to offer a consistent level of methodological rigour and defensibility, regardless of the teams or individuals involved. When valuation assumptions and analytical parameters remain heavily dependent on individual practices, the organisation struggles to ensure the overall consistency of its deliverables, which weakens its institutional positioning vis-à-vis demanding clients or counterparties.

Secondly, this situation limits the group's ability to transform its cumulative experience into a strategic lever. The CPA Audit group has an exceptional volume of analytical data from recurring assignments, covering a wide range of sectors and a broad spectrum of economic situations. In the absence of mechanisms to aggregate, compare and structure this information, this wealth of information does not translate into usable collective intelligence. The organisation thus remains confined to an ad hoc analytical production approach, without benefiting from the learning and progressive specialisation effects expected of a group of this size.

This organisational fragility also affects the firm's ability to adopt a proactive advisory stance. In the financial professions, the evolution towards a strategic partner role relies on the ability to detect patterns, weak signals or significant deviations from a cross-sectional analysis of available data. When the information gathered from assignments remains scattered and incomparable, the organisation cannot anticipate client needs or structure recommendations based on a cumulative reading of the situations observed. Consulting therefore remains essentially reactive, focused on responding to ad hoc requests.

Finally, these limitations expose the firm to a competitive disadvantage compared to players who have institutionalised analytical capitalisation as a central component of their value proposition. The ability to produce internal empirical evidence, based on a documented history of comparable assignments, is a key factor in credibility in transactional, litigation or restructuring contexts. Otherwise, arguments rely mainly on external references or the individual authority of the expert, which reduces the perceived robustness of the analyses.

Thus, the limitations identified are not solely a methodological issue, but also a strategic exposure for a corporate finance advisory group. As long as the analytical experience accumulated cannot be structured and mobilised as a collective resource, the group deprives itself of an essential lever of credibility, differentiation and sustainable value creation. This observation logically concludes section 2.4 and establishes the need to formalise, in the following section, an improvement objective aimed at transforming the current valuation practice into a structured internal analytical lever.

2.5 Synthesis and formalisation of the research problem

2.5.1 Synthesis of identified criticalities

The analysis developed throughout Chapter 2 highlights a set of structural limitations affecting current valuation and business modelling practices within Caelius Partners. These limitations are not the result of a lack of technical expertise or inadequate valuation methods, which remain broadly in line with professional standards. Rather, they reflect the existence of systemic friction in the way accounting data is transformed, interpreted and stored during the analytical process.

Firstly, the diagnosis reveals a break in continuity between the production of accounting data and decision-oriented financial analysis. While accounting systems have benefited greatly

from digitisation and standardisation, the downstream stages of analytical processing still rely on manual operations, ad hoc restatements and practices that are highly dependent on individuals. This discontinuity weakens the flow of information between compliance accounting and the economic variables needed for decision-making, while limiting the reproducibility and industrialisation of analyses.

Secondly, the valuation process appears to be highly dependent on professional judgement exercised in the upstream phases of data preparation and standardisation. This judgement is an essential lever for providing a relevant economic interpretation of financial statements. However, when expressed through implicit rules, undocumented assumptions or poorly formalised methodological trade-offs, it becomes difficult to trace and contestable from an analytical standpoint. This methodological opacity undermines the defensibility of the work produced, particularly in contexts requiring strong evidentiary robustness.

Thirdly, the analyses conducted highlight significant variability in analytical outputs between economically comparable cases. This dispersion cannot be explained by underlying structural differences, but rather by the absence of stabilised analytical frameworks, shared reclassification rules and explicit mechanisms for governing the analytical process. The result is methodological noise that weakens inter-file comparability and complicates any attempt at internal benchmarking or cross-sectional assessment of valuation consistency.

These methodological weaknesses are amplified by organisational constraints affecting the capitalisation and retention of analytical knowledge. The dominant logic of case-by-case modelling leads to each financial model being considered as a strictly mission-specific object, without any structured mechanism for extracting, formalising or reusing the lessons learned. Elements of high analytical value therefore remain encapsulated in isolated files or in the individual memory of analysts, preventing the emergence of a collective analytical memory at the organisational level.

Taken together, these findings converge on a common problem: the absence of a structured analytical architecture capable of ensuring continuity, traceability and cumulative learning in valuation practices. The limitations identified in Chapter 2 are therefore not isolated weaknesses, but interdependent manifestations of a broader organisational issue relating to the governance of financial analysis. Based on this diagnosis, it becomes necessary to precisely structure the problem being addressed and the areas for improvement envisaged.

2.5.2 Formalisation of the problem, research questions and hypotheses

The findings set out in Chapter 2 highlight a key tension: valuation assignments produce economically consistent analyses at the level of each individual case, but they do not automatically fit into a cumulative logic at the level of the firm.

The financial models constructed on a mission-by-mission basis involve restatements, structural assumptions and critical trade-offs that directly condition the results obtained. However, these elements remain largely encapsulated in the files specific to each mission.

They are documented to meet an external requirement for defensibility are rarely extracted in a format that allows for inter-file comparison or progressive capitalisation.

This situation does not reflect a methodological weakness. It reveals an organisational limitation: the absence of a formalised analytical architecture that would enable the articulation of professional judgement, the transformation of accounting data and the collective memory of the reasoning used.

Operational issue

In this context, the operational problem can be formulated as follows:

How can valuation practices developed on a case-by-case basis be structured in order to improve traceability, consistency between files and cumulative capitalisation, without stifling the professional judgement that is essential in complex contexts (restructuring, litigation, transactions)?

The challenge is not to standardise numerical conclusions or to replace expert reasoning with an automated approach. Rather, it is to examine the extent to which certain analytical dimensions can be formalised, made comparable and partially capitalised to strengthen the collective robustness of the work.

Based on this issue, four questions structure the analysis developed in the following chapters:

- Construction of assumptions: How are the structuring assumptions of valuation models (growth, normative profitability, working capital behaviour, risk parameters) constructed in practice, and what limitations does this pose in terms of traceability and reproducibility?
- Extractability of analytical dimensions: Which components of the models can be isolated and compared between cases without compromising the uniqueness of the conclusions specific to each assignment?
- Effects of analytical capitalisation: To what extent does the cumulative structuring of certain recurring analytical building blocks reduce unjustified variability in processing and strengthen inter-analyst consistency?
- Link between detection and expertise: How can the upstream identification of significant accounting configurations within the client portfolio be linked to the downstream formalisation of the reasoning used in the assignment?

These questions are not subject to statistical validation. They organise the analysis of the actual functioning of the practices observed during the internship.

Analytical assumptions

The following hypotheses serve as a framework for analysis in Chapters 3 and 4.

- H1 – Centrality and fragility of assumptions: Valuation results depend mainly on the construction and articulation of structuring assumptions rather than on the formal choice of method. When these assumptions are based on poorly formalised trade-offs, the

traceability and defensibility of the results are weakened, particularly in contexts exposed to contradiction.

- H2 – Existence of extractable analytical dimensions: Despite the uniqueness of each assignment, there is a core set of relatively stable analytical dimensions (restated aggregates, standardisation logic, classification of cash and quasi-debt, critical dependency profiles) that can be extracted and compared without calling into question the specific nature of the conclusions.
- H3 – Structuring effect of intermediate capitalisation: Capitalising on intermediate analytical building blocks rather than final values is likely to reduce unjustified variability in treatment, facilitate inter-file comparison and strengthen consistency in practices, while preserving flexibility in professional judgement.
- H4 – Strengthening credibility through cumulative structuring: The implementation of an analytical infrastructure that links upstream detection and downstream formalisation helps to strengthen the credibility of the expert reports produced, not through automation, but through a more systematic explanation of critical trade-offs.

These assumptions provide a framework for interpreting the mechanisms analysed in Chapter 3 and tested in the assignments presented in Chapter 4. They make it possible to link the limitations identified in the initial diagnosis to the organisational changes undertaken within the firm.

3 Analytical Foundations of Professional Valuation Practices

3.1 From accounting representation to analytical construction

Financial valuation does not consist of applying a calculation technique to available aggregates. It is based on a preliminary operation: converting an accounting representation, developed for a normative purpose, into an economic representation geared towards prospective analysis and decision-making.

Financial statements are constructed to ensure regularity, comparability and compliance. They describe the past through established recognition and measurement rules. This logic produces formal consistency, but it does not, as such, aim to isolate sustainable performance or directly translate future cash flow generation capacity. Accounting aggregates constitute a recording language distinct from the language required for valuation.

The transition to an economic basis involves addressing three structural discrepancies:

- A scope discrepancy: financial statements aggregate heterogeneous components (operational, financing, non-recurring items) that prospective analysis must separate.
- A timing discrepancy: an accounting measurement at a given date may incorporate calendar effects and cut-off adjustments that do not prejudge the future dynamics of cash flows.

- A purpose discrepancy: whereas accounting stabilises measurement conventions, valuation must construct a coherent economic trajectory (margins, investments, WCR) compatible with a cash flow logic.

This conversion is not simply a matter of "cleaning up" the accounts: it corresponds to an explicit definition of the economic object that valuation purports to measure (normative performance, distributive capacity, cash flow trajectory, risk profile). In this sense, valuation changes the nature of the information: it replaces a standardised description of the facts with a scenario construction based on assumptions.

At this stage, professional judgement plays a constitutive role. It is exercised not only when choosing a method, but upstream, in the economic qualification of items, the identification of sustainable elements and the formulation of an interpretable trajectory. This judgement is not a residue to be eliminated: it structures the consistency of the reasoning from the outset of the model.

The methodological challenge is therefore not to reduce this element of judgement, but to incorporate it into explicit analytical criteria. In concrete terms, the expected transformation must produce a basis for projectable flows and an economically aligned reading of risk: restated performance consistent with investment and working capital assumptions, and a trajectory whose logic remains continuous between the historical period, the explicit period and the steady state. This requirement is the starting point for the framework developed in the following sections, which focuses not on the calculation methods themselves, but on the analytical conditions that make it possible to assess the consistency and robustness of a valuation.

In the context of this thesis, this transformation provides a framework for analysing the empirical situations in Chapter 4: it allows us to examine how the initial qualifications of performance and cash flows condition the robustness of the conclusions produced.

3.2 Valuation as an assumption-driven analytical construction

3.2.1 Valuation outcomes as functions of assumptions rather than methods

The differences in value observed in practice rarely stem from the choice of method as such. The main valuation frameworks, which are discounted cash flows, comparable multiples or asset-based approaches, are based on distinct formal structures, but with equivalent parameters, they tend to produce similar orders of magnitude.

The divergence appears upstream, in the definition and articulation of assumptions.

A valuation model can be analysed as a parametric function whose method constitutes the architecture, while the assumptions determine its dynamics. Variables such as growth, normative profitability, capital intensity and risk have a non-linear impact on the formation of value. Particularly, discounting and terminal capitalisation introduce an intertemporal multiplier effect: a limited variation in a key parameter can produce a significant difference in overall

value, due to the accumulation of effects over the entire projected horizon. For example, a marginal change in the infinite growth rate or discount rate simultaneously changes the terminal value and its capitalisation factor, amplifying the impact of an apparently limited adjustment on enterprise value.

Certain assumptions also play a structuring role. Projected growth determines investment requirements, target profitability influences the generation of free cash flow, and the chosen financial structure affects the level of risk incorporated in the discount rate. The value is thus the result of a hierarchical system of interdependent assumptions, rather than a simple additive combination of independent parameters.

This systemic nature explains why two valuations using the same method can diverge significantly when their assumptions differ marginally. The method organises the internal consistency of the calculation, but it does not determine the intensity of future cash flows or the risk trajectory chosen. It provides a framework for reasoning without determining its content.

Viewing valuation as a structured hypothesis-driven construct shifts the analysis from the methodological debate to the architecture of the parameters. The quality of a valuation does not depend primarily on the formal framework chosen, but on the economic and systemic consistency of the assumptions that feed into it.

3.2.2 Internal coherence and consistency in valuation modelling

In valuation assignments, the credibility of a model does not depend on the sophistication of its mechanisms, but on the internal consistency of the assumptions that structure it. A model may be formally correct and yet produce fragile results if the parameters that feed into it are not aligned with each other. The quality of the valuation therefore depends less on the framework used than on the logical integrity of the set of assumptions, projections and discount rates.

Practice shows that inconsistencies rarely appear in an obvious form. They most often emerge from subtle discrepancies between operational and financial assumptions: growth trajectories that are incompatible with projected margins, implicit cost structures that are inconsistent with the investment levels chosen, or financing assumptions that are disconnected from the underlying risk profiles. These discrepancies are not technical errors, but rather the result of an insufficiently articulated analytical framework.

Discounting is a focal point for these inconsistencies. The discount rate synthesises risk and financial structure assumptions that must be consistent with projected cash flows. The construction of the discount rate provides a concrete illustration of this requirement. The WACC results from a structured combination of interdependent parameters whose coherence conditions the overall integrity of the model.

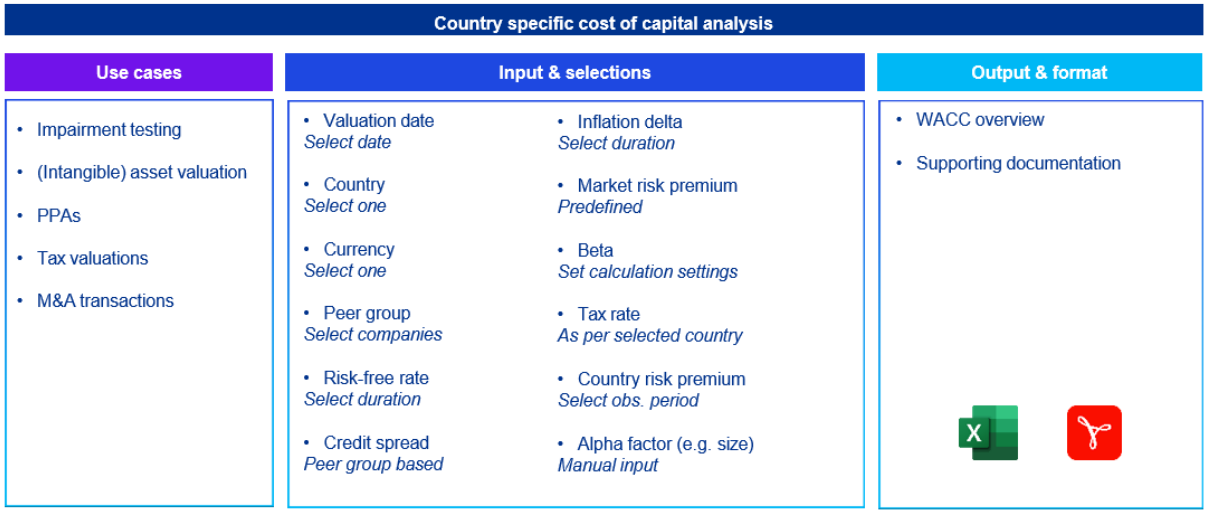

Figure 5 – Tool-supported consistency in WACC modelling

The explicit decomposition of WACC components, together with the systematic documentation and exportability of underlying parameters, enhances analytical traceability and internal coherence.

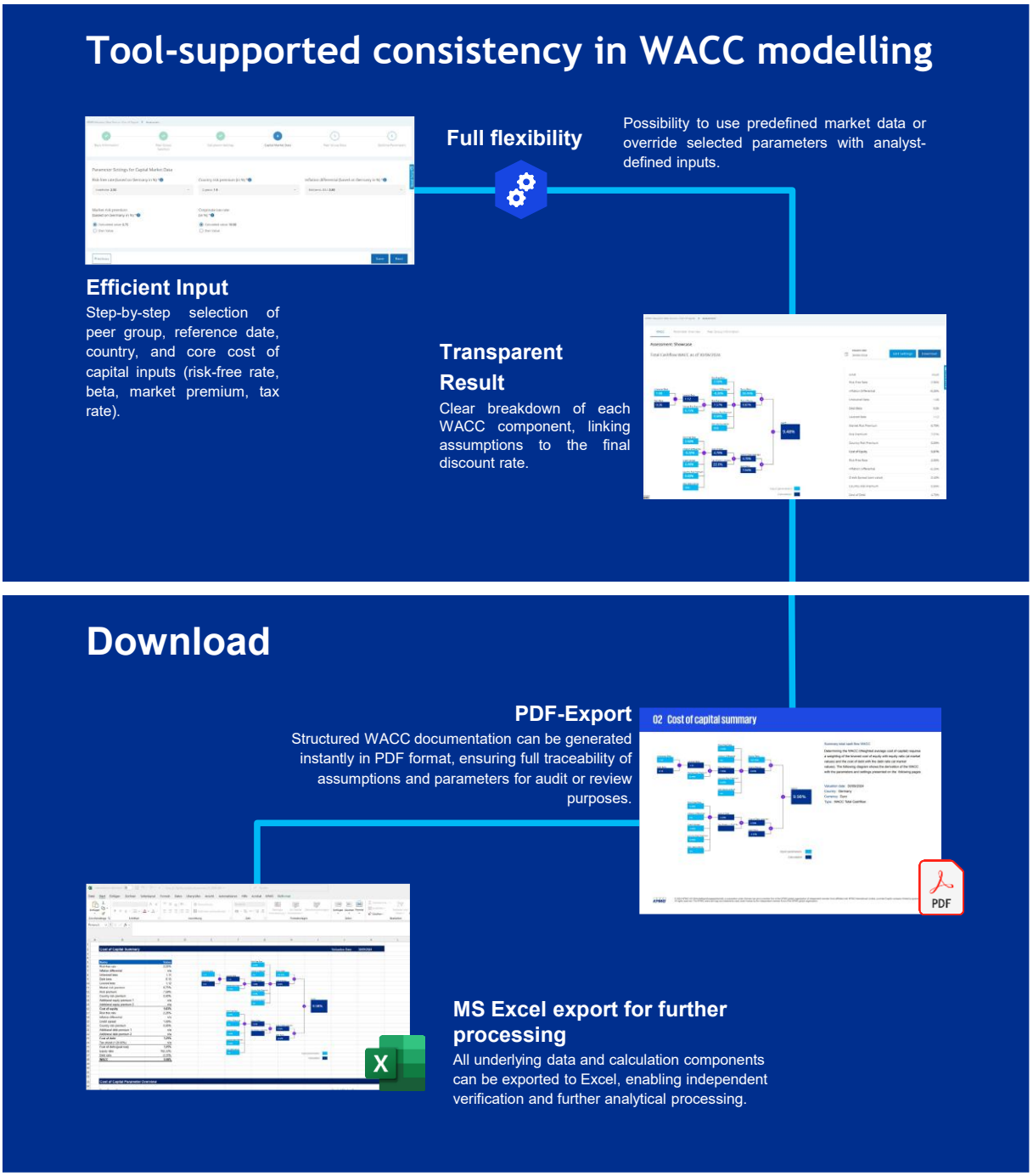

Figure 6 – Structured WACC modelling environment ensuring parameter consistency and traceability

Robustness does not derive from automation, but from the structured articulation and transparency of assumptions. In practice, the use of standard parameters or generic benchmarks can lead to situations where the risk incorporated in the rate is inconsistent with the underlying operational assumptions. The rigour of the model cannot then compensate for the lack of conceptual alignment between the different components of the reasoning.

Internal consistency also implies logical continuity between the different phases of the model. The assumptions used for the explicit period must be consistent with those underlying the terminal value, in terms of growth, normative profitability and capital intensity. In practice, an

unjustified break between these horizons often reflects an attempt to correct ex post a result deemed excessive or insufficient, to the detriment of analytical rigour.

Professional critics of valuation point out that many weaknesses do not stem from the methods themselves, but from their partially disjointed use. The assembly of coherent analytical blocks taken in isolation can produce a globally incoherent model if the assumptions are not thought of as an integrated system. This illusion of formal rigour, fuelled by the very structure of the models, is one of the main sources of fragility in the results produced.

In this context, the central challenge of modelling is not to add complexity, but to ensure the logical alignment of all assumptions. Internal consistency is not observed in an isolated parameter, but in the model's ability to describe a single, intelligible economic trajectory. In the cases studied, a consistent model is not distinguished by its technicality, but by the absence of contradictions between the analytical choices that compose it.

3.2.3 Time consistency and intertemporal reasoning

One of the most common weaknesses lies in the management of analytical time. The consistency of a valuation depends not only on the relevance of the assumptions made at a given moment, but also on how they are articulated over time. Intertemporal reasoning is therefore a central dimension of the analyst's work, often underestimated in favour of purely methodological considerations.

The explicit projection period plays a structuring role in this reasoning. It cannot be defined arbitrarily, nor according to generic conventions, but must correspond to the horizon over which the assumptions made retain their explanatory power. In practice, the length of this period reflects the degree of visibility the analyst has on the determinants of future performance. A projection that is too short transfers excessive uncertainty to the terminal value, while a projection that is too long is based on poorly substantiated assumptions, which weakens the entire valuation.

The issue of transitional phases particularly illustrates the challenges of temporal consistency. The trajectories of normalisation of profitability, financial structure or capital intensity must be thought of as gradual processes rather than instantaneous adjustments. In practice, poorly specified transitions often reflect an implicit desire to reach a target regime quickly without explaining the underlying economic mechanisms. This type of temporal break weakens the credibility of the reasoning, even when the target levels chosen appear plausible in isolation.

The terminal value is the point of convergence for these temporal trade-offs. It synthesises long-term assumptions that must extend, rather than contradict, the logic developed over the explicit period. The use of normative parameters that are disconnected from projected dynamics generally reveals intertemporal inconsistency: the trajectory described by the model then ceases to be continuous and intelligible. The practice of valuation reminds us that the terminal value is not an ex post correction, but the logical outcome of an economic scenario constructed over time.

Professional critics point out that many valuation weaknesses do not stem from isolated errors, but from insufficient coordination between the different periods of the model. Consistent assumptions taken in isolation can produce a contradictory whole if their temporal sequence is not thought of as a whole. This intertemporal inconsistency fuels an illusion of precision, masking unjustified analytical breaks under a continuous formal structure.

In this context, mastery of intertemporal reasoning is a key criterion of analytical quality. It is not a question of mechanically lengthening or shortening the projection horizons, but of constructing a coherent economic trajectory over time, where each period extends the previous one according to an explicit logic. In this framework, the absence of temporal consistency necessarily weakens the interpretation and defensibility of the results obtained, regardless of the method used.

3.3 Robustness, sensitivity and limits of apparent objectivity

3.3.1 Interpretation of sensitivity analyses in professional practice

In professional practice, sensitivity analysis is frequently used as a means of formally validating results rather than as a genuine tool for analytical exploration. Presented in the form of summary tables or graphs, it suggests risk control, when in fact it is often based on a limited set of parameter variations selected according to implicit conventions. This configuration can reinforce an impression of robustness without questioning the structural soundness of the underlying reasoning.

Sensitivity analysis does not test the model in its overall architecture. It observes the reaction of the result to local changes in parameters already integrated into a previously accepted economic representation. In practice, the variables tested often correspond to those that are technically easy to manipulate, and not necessarily those that most strongly structure the value. The scope of the test therefore determines the stability observed.

The interpretation of sensitivities also tends to favour an arithmetic reading of the differences obtained. A limited variation in the result following standardised parametric shocks can be interpreted as a sign of solidity, regardless of the economic consistency of the scenarios considered. The test then becomes confirmatory: it validates an already established framework rather than examining its foundations.

More fundamentally, the valuation does not produce an isolated figure but a range of possible results, determined by the combination of assumptions used. When sensitivity analysis is limited to one-dimensional variations around a central scenario, it captures neither the interactions between parameters nor the regime changes that could alter the projected economic trajectory.

The analytical value of a sensitivity test thus lies less in producing a numerical range than in explaining the critical dependencies of the model. Identifying the assumptions that actually structure the result, understanding the mechanisms by which they affect flows, and assessing

the economic plausibility of the variations selected are the conditions for a rigorous interpretation.

Sensitivity analysis is therefore not a stand-alone validation tool. It reflects the way in which the analyst prioritises uncertainties and conceptualises the causal structure of the model. Used without reflection on its own limitations, it can give the result an apparent objectivity that has more to do with the test framework than with the intrinsic soundness of the reasoning.

3.3.2 Illusion of robustness and non-replicability of results

Finally, the apparent robustness of a model may be a local property rather than a structural guarantee. A stable result when faced with a set of parametric tests does not necessarily mean that the reasoning can withstand a more profound reconfiguration of the underlying assumptions.

This illusion is reinforced when models use homogeneous formal frameworks and shared conventions. The convergence of results may then reflect adherence to common assumptions rather than independent validation of the reasoning. Numerical stability becomes a consequence of the internal consistency of the adopted framework, rather than proof of its economic relevance.

Non-replicability arises when the underlying economic representation is modified rather than merely adjusting isolated parameters. Two competent analysts, with the same information and applying comparable methods, may arrive at different values if their underlying assumptions differ, even marginally. This divergence is not a technical error. It reflects the dependence of the result on a specific interpretative framework.

Many analytical weaknesses do not stem from arithmetic errors or obvious inconsistencies, but from more subtle discrepancies between risk assumptions, operational trajectories and time horizons. These tensions may remain invisible as long as the model is examined in blocks, without a comprehensive reconstruction of the reasoning.

A robust result is therefore defined not only by its numerical stability, but also by the ability to make all the trade-offs that produced it intelligible. True robustness requires an explanation of the underlying assumptions, the interdependencies between parameters and the conditions under which the model would cease to be valid.

The increasing sophistication of tools reinforces this requirement. The more parameters and analytical layers a model incorporate, the more the relationship between assumptions and final value becomes mediated. Formal precision can then mask a strong dependence on interpretative choices whose consistency is not immediately observable.

Robustness is therefore not an intrinsic property of the final figure. It depends on the transparency of the hypothetical architecture and the ability to reconstruct the analytical path that led to the result. In the absence of this explanation, numerical stability can conceal a structural fragility that only becomes apparent when the interpretative framework changes.

These findings, seen in sections 3.2 and 3.3, shed light on the discrepancies observed in practice in the missions analysed in Chapter 2.

3.4 Intangibles, uncertainty and the structural limits of full capitalisation

3.4.1 Intangible assets as a stress test for valuation methodology

Intangible assets constitute a stress test for any valuation framework. They highlight, in a particularly visible way, the inherent limitations of an approach based on stabilising assumptions and seeking internal consistency.

Unlike tangible assets or historically stabilised activities, intangible assets do not have an easily isolatable intrinsic value. Their economic contribution depends on their activation within a given organisational system. A technology, database, brand or know-how does not generate cash flow by its mere existence. It produces value to the extent that an organisation is able to integrate, exploit and articulate it within a coherent strategy. Value thus becomes relational: it emerges from an interaction between resources, structure and competitive environment.

This contextual dependence undermines the transferability of assumptions. Market comparables provide useful benchmarks, but they incorporate specific configurations of governance, operational maturity and execution capacity that are not necessarily observable or replicable. Transposing a multiple or an implied rate of return often amounts to importing an already structured economic scenario, without being able to verify its suitability for the internal value creation mechanisms of the entity under study.

The uncertainty associated with intangible assets is not solely the result of a lack of information. It is linked to the forward-looking and non-linear nature of the processes involved. The trajectories of technology diffusion, customer adoption, organisational learning and network effects do not necessarily follow regular dynamics. They can experience sudden accelerations, phases of inertia or abrupt disruptions. In this context, small variations in assumptions can produce significant differences in value, not because of a technical weakness in the model, but because the underlying economic mechanisms are themselves unstable.

Intangible assets also make the relationship between risk and future cash flows more complex. The discount rate summarises an overall assessment of risk, but it does not always capture the multiplicity of specific uncertainties: technological risk, execution risk, dependence on key skills, vulnerability to regulatory or competitive disruptions. Mechanically adjusting the rate to reflect these dimensions can lead to an approximate compensation rather than an accurate representation of the actual exposure.

In these configurations, the search for robustness through parameter stabilisation has its limits. The internal consistency of the model remains necessary, but it is not sufficient to guarantee the economic soundness of the result. The value produced becomes highly dependent on a limited number of structural assumptions, the plausibility of which is based on a qualitative assessment of the context.

Thus, intangible assets are not a marginal special case. They reveal a more general property of valuation: when value creation depends on organisational and cognitive processes that are difficult to observe, uncertainty cannot be eliminated by methodological refinement. It must be made explicit, circumscribed and assumed in the reasoning.

Intangibles then function as a revealing factor. They show that the apparent stability of a model can mask a strong dependence on contextual assumptions, and that methodological quality is not measured by the accuracy of the calculation, but by the ability to identify the points where value becomes structurally fragile.

3.4.2 Valuation as a knowledge-intensive and interpretative process

Financial valuation cannot be reduced to a calculation applied to a set of objectified data. It is an interpretative construction activity in which the formulation of the problem precedes its formal resolution.

Before even selecting a method, the analyst must define what is actually being valued. Is it stabilised historical performance, still uncertain growth potential, a strategic option, or organisational adaptability? This initial qualification determines the structure of the assumptions, the choice of time horizons and the way in which risk will be integrated. It does not follow automatically from the financial statements but it is the result of a process of prioritisation and consistency.

In this phase, the reasoning is intrinsically cognitive. The analyst compares heterogeneous information, which is often partial or ambivalent, and must identify the economic mechanisms that are truly structural. Some variables appear to be decisive, while others are secondary. This selection is never neutral: it reflects an understanding of the business model, an interpretation of the competitive environment and an assessment of specific constraints.

The method then organises this representation into a calculable system. It formalises an already constructed scenario but does not produce it. Two experienced professionals, with the same data and using similar techniques, may thus arrive at different values because they have not given the same importance to the same mechanisms. This divergence does not necessarily reflect an error. It reveals the interpretative nature of the discipline.

This dimension explains why valuation is knowledge intensive. It draws on technical knowledge, but also sector-specific knowledge, analytical frameworks accumulated through experience, and an ability to recognise recurring patterns. Some of this knowledge remains tacit: it manifests itself in the ability to quickly identify inconsistencies, detect excessive optimism in a business plan, or perceive a misalignment between stated strategy and financial structure.

Attempts to fully formalise this reasoning come up against a structural limitation. Procedures can codify the steps involved in the calculation, but they find it more difficult to capture the logic by which certain assumptions are retained and others discarded. Excessive

standardisation risks making the analysis rigid by imposing predefined patterns where adaptation to the context is precisely what makes it relevant.

This results in a methodological tension. On the one hand, the search for consistency, traceability and reproducibility requires maximum clarification of assumptions. On the other hand, the interpretative nature of valuation makes the idea of complete neutrality illusory. The quality of reasoning does not lie in the elimination of judgement, but in its discipline: the ability to explain the underlying hypotheses, test their consistency and recognise areas of irreducible uncertainty.

Understanding valuation as a knowledge-intensive activity does not therefore mean relativising its results. On the contrary, it leads to clarifying the conditions for their credibility. A value is not only the product of a model but the result of a process of selecting and articulating assumptions whose logic must be reconstructable.

This perspective also sheds light on how internal consistency and robustness should be interpreted. They do not guarantee the absolute objectivity of the result, but rather the soundness of the reasoning that leads to it. Valuation then appears less as an applied technique than as a structured exercise in judgement, the quality of which depends on explicit mastery of the cognitive mechanisms involved.

3.4.3 Structural limits of full capitalisation and scope for partial structuring

Repeated valuation assignments undeniably lead to an accumulation of experience. Analysts refine their reflexes, recognise certain configurations more quickly and identify the weak points in a line of reasoning with greater precision. However, this accumulation does not automatically translate into full capitalisation of the reasoning used.

The limitation is primarily structural. Valuation is a forward-looking and context-specific activity. Each mission involves specific legal, financial and strategic constraints, within which assumptions make sense. Extracting these assumptions from their environment in order to transform them into reusable solutions requires a stability of economic configurations that, in practice, does not fully exist. Reasoning cannot be dissociated from the context that gives it its relevance without losing coherence.

This impossibility of exhaustive capitalisation does not reflect an organisational weakness but an epistemological property of the discipline. Valuation amounts to formulating a plausible representation of an uncertain future based on incomplete information. However, economic trajectories do not repeat themselves identically. Competitive conditions evolve, financing structures change, and the behaviour of actors transforms. A hypothesis that is relevant in one configuration may become inadequate in another, without the quality of the initial reasoning being called into question.

As a result, numerical conclusions, selected scenarios and specific trade-offs remain fundamentally contextual. Aggregating them directly or transforming them into implicit norms

and standards would risk introducing a rigidity that is incompatible with the interpretative nature of valuation. The complete industrialisation of reasoning thus encounters an intrinsic boundary.

However, this limit does not exclude all forms of cumulative structuring. While the results remain situated, certain more abstract dimensions of reasoning can be stabilised. It is not a question of capitalising on values, but of structuring categories of analysis, criteria for examination and patterns of coherence that make it possible to organise accumulated experience without freezing it.

The distinction then becomes central: the singularity of the conclusions must be preserved, but the conditions of their production can be partially formalised. The methodological challenge therefore lies not in seeking total standardisation, but in identifying what, within reasoning, can be abstracted without being distorted.

This conceptual clarification paves the way for the following synthesis, which aims to determine more precisely which analytical dimensions can be structured and mobilised cumulatively without compromising the situated nature of valuation missions.

3.5 Synthesis: analytical requirements for structured valuation practices

3.5.1 Core methodological dimensions at mission level

The above developments enable us to identify the minimum requirements that determine the analytical quality of a valuation mission. The robustness of an assessment is measured neither by the apparent sophistication of the model nor by the choice of a recognised method, but by the soundness of the reasoning that organises assumptions, projections and the interpretation of results.

Four dimensions structure this foundation:

- The explicit structuring of assumptions. The parameters of growth, normative profitability, operating cycle, capital intensity and risk must be formulated as components of a coherent economic representation and not as a juxtaposition of technical variables. An assumption is analytical when it can be discussed for its economic logic, independently of the file that contains it.
- The systemic and intertemporal consistency of the model. Assumptions are not evaluated in isolation: their credibility depends on their mutual compatibility and their articulation over time. The alignment between projected flows and risk parameters, the continuity between the explicit period and the terminal value, and the compatibility between growth, margins and investments are more decisive conditions for consistency than the technical nature of the calculation.
- The identification of critical dependencies. Robustness does not lie in the mechanical stability of the result to standardised variations, but in the ability to identify the truly structuring assumptions, to understand their interactions and to explain the conditions under which the value produced would change regime.

- The reconstructibility of reasoning. The logical chain linking data, restatements, assumptions and results must be able to be reconstructed in an intelligible manner. This requirement is not intended to reduce the element of judgement, but to make explicit the architecture of the choices that underpin the economic scenario.

These dimensions are not intended to standardise numerical conclusions. They provide a framework for the quality of the reasoning that produces them and constitute the interpretative grid used in the following chapter.

3.5.2 Structural dimensions enabling detection and cumulative analytical leverage

The above discussion has established that it is structurally impossible to fully capitalise on valuation reasoning. However, certain intermediate dimensions can be extracted from the assignments, stabilised and compared without altering the uniqueness of the conclusions produced.

Relevant capitalisation does not focus on final values or selected scenarios, but on analytical objects upstream of the result.

Three categories can be distinguished.

- Restated economic aggregates. These are figures reconstructed during the transition from accounting to economic analysis: normative profitability levels, cash generation profiles, operating cycle behaviour, adjusted financial structures. These aggregates do not constitute conclusions, but bases for analysis. When defined according to explicit and consistent principles, they become comparable over time and between cases.
- The types of adjustments and trade-offs. Each assignment involves recurring decisions: exclusion of non-recurring items, restatement of remuneration, reclassification of hybrid debt, normalisation of margins or WCR. Individually, these trade-offs remain contextual. Collectively, they reveal patterns in the economic mechanisms encountered. Structuring them makes it possible to distinguish between what is truly unique and what corresponds to a frequently observed configuration.
- Risk and critical dependency profiles. Certain assumptions account for a disproportionate share of the value produced. Identifying, documenting and comparing these dependencies makes it possible to understand not only the results obtained, but also the recurring weaknesses in the reasoning used.

Structuring these dimensions has a dual effect.

At the intra-mission level, it reinforces consistency and analytical discipline. A parameter is no longer just plausible and can be situated in relation to a documented internal history. Deviations require explicit justification, which reduces unjustified variability without eliminating professional judgement.

At the cross-functional level, it enables a cumulative reading of a portfolio of files. The aggregation of standardised signals makes it possible to identify typical configurations

associated with specific economic situations, whether financial tensions, transactional dynamics or highly conflictual contexts. The aim is not to mechanically predict an event, but to focus attention on cases with structural characteristics similar to those already encountered.

This intermediate analytical infrastructure does not transform valuation into an automatic procedure. It organises the conditions for comparability and detection without making the analysis rigid. The uniqueness of each assignment remains intact, but it is part of a framework that allows us to leverage our accumulated experience.

Chapter 4 examines the practical implementation of this logic based on assignments carried out during the internship. It analyses how the structuring of these intermediate dimensions can both strengthen the robustness of the valuations produced and support a proactive capacity to identify opportunities within the group's client portfolio.

4 Application to Valuation Assignments and Professional Contributions

This chapter builds directly on the diagnostic of analytical limitations identified in Chapter 2 and on the analytical mechanisms discussed in Chapter 3, by examining how these issues materialise in concrete valuation assignments handled during the internship.

4.1 Application to selected valuation assignments handled during the internship

4.1.1 Valuation in a distress and restructuring context – Mauna Kea Technologies

The Mauna Kea Technologies case was part of a restructuring process involving the valuation of the company according to two distinct scenarios: going concern and disposal of isolated assets. The free cash flow approach did not raise any particular methodological difficulties. The DCF was based on a business plan provided by management and discounted at a weighted average cost of capital consistent with the company's risk profile.

The real difficulty lay in the need to distinguish between two different sources of value:

- the value derived from future operating cash flows;
- the specific value of the patent portfolio, a key strategic asset but one that was poorly reflected in the IFRS financial statements.

The accounts presented a limited historical value of intangible assets, even though the company had made significant investments in R&D. A purely accounting reading therefore led to an underrepresentation of the accumulated technological capital. In the context of a rescue plan, this dissociation became structural: limiting the analysis to projected operating cash flows meant ignoring an essential component of value.

The portfolio comprised more than 200 patents organised into technology families. A patent-by-patent valuation was not economically relevant. Cellvizio® technology derives its value from the coordinated exploitation of the entire portfolio, isolating each title would have led to a mechanical underestimation. The asset had to be understood as an integrated platform.

The method chosen was based on an income approach. Theoretical royalties were applied to consolidated revenue, based on a rate backed by observed contractual references., based on a rate backed by observed contractual references. The cash flows thus determined were discounted at a rate aligned with that used for the going concern valuation.

The discounting mechanism was not the sensitive point. The real challenge was calibrating the risk coefficient applied to the theoretical value obtained. This coefficient, constructed from an internal grid incorporating three dimensions (technological, economic and legal), resulted in an overall factor of around 55%.

The central question was: how to apply a specific discount to the portfolio without introducing double counting of the risk already integrated into the WACC? In practice, this point generated internal discussion before the calibration was stabilised.

The task was to verify that this coefficient accurately reflected the risk specific to patents (quality of technological coverage, multi-jurisdictional legal robustness, uncertainty about the speed of adoption) and not the business risk already captured in the WACC. Maintaining high scores across all three dimensions reflected the technological maturity of the platform, while retaining a significant discount linked to sector uncertainties.

The application of the coefficient led to the following conclusions:

- a value in a continuity scenario;
- a significantly lower value in the liquidation approach, based on discounted normative cash flows in perpetuity.

The divergence between the two scenarios was not simply a technical adjustment. It reflected the dependence of the value on the coordinated operating capacity of the portfolio.

The integration of this value into the asset-based approach profoundly changed the interpretation of the adjusted balance sheet. The line item "patents, licences and trademarks", which had historically been marginal, was adjusted to its estimated economic value. The purpose of this restatement was not to optimise the final value, but to highlight a strategic asset that was not reflected in equity.

In this case, the analytical structure did not consist of multiplying methods, but rather of coherently articulating:

- an operating cash flow approach;
- a revaluation of intangible assets;
- and the absence of double counting of risk.

The main difficulty lay in this articulation. The technology could not be dissociated from its overall operation, but neither could it be mechanically absorbed into the flows without specific analysis.

This case highlights a common limitation of interpretations based exclusively on flows: when significant technological investments have been made upstream, their economic value may exceed observable short-term performance. The challenge was therefore not to artificially increase value, but to restore its real structure.

4.1.1.1 Valuation purpose and decision context

In this restructuring context, value was used as a tool for comparing scenarios rather than as a standalone estimate. It was intended to enable a decision to be made between continuity and disruption on the basis of explicitly distinguished assumptions.

The analytical challenge lay less in the choice of method than in the consistency of the economic scope chosen for each trajectory.

4.1.1.2 Critical assumptions and sensitivity points

The critical parameters focused on three areas:

- the credibility of operational continuity and its stabilisation horizon;
- the royalty rate and, above all, the calibration of the risk coefficient applied to the portfolio;
- assumptions for implementation in a break-up scenario (transferable scope, deadlines, discounts).

Small variations in these parameters produced significant differences between scenarios. The explicit identification of these areas of sensitivity was therefore crucial in order to avoid implicit deviations from the trajectory.

4.1.1.3 Structuring decisions and analytical trade-offs

The structuring trade-off consisted of maintaining a strict separation between continuity and liquidation approaches, while isolating the specific treatment of the portfolio.

The main trade-off concerned risk management: incorporating a specific discount without doubling the risk already incorporated in the WACC. Verifying the idiosyncratic nature of the coefficient was the key point of robustness.

This discipline avoided the mechanical aggregation of heterogeneous components and ensured the internal economic consistency of each scenario.

4.1.1.4 Contribution of structured capitalisation in a high-uncertainty context

Analytical structuring did not reduce the uncertainty inherent in restructuring. It helped to stabilise comparative reasoning.

By explicitly distinguishing between operating value and technological value, and by making risk trade-offs traceable, the analysis shifted the discussion from the result to its determinants.

The contribution lies not in producing a higher figure, but in the clarity and defensibility of the reasoning framework in a highly uncertain environment.

4.1.2 Valuation in a contentious context – Cubyn

The Cubyn case was part of a specific contentious context: the company was subsequently liquidated. Any approach based on the current value of the securities therefore became ineffective. The issue was not to determine the value of the company at the time of liquidation, but to estimate the loss of chance for the founder to have been able to sell his shares on the date of his dismissal in May 2022.

The first difficulty concerned the definition of a relevant normative basis:

- the 2022 accounts could not be used as they stood.
- The first half of the year reflected a trajectory consistent with the budget.
- The second half of the year was marked by the dismissal of the directors and a significant decline in turnover.

Using the full financial year would have meant including the effects of the dispute itself in the valuation basis. It was therefore necessary to separate the time periods and reconstruct a level of activity representative of the pre-dispute situation.

This reconstruction was made more complex by successive movements in equity. Fundraising significantly altered net debt, the dilution structure and the implicit value of the securities.

However, net debt is a key determinant in the transition from enterprise value to securities value. Cash injections mechanically inflated the cash balance and net debt metrics without necessarily reflecting a structural improvement in operating performance. The internal debate focused on the choice of reference turnover and net debt to be used as the starting point for the counterfactual scenario.

The second difficulty lay in the absence of stable transaction comparables. As Cubyn is a start-up in the growth phase, with unproven profitability, a deterministic DCF approach would have been based on highly speculative and easily contestable assumptions.

I proposed the implementation of a probabilistic trinomial tree model to simulate the possible evolution of value in a counterfactual framework. The objective was not to produce a single trajectory, but to frame the value in a probabilistic space integrating three directions: favourable, central, and unfavourable.

The model was constructed node by node over the period 2022–2027. At each stage:

- the enterprise value was recalculated,
- then converted into equity value,
- before applying the contractual waterfall of financial instruments.

The main complexity centred on the shareholder waterfall. Cubyn had several series of preference shares with minimum rights and priority allocation mechanisms. At each node of the tree, the contractual clauses had to be applied successively in order to determine the residual share attributable to ordinary shares. The work was mainly operational and contractual: each simulation required a complete reallocation.

The Series D issue following the dismissal was a key factor in the reasoning. This fundraising, carried out at a nominal value significantly lower than that of the previous Series C, led to massive dilution for the founder. Integrating it mechanically would have led to anchoring the value on a reference point subsequent to the event giving rise to the dispute.

The model therefore had to be based on the conditions prior to the dismissal, while incorporating sector dynamics but neutralising the dilutive effects of subsequent governance decisions.

The challenge was to ensure consistency between three dimensions:

- a probabilistic enterprise value,
- an evolving financial structure,
- and hierarchical contractual rights.

The difficulty lay not in the mathematical formula of the tree, but in stabilising the input parameters such as normative turnover, reference net debt and calibrated sector volatility, which conditioned all the scenarios.

This case illustrates a situation where value cannot be understood through linear reasoning. In this contentious context, the analytical structure consisted of isolating the relevant date, neutralising the effects subsequent to the dispute and translating the simulated enterprise value into equity value through the contractual waterfall. Probabilistic modelling made it possible to shift the debate from a binary logic of "the company is liquidated, it is worth zero" to a structured economic analysis of the loss of chance on the date of the events.

4.1.2.1 Valuation under disagreement and litigation risk

In the Cubyn case, the valuation was part of a shareholder disagreement not about the company's current situation, it was subsequently liquidated, but about the founder's loss of chance on the date of his dismissal in May 2022. The challenge was therefore not to estimate a contemporary market value, but to reconstruct a counterfactual scenario consistent with the information available at that date.

In this context, each assumption made (normal level of activity, net reference debt, sector volatility) was open to challenge. The valuation served as evidence: its robustness depended less on a specific result than on the ability to justify the internal consistency of the scenario chosen and to explain the parameters determining the loss of chance.

4.1.2.2 Cash burn, horizon assumptions and scenario divergence

The areas of sensitivity focused mainly on two parameters: cash burn dynamics and the projection horizon used.

Cubyn, in a growth phase and without stable profitability, depended on recurring external refinancing. Small variations in cash consumption assumptions significantly altered the probability of operational survival and, consequently, the distribution of values from the trinomial tree.

The choice of time horizon (2022–2027) was not a neutral parameter: it directly influenced the probability-weighted enterprise value and the economic classification of the loss of chance. A horizon that was too short underestimated the potential capacity for recovery, while a horizon that was too long introduced assumptions that would be difficult to defend in a contentious context. The model was structured precisely to address this divergence without anchoring the value to a single point.

4.1.2.3 Methodological disputes and traceability issues

The most sensitive methodological trade-offs concerned three elements:

- the reconstruction of a pre-litigation normative basis,
- the neutralisation of the dilutive effects associated with the Series D issue that occurred after the revocation,
- the application of the shareholder waterfall to each node of the tree.

The systematic conversion of enterprise value into equity value, followed by the application of preferential rights and priority allocation mechanisms, was a key technical issue. Without precise traceability of the intermediate calculations, the value of the ordinary shares would have been difficult to defend.

The documentation included in the model was intended to make each decision debatable ex ante, rather than to rationalise a result ex post.

4.1.2.4 Lessons for analytical robustness and documentation

In this case, robustness did not result from the mathematical sophistication of the trinomial model, but from the consistency between the counterfactual scenario, the evolving financial structure and the contractual hierarchy of rights.

The key point was to anchor the analysis at the relevant date : neutralising subsequent events, stabilising a normative basis and consistently applying contractual mechanisms at each node.

The value obtained was not presented as certain, but as the consequence of identified and traceable assumptions. It was this explanation of the reasoning, and not the isolated numerical result, that formed the basis for its defensibility in a contentious context.

4.1.3 Valuation in a transactional context (OBO) - Paris Attitude

The proposed transaction consisted of an Owner Buy-Out involving the creation of a NewCo to acquire the shares of the operating company, with the implementation of significant bank financing. The valuation was not the weak point of the case. The challenge was the company's ability to generate and upstream distributable cash flows compatible with servicing the acquisition debt.

The business is based on a rental intermediation model: rents are collected by the company and then paid to the owners. This configuration generates a high level of cash on the balance sheet, a significant portion of which corresponds to non-owner cash held temporarily on behalf of third parties.

The year 2025 marks an operational transition linked to the overhaul of digital tools and the customer acquisition process. This restructuring will lead to a temporary decline in revenue and a tax deferral until 2026. Taken in isolation, these factors remain manageable. However, when combined with the mechanics of landlord balances (funds held on behalf of landlords), they are projected to generate a significant change in WCR in 2026.

Mechanically integrated into the cash flow statement, this variation produced unstable operating cash flows even though cash flow from operations remained consistent. The model gave the impression of structural tension that was difficult to sustain in the eyes of the banks.

The key point was to recalibrate the reading of working capital by clearly distinguishing between:

- operating WCR, directly linked to the company's own economic activity;
- transit cash flows related to rents, corresponding to amounts temporarily collected on behalf of third parties;
- one-off effects related to the 2025–2026 transition, in particular the tax deferral and post-restructuring normalisation.

From an accounting perspective, landlord balances can be viewed as operating liabilities. However, their inclusion in the normative WCR artificially amplified the volatility of available cash flows. The model was therefore adjusted to isolate non-owner cash at the level of cash and cash equivalents, without affecting the dynamics of the WCR used for the projection.

The purpose of this choice was not to improve the cash flows presented, but to reflect the economic reality of the business model. In a leveraged transaction, misclassification of working capital can lead to inappropriate debt sizing and weaken the transaction. The financial consistency of the case therefore depended directly on this distinction.

This case illustrates that in transactions, the main difficulty does not always lie in the valuation method chosen, but in the accurate financial translation of a specific business model within a structured financing scheme.

4.1.3.1 Transaction-driven valuation objectives

In the Paris Attitude case, the valuation had to be compatible with the structuring of a debt-financed owner buy-out. The value chosen had to simultaneously allow for an acceptable price for the seller, preserve the holding company's debt servicing capacity and remain consistent with the actual generation of distributable cash flows.

The valuation could therefore not be separated from the financing model. A value that was economically consistent but incompatible with the cash flows available to the holding company would have made the arrangement unworkable, regardless of the method used.

4.1.3.2 Financial normalisation and non-operating cash treatment

The most important factor was the interpretation of WCR and the treatment of non-proprietary cash. The rental intermediation model generates significant cash inflows corresponding to

rents held temporarily on behalf of third parties. As noted above, these amounts sit in cash on the balance sheet and can be treated as operating liabilities. Economically, they do not constitute resources available for debt servicing.

Automatically included in the normative WCR, these outstanding amounts produced artificial volatility in operating cash flows, amplified by the 2025–2026 transition (digital overhaul, temporary decline in activity and tax deferral). The recalibration consisted of isolating these transit flows and clearly distinguishing the operating WCR from the company's own activity. The objective was not to improve projected cash flows, but to avoid over- or underestimating the actual distribution capacity in a leveraged context.

4.1.3.3 Intra-group consistency of valuation parameters

Intra-model consistency was a key point of focus. The assumptions used for the valuation of securities (growth, margins, financial structure) had to be strictly aligned with those used in the modelling of the acquisition holding company's cash flows. In an OBO, even a marginal divergence between the parameters of the DCF model and those of the financing model can unbalance the banking ratios.

In the case studied, the operational transition in 2025 and post-restructuring normalisation made this alignment particularly sensitive. The work consisted of ensuring that the adjustments made to working capital and non-proprietary cash flow were consistent across all analytical blocks, in order to avoid any implicit distortion resulting from an assumption being treated differently depending on the model.

4.1.3.4 Benefits of capitalising recurring analytical treatments

In this case, the analytical structure involved not changing the valuation method but formalising the underlying processing logic: separating operating cash flow from transit cash flow, neutralising one-off effects related to the 2025–2026 transition, and strictly aligning the assumptions between valuation and financing.

The key factor was consistency between projected economic performance, actual distributable cash flows and debt sizing. The sustainability of leverage did not depend on a one-off adjustment, but on the stability of these relationships.

The aim of capitalising on these principles is not to standardise the conclusions of future transactions, but to maintain a consistent analytical framework for business models generating significant intermediate cash flows. In a transactional context, this continuity of reasoning directly determines the credibility of the case with lenders.

4.2 Cross-case analysis and transferable analytical insights

4.2.1 Diversity of valuation contexts

The three assignments analysed highlight that valuation does not pursue a uniform objective depending on the decision-making context. In restructuring, value is used to compare incompatible trajectories under continuity constraints. In litigation, it aims to objectify damage

on a given date in a conflictual environment. In transactions, it must be compatible with the execution of a structured financial arrangement.

These differences affect not only the methods used, but also the very function of the value produced. Depending on the case, value is a tool for arbitration, a means of proof or an operational parameter for negotiation. Time horizons, tolerance for uncertainty and the degree of documentation requirements vary accordingly.

However, this heterogeneity of purposes does not make analytical structuring contingent on a particular type of assignment. On the contrary, cross-sectional observation shows that, despite the diversity of objectives, certain requirements remain constant: clarification of structuring assumptions, identification of areas of sensitivity and internal consistency of restatements.

Thus, the robustness of the approach developed does not depend on the homogeneity of the results, but on the stability of the reasoning framework in the face of contrasting decision-making environments. Contexts shift the critical points of analysis, they do not eliminate the need for explicit structuring of judgement.

4.2.2 Transferability of structured assumptions and adjustments

Cross-analysis of the three cases highlights a clear distinction between specific parameters and transferable mechanisms.

Quantified parameters (growth, margins, liquidity, discounts, risk coefficients) are intrinsically dependent on the sectoral, legal and temporal context. Their mechanical reproduction from one case to another would be economically unfounded.

On the other hand, certain analytical mechanisms are sufficiently stable to be effectively capitalised upon.

Three levels of transferability can be identified:

- The structuring of critical assumptions. In each assignment, the first structuring step consisted of isolating a limited number of determining parameters (operational continuity in restructuring, relevant date in litigation, generation of distributable cash flows in transactions). The ability to map these areas of sensitivity is a reusable mechanism, regardless of the sector or purpose of the valuation.
- Separation of economic rationales. The distinction between incompatible scenarios (continuity vs. disruption), between relevant periods (pre- and post-litigation), or between operating cash flows and transit cash flows in an OBO is a matter of common analytical discipline: avoiding hybrid values resulting from an implicit aggregation of heterogeneous assumptions. This requirement for internal consistency is transferable.
- Integrated traceability of trade-offs. Documenting choices at the moment they take effect in the model – rather than in an ex-post justification – makes it possible to attribute value differences to identified decisions. This practice remains relevant regardless of the level of exposure to the risk of dispute and the nature of the assignment.

Capitalisation thus focuses less on solutions than on reasoning structures. It does not aim to homogenise conclusions, but to stabilise the conditions for producing professional judgement. It is therefore at the level of the consistency of analytical mechanisms that transferability demonstrates its real scope.

These mechanisms directly address the difficulties observed in Chapter 2, in particular with regard to the traceability of decisions and the comparability of cases.

4.2.3 Professional contribution and limits of the proposed approach

The professional contribution resulting from the internship lies neither in the introduction of a new valuation method nor in the production of atypical results, but in the explicit formalisation of a framework for structuring reasoning applied to heterogeneous assignments.

In the cases analysed, a significant proportion of the structuring judgements – classification of a strategic asset, freezing of a scenario at a relevant date, distinction between operating cash flow and transit cash flow – appeared in the models without always being formally explained. The work carried out consisted of identifying these areas of judgement, clarifying their logic and organising their traceability within the analytical tools themselves.

The contribution is therefore at an intermediate level: not at the level of the final figure, but at the level of the conditions under which the figure is produced. By making the structural assumptions and critical trade-offs explicit, the approach improves intra-file consistency and facilitates inter-professional discussion, particularly in environments exposed to contradiction (restructuring, litigation, bank financing).

However, the limitations of the approach are inherent in the very nature of valuation. Structuring the reasoning does not reduce informational uncertainty or dependence on professional judgement. It does not guarantee convergence of values or the absence of disagreement between analysts. It provides a framework for consistency, not risk neutralisation.

Furthermore, its effectiveness depends on its collective adoption. Without discipline in documentation and updating, the structure risks remaining formal. It does not replace the individual experience or critical capacity of the analyst but constitutes an organisational support.

The professional contribution thus lies less in the promise of a more "objective" valuation than in improving the clarity, consistency and defensibility of reasoning in constrained decision-making contexts.

4.3 Operational structuring of internal detection and capitalisation capabilities

Section 4.3 describes a system currently being implemented within the group, to which I contributed at Caelius Partners by formalising business needs (valuation/restructuring/transaction). It does not present a theoretical "target" model: it reflects (i) what was actually undertaken during the internship and (ii) how operational requirements

were translated into detection and capitalisation strategies. The impact will depend on effective adoption and deployment.

4.3.1 Structuring of the data function and technical infrastructure

The recruitment of a team of three data analysts is a key step for Audit CPA. To ensure that this team is not perceived as merely providing technical support, it is positioned at the interface between the IT division and the business departments (Valuation, Restructuring, Transaction).

Composition and roles of the data analysis unit

A team of three people covers the entire data value chain, from extraction to visualisation. The chosen organisation is structured around the following functions:

- Data Engineer (Technical profile/Lead): Their mission is to build and maintain data pipelines between Pennylane and the firm's internal system. They are responsible for ensuring the reliability of data flows, API management and data security (GDPR compliance).
- Data Analyst (Job profile / Analytics): Transforms raw data into financial indicators. Creates calculation models for WCR, solvency ratios and transaction detection scores. Their role is to make the numbers speak.
- The Business Data Liaison (Hybrid Profile / Consulting): Bridges the gap between the needs of partners and the technical capabilities of the team. Translates business requests into technical specifications and supports employees in the use of detection dashboards.

The technical elements above correspond to the scope discussed/presented during the internship, without claiming to describe the group's final architecture.

Technical architecture: Using Pennylane software

The choice of Pennylane as the central platform facilitates the work of data analysts. Unlike traditional accounting software, Pennylane adopts an "API-first" approach, allowing for granular retrieval of transactional data.

Depending on the needs identified, two connection modes are used:

- Data Sharing: Used for large-scale portfolio analysis. It allows Pennylane data to be integrated into a BI environment (Power BI, Snowflake) with regular updates adapted to large volumes.
- The Pennylane API: Used for targeted extractions or alert logic. It allows certain accounts to be queried or change logs to be retrieved in order to identify changes in a client's situation.

Deployment is part of an iterative process, allowing tools to be adjusted to internal uses and their operational impact to be gradually assessed.

Phase	Objective	Key actions
1. Scoping	Define strategic KPIs	Identify priority weak signals for each business line
2. Extraction	Centralise data	Connect Pennylane APIs and standardise data
3. Modelling	Create scoring algorithms	Develop automatic detection scripts by context type
4. Visualisation	Deploy dashboards	Create intuitive Power BI interfaces for partners
5. Management	Track ROI	Measure the number of internal assignments generated by the tool

Table 3 – Implementation roadmap for internal signal detection infrastructure

4.3.2 Analytical extraction framework for target context identification

In order to enable the data team to identify companies that may be in a situation of (i) distress, (ii) litigation or (iii) transaction, a structured investigation plan is implemented in the Pennylane software. This plan is based on selective analysis of the General Accounting Plan (PCG) accounts and observation of specific transactional patterns.

4.3.2.1 Context of companies in difficulty/restructuring

The detection of financial distress is based on the anticipation of a cash flow disruption. The data team monitors liquidity indicators and payment behaviour vis-à-vis institutional third parties, who are often the first to be affected by delays.

Indicators and patterns to be extracted:

- Deterioration in WCR: A significant increase in customer payment terms (DSO) coupled with an increase in supplier debt is a major warning sign.
- Analysis of tax and social security debts: The accumulation of credit balances in government accounts (445, 448) and social security accounts (431) without corresponding reconciliation/matching indicates a forced deferral of payment.

- Use of exceptional expense accounts: The 2025 PCG reform moves certain items, but penalties and fines remain indicators of tension.

Type of data	PCG Accounts Targets	Weak Signal/Pattern
Penalties	6711, 6712, 638 (Reform)	High frequency of market penalties or tax fines
Banking tensions	661, 512	Increase in overdraft fees and commissions, bank balance close to the authorised limit
Social security debts	431, 437, 438	Balances rising steadily over three consecutive months
Exceptional expenses	671	Compensation paid, bad debts

Table 4 – Distress detection indicators based on PCG accounts

The detection score combines the immediate liquidity ratio and the recurrence of penalties in the purchase journal. Companies whose score exceeds a defined threshold may be reported to the Restructuring department for analysis and possible proposal of an ad hoc mandate or conciliation.

4.3.2.2 Context of disputes and litigation

Identifying litigation remains more difficult, as the signs are often hidden in external services or provision accounts. The data team analyses the financial flows related to legal advice as well as year-end entries reflecting an identified risk.

Indicators and patterns to look out for:

- Legal fees: A sudden increase in debits in account 6226 (Fees) may indicate the initiation of legal proceedings or arbitration.
- Specific legal fees: Account 6227 (Legal and litigation fees) is the most direct indicator of active litigation. Descriptions should be extracted via the Pennylane API (ledger_entries) to identify keywords such as "Summons", "Court Registry", "Bailiff", "Employment Tribunal".
- Provisions for risks: Allocations to class 15 accounts (Provisions) reflect an accounting assessment of a future risk.

Data type	Target PCG accounts	Analytical Action
Legal advice	6226	Scan labels to detect names of law firms specialising in litigation
Active proceedings	6227	Systematic alert for any significant amount debited from this account
Anticipated risks	151	Analyse annual provisions for litigation (1511)
Adjustments	6717, 638	Detection of tax or social security contribution adjustments

Table 5 – Detection indicators for litigation and provision risk

A label tracking tool is integrated to automatically process supplier invoice descriptions by automatically processing labels (rules + keywords) and isolating files that may require a damage assessment or independent financial expertise.

4.3.2.3 Transactional context

The detection of transactional opportunities is based on the identification of capital movements, changes in legal structure and early warning signs of disposal.

Indicators and patterns to be extracted:

- Movements in share capital: Any change in account 101 (Capital) indicates a fundraising, the arrival of a new partner, or a restructuring of the balance sheet.
- Dynamics of partners' current accounts: Massive repayments from current accounts (Account 455) or sudden contributions may precede a sale or transfer of the business.
- Due diligence and set-up costs: Companies in the acquisition phase often incur research or consulting costs upstream.

Type of data	Target PCG accounts	Strategic Significance
Share capital	1011, 1012, 1013	Change in Shareholder Structure

Related Flows	455, 456, 457	Preparation for exit or strengthening of equity capital
Equity securities	261	External growth strategy (acquisition of subsidiaries)
Set-up costs	6226 (with transaction description)	Presence of keywords: "Due Diligence", "LBO", "Valuation", "VDD"

Table 6 – Early accounting signals of ownership change and transaction events

When legal documents are stored on the platform, the Pennylane API also makes it possible to identify changes in legal representatives or statutory amendments. Cross-referencing this data with financial flows makes it possible to isolate companies showing signs of strategic movement, which may give rise to financial modelling, business plan or divestment support assignments.

4.3.3 Capitalisation of analytical outputs from completed assignments

In addition to the deliverables provided to clients, the valuation assignments carried out within the firm produce a structured set of analytical data. Each assignment involves restatement matrices, explicit or implicit assumptions, alternative scenarios, sensitivity analyses and documented trade-offs relating to risk treatment, performance normalisation or cash flow qualification. In practice, these elements constitute an analytical capital built up over the course of the assignments.

During the assignments in which I participated, it became apparent that this analytical output remained essentially tied to the logic of each individual model. The main structural assumptions (growth, normative margin, risk parameters, treatment of cash and debt-like items) are present in the working files but are rarely extracted in a format that can be reused from one case to another. Capitalisation therefore remains largely implicit and dependent on the memory of the teams. In several instances, parameters had to be reconstructed manually from prior files.

In concrete terms, several recurring analytical building blocks appear from assignment to assignment without currently being subject to formalised indexing.

Firstly, the types of performance restatements used to normalise EBITDA. Assignments regularly reveal:

- adjustments to executive compensation in order to align the expense with market levels;

- the reintegration or exclusion of non-recurring items (restructuring indemnities, fees related to an exceptional transaction, capital gains or losses on disposals);
- the restatement of certain provisions or IFRS normative effects to restore sustainable performance.

These restatements are documented on a case-by-case basis, but their logic is not consolidated in a cross-functional reference framework.

Secondly, the rules for classifying cash and items similar to debt when converting the value of the business into the value of the securities. The files analysed highlight recurring issues: the distinction between cash that is distributable and cash that is in transit or blocked, the reclassification of shareholders' current accounts, tax debts or social liabilities as quasi-debt. Here again, the principles are well understood, but their cumulative formalisation remains limited.

Thirdly, points to watch regarding risk treatment, in particular the identification of situations where a specific adjustment (discount on an asset, risk coefficient, probability scenario) may overlap with a risk already incorporated in the discount rate. The lack of explicit formalisation of these trade-offs may lead to inconsistencies such as double counting (specific discount + rate increase for the same risk) of the same risk factor.

These building blocks are not fixed standards: they are intended to enhance consistency between cases without limiting professional judgement.

This limitation is particularly apparent when reconstructing reprocessings or parameters already used in comparable contexts. In the absence of a shared reference framework, learning remains primarily individual and dependent on the memory of the teams.

The emergence of a data unit within the group creates an opportunity for coordination between two distinct levels: upstream detection of potential situations and downstream capitalisation of the reasoning produced during assignments. While the first dimension is based on the use of accounting and transactional data, the second would require the targeted extraction of assumptions and structural parameters from internal models. The challenge is not to standardise the conclusions of assignments, but to identify recurring analytical components that can be documented and reused.

However, experience gained during assignments shows that the full capitalisation of reasoning remains limited by the specific nature of the assumptions used. The parameters selected respond to specific configurations of shareholder structure, legal constraints and decision-making horizons, which reduce their direct transferability. The value of such capitalisation therefore lies less in the creation of a normative base than in the formalisation of common points of vigilance and recurring processing logics.

The models therefore constitute a potential organisational resource, but their transformation into collective memory remains to be consolidated. This limitation does not call into question

the quality of the work produced. it sheds light on the conditions under which an improvement in internal capacities can be envisaged without impoverishing professional judgement.

4.3.4 Organisational and economic implications

The implementation of internal detection mechanisms, coupled with a logic of analytical capitalisation, responds to a simple tension: an extensive client portfolio and available signals, but few formalised mechanisms for escalating situations requiring expertise in valuation, restructuring or transactions.

Impact on the internal generation of assignments

The firm already has a significant volume of accounting data from its portfolio. Before the restructuring process began, the identification of situations of financial stress, litigation or transactional movements relied mainly on the vigilance of partners, relational signals or explicit requests from clients.

The introduction of a structured detection process has changed this approach. The systematic screening of certain accounting and transactional indicators now makes it possible to identify atypical or changing financial situations that may warrant specialised intervention, even before a formal mandate is requested. During my internship, my contribution consisted of formalising Caelius Partners' business needs to be translated into indicators and detection rules.

This mechanism does not guarantee that detected signals will automatically be converted into assignments. However, it creates the conditions for earlier and more objective internal referencing of potential cases.

In terms of resource allocation, structured mapping of financial signals also makes it possible to focus attention on cases of increased analytical complexity, rather than intervening only when the situation becomes critical or conflictual.

Impact on the structuring of analytical memory

Beyond the commercial implications, the joint structuring of upstream detection and the extraction of analytical building blocks from assignments opens up the possibility of more organised storage of the reasoning produced.

Assessment and restructuring assignments repeatedly involve performance standardisation, debt qualification, scenario building and sensitivity analysis. In practice, these lines of reasoning remain largely encapsulated in the working files specific to each case. Once the assignment is complete, only part of the analytical logic is reused informally.

The reconciliation of accounting configurations detected upstream and structured analytical responses downstream makes it possible to identify recurring processing patterns. The objective is not to standardise conclusions, but to make the mechanisms used in critical decisions more explicit.

It does not eliminate the situational dimension of assumptions or the need for professional judgement. However, it tends to limit the repetitive reconstruction of logic already used in comparable contexts and to strengthen the internal consistency of practices.

Organisational effects and professional positioning

The creation of a dedicated data function formalises an interface that previously operated in a diffuse manner between accounting production and financial expertise.

In concrete terms, the accounting teams produce the data, while the valuation and restructuring teams interpret the financial structures. The data unit introduces an intermediate level capable of identifying structural signals and directing them to the relevant departments.

For a firm located at the interface between accounting compliance and financial advice, this development is gradually changing its professional stance. Its intervention is no longer based exclusively on a request made by the client. It can be based on the internal identification of significant financial configurations.

In economic terms, three effects can be anticipated in the medium term:

- increased penetration of valuation and restructuring services within the existing portfolio;
- a more targeted allocation of analytical resources to situations presenting structural financial signals;
- a gradual consolidation of organisational memory through documentation and the partial reuse of analytical approaches.

The actual extent of these effects will depend on the continued deployment and collective ownership of the system. Nevertheless, in an environment where analytical expertise is the main driver of value creation, the joint structuring of detection and capitalisation capabilities formalises an operational change in the way financial situations are identified, analysed and retained within the firm.

5 Conclusions and Perspectives

5.1 Consolidated findings and contribution of the thesis

This thesis is based on an organisational tension identified during the internship within the CPA Audit group and more specifically at Caelius Partners: technically proficient expertise in valuation, restructuring and transaction services, backed by an extensive client portfolio and continuous accounting flows, but lacking a structured mechanism for both (i) anticipating situations that generate specialised assignments and (ii) transforming the reasoning produced during assignments into a cumulative analytical resource.

The diagnosis developed in the thesis shows that this limitation does not lie in the valuation methods themselves, but in the interface between accounting data, analytical transformations and the formalisation of judgement. Heterogeneous formats, largely manual ingestion

processes, and analytical transformations that are insufficiently logged, combined with the early mobilisation of professional judgement without a shared traceability framework, create organisational discontinuity.

On this foundation, the study distinguishes between two analytical levels.

At the level of final results, value remains contextual and dependent on specific assumptions.

At the intermediate level, however, certain elements of the reasoning are sufficiently stable to be structured: performance standardisation logic, cash and quasi-debt qualification, explicit separation of incompatible scenarios, consistent articulation between adjustments and risk parameters, and minimum requirements for internal and temporal consistency.

The central contribution of the thesis lies in this intermediate capitalisation. It is not a question of standardising conclusions or automating expert judgement, but of stabilising the conditions for producing financial reasoning. The robustness of a valuation thus appears to be less linked to the formal sophistication of the model than to the systemic alignment of the assumptions that structure it and the traceability of the transformations carried out between raw data and results. The personal contribution of the internship lies precisely at this level: explaining and documenting areas of judgement already present in the models, such as determining the relevant date in litigation, distinguishing between operating cash flow and transit cash flow in transactions, or constructing scenarios in restructuring, in order to enhance comparability and transferability.

5.2 Operational implications for valuation, restructuring and transaction

The proposed framework has direct operational implications.

First, it reinforces the discipline of constructing assumptions. Internal memory should not operate as an implicit norm, but as a structured discipline of justification. Any significant deviation from recurring treatments (EBITDA normalisation, WCR, classification of atypical debts) must be explicitly justified. This requirement reduces the proportion of unexplained variability.

Secondly, it improves the defensibility of analyses in exposed environments. In litigation in particular, the soundness of an assessment depends less on the complexity of the model than on the ability to reconstruct a coherent chain linking accounting data to the restatements made, then to the underlying assumptions, the applicable contractual mechanism and, finally, the economic result obtained. The resulting reduction in analytical opacity enhances the credibility of the analysis in the eyes of third parties.

Thirdly, it clarifies the interpretation of differences between comparable cases. By stabilising certain elements of reasoning, it becomes possible to distinguish more clearly between a real economic difference and a technical treatment difference.

Finally, from a strategic perspective, the structured exploitation of the portfolio via the data unit introduces a logic of pre-orientation. The identification of recurring financial signals, such as

pressure on WCR, atypical changes in tax or social security liabilities, capital movements identified in particular via accounts 101 or 455, or certain transactional indicators derived from accounting descriptions, increases the internal visibility of situations with potential. The challenge is not deterministic prediction but improving organisational attention in a data-rich environment.

5.3 Structural and organisational limits of the proposed framework

The proposed framework nevertheless has structural limitations.

This form of capitalisation necessarily remains partial. Critical valuation assumptions remain dependent on specific legal, sectoral and temporal contexts. Any attempt at broad standardisation would introduce a risk of inappropriate simplification.

Furthermore, the effectiveness of the system depends on the quality and governance of upstream data. Downstream analytical structuring cannot sustainably compensate for heterogeneous or insufficiently traceable data ingestion, as classification errors propagate through the models and alter overall consistency.

The risk of rigidity must also be highlighted. An internal memory can gradually become an implicit normative reference, limiting the ability to adapt to atypical situations. The proposed capitalisation must therefore be designed as a support for consistency and not as a prescriptive constraint.

Finally, the organisational impact will depend on effective adoption by teams. Without established documentation routines and integration into existing tools, structuring will remain marginal.

5.4 Strategic development perspectives

Several extensions can consolidate the proposed framework.

In the short term, stabilising a common foundation appears to be a priority: a shared reference framework for recurring restatements, a consistent definition of key aggregates (adjusted EBITDA, WCR, operating cash flow), and minimum traceability requirements integrated directly into working models.

In the medium term, the gradual creation of an internal empirical history can complement external benchmarks, particularly for the SME segment, where market comparability is sometimes limited. This development requires constant discipline in the definition of aggregates and the auditability of transformations.

Ultimately, strengthening the link between upstream detection and downstream expertise is a strategic lever. Signals identified in portfolio data can be compared with lessons learned from completed assignments, creating an organisational learning loop. This dynamic is not intended to replace professional judgement with an automated mechanism, but to strengthen collective consistency and anticipation.

Overall, valuation will remain a judgement-intensive activity. The challenge highlighted by this work is not to reduce the uncertainty inherent in the exercise, but to improve the organisational conditions that make this judgement more consistent, traceable and cumulative. The contribution of the thesis therefore lies in formalising the mechanisms that can transform dispersed expertise into a more structured analytical resource, while preserving the singularity of professional judgement.

6 Bibliography

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7 List of tables and figures

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