

# **Unlocking the True Value of Intellectual Capital: A Study of the Valuation Relevance of Intellectual Capital in an M&A Intensive Era**

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## **Abstract**

Capital market actors must understand the fundamental value-drivers in society, yet accounting standards face difficulties in capturing Intellectual Capital (IC) information. Meanwhile, the number of acquisitions is ever-growing, but research on the valuation relevance of IC in mergers and acquisitions (M&A) is lacking. This paper proposes a qualitative single case study with a performative view of IC to address this gap and examine its behavioral information usefulness throughout the M&A process. By conducting an interview and document-based analysis of a large-cap firm in the tech sector, the study finds that while IC's valuation relevance cannot be ascertained, it is connected to the degree of disentanglement and overflow, which varies across the different phases of the M&A process. Moreover, IC is found to be transformable, sometimes from an asset to a liability, and to serve as a determinant between value creation or value destruction. By adopting a more holistic approach, this paper contributes to the field of valuation relevance and extends existing literature by demonstrating the non-uniformity of IC's valuation relevance and its transformative nature. The study also presents a valuable addition to the performative research field within the realm of IC. Future research should continue studying IC's role in value-creating processes, extend the valuation relevance of IC in M&A from the sell-side's perspective, and develop mechanisms to capture the dynamic value of IC.

**Key words:** Valuation Relevance, Value Relevance, M&A, Intellectual Capital, Disentanglement, Overflow, Performative, Ostensive

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# 1 Introduction

Dark matter makes up 85% of the universe, but it cannot be observed directly (CERN, 2023). Physicists understand that it must exist because the universe has not exploded, and it is necessary for galaxies to stay together. Similarly, intellectual capital (IC) is the “dark matter” of finance, as it is difficult to measure but comprises a large portion of the modern economy. In fact, intangibles made up a staggering 90% of total assets in 2020, in stark contrast to the mere 17% recorded in 1975 (Ocean Tomo, 2020). The composition of the S&P 500’s assets has thus undergone a significant transformation over the past four decades. This shift highlights the transition of the global economy from having an industrial focus to one that is characterized by technology, ideas, and knowledge. The current era is often referred to as “capitalism without capital”, where the value of a company is driven by IC such as human capital and data, rather than tangible assets (Haskel *et al.*, 2018).

Just as accounting for all matter, including dark matter, is necessary in physics, taking IC into account is necessary for a stable financial system. Yet, current accounting frameworks have a difficult time in capturing the value of such capital (Lev & Zarowin, 1999; Lev & Gu, 2016). In light of this larger economic transformation, the question arises what valuation relevance IC has in the knowledge-based economy, i.e., its information usefulness for stakeholders involved in a valuation process.

## 1.1 Background and Problem

Understanding what the fundamental value drivers in society are is crucial for capital market actors to comprehend. Therefore, research examining what valuation relevance IC has in an era with a growing accumulation of IC is essential to achieve a stable and thriving financial market. However, research in this field has several shortcomings. Thus, the research problem we aim to address is threefold.

First, a practical problem relates to the accounting standards’ difficulty in capturing IC information. Even as standards and regulations of financial reporting have changed, their fundamental structure has largely remained unchanged during the last century, which is said to serve as explanation for the finding by Lev and Gu (2016) that only 5% of the information in financial reports is relevant for investors. Previous research has addressed this issue, and

their findings suggest that the inability to capture the value of IC has led to a decline in the value relevance of accounting numbers in the new economy (Lev & Gu, 2016; Lev & Zarowin, 1999; Lev & Daum, 2004). Some researchers in the value relevance field (Lev & Gu, 2016; Lev & Zarowin, 1999; Lev & Daum, 2004) argue that insufficient IC recognition can partly serve as an explanation for the growing gap between market-to-book. However, other research (Barth *et al.*, 2023) has found that results are mostly dependent on the method employed, and hence, the value relevance research comes to somewhat contradictory conclusions. Nevertheless, Barth *et al.* (2023) show that new-economy relevant items, such as IC, growth opportunities, and alternative performance measures, have gained increased value relevance in recent years. The consensus seems to be that IC is continuing to gain traction and importance in the new era.

A second problem with previous research is, as Zegal and Maloul (2011) point out, that research on the value of IC has predominantly employed a quantitative approach. Moreover, research in the field of value relevance (Lev & Zarowin, 1999; Barth *et al.*, 2023), has mainly been concerned with investigating the statistical relation between financial information and share price (Flöstrand & Ström, 2006). Hence, there is a gap in terms of qualitative research in the field, and Zegal and Maloul (2011) suggest that future studies should increase the adoption of qualitative research agendas. Although limited, there have been a number of qualitative studies (Flöstrand & Ström, 2006; Graaf, 2013; Holland, 2003; Brännström *et al.*, 2009; Abhayawansa *et al.*, 2018) which have investigated the value of non-financial information. They have examined the valuation relevance of IC, which refers to the usefulness of information from a behavioral perspective, and differ from value relevance research since it is focusing on examining the usefulness of accounting information for users in the valuation process (Flöstrand & Ström, 2006). Research in the field (Flöstrand & Ström, 2006; Graaf, 2013; Holland, 2003; Abhayawansa *et al.*, 2018) have mainly focused on the valuation relevance of IC for analysts and financial managers, and investigated the disclosure of IC information.

A third issue with previous research in the field is the lack of studies that investigate the valuation relevance of IC in M&A. Over the last few decades, M&A has become a crucial tool and preferred business strategy (Hossain, 2022). Despite the fact that deal prices have risen in the technology sector, where companies' value largely consists of IC, acquisition of high tech companies continues to increase, and viewed as an approach to obtaining intangible

benefits and keeping up with the rapidly changing environment by acquiring new competencies, know-how, and technologies (Boote *et al.*, 2019). As a result, the M&A process is now largely concerned with IC-related issues, and as a recent McKinsey report points out, synergies and cultural fit, among other non-financial factors, as critical factors for successful acquisition in today's economy (Daume *et al.*, 2022). Additionally, a report from Bain & Company underscores the importance of due diligence in the process of valuing target companies, highlighting the need to thoroughly evaluate IC-related factors such as the competence of the target companies' employees (Farmer *et al.*, 2023). Hence, the setting of M&A serves the purpose well as IC components have to be assessed and taken into account through the M&A process.

To address this gap in the literature, this paper will contribute to the field of valuation relevance by conducting a unique qualitative case study that examines the valuation relevance of IC in an M&A process. The study provides an in-depth exploration of a company's acquisition process, resulting in a deep understanding of the complex motions underlying the valuation relevance of IC.

## **1.2 Purpose and Research Question**

In order to understand IC's value-creating nature, it is essential to investigate its value and valuation relevance. However, the body of qualitative research in this field remains limited, with a particular absence of studies examining the valuation relevance of IC in the context of M&A processes. Further, as noted by Abhayawansa *et al.* (2018), much of the research on IC has taken an ostensive view; that is, viewing IC components as fundamental, and as properties which is deeply ingrained within the organization. Research (Mouritsen, 2003; 2006; 2009; Dumay, 2012) have argued that new research of IC should aim to apply a performative view, and contribute to the valuation relevance field by examining linkages between IC components and the causal relationship between people, processes and stakeholders. In this paper, we will employ a qualitative case study with a performative view of IC, aiming to shed light on its true significance and role in the value-creating system. Therefore, our research question is as follows:

*What is the valuation relevance of intellectual capital in an M&A process?*

In other words, we aim to examine the behavioral information usefulness of IC components throughout all phases of an M&A process. This will be conducted using a performative approach to investigate IC's role in the value-creating system and its interrelation with other entities, actors and contexts.

### **1.3 Contributions**

The contributions of this paper are manifold. By investigating the valuation relevance of IC in an M&A process, we provide illumination on a topic that hitherto has not yet been investigated within the academic realm. Firstly, we demonstrate that the degree of disentanglement of IC varies across different phases of the acquisition process. This finding makes a significant contribution to the field of valuation relevance (Flöstrand & Ström, 2006; Graaf, 2013; Holland, 2003; Abhayawansa *et al.*, 2018, Brännström; 2009) not only by extending research into an M&A setting but also by showing that the degree of valuation relevance is not uniform throughout the M&A process. Secondly, we build on existing literature (Graaf, 2013) by showing that IC is not simply a link between financial numbers and reality but can be a crucial determinant of value creation or value destruction. Thirdly, we depart from the extensive body of quantitative research on value relevance and adopt a more holistic approach to investigate the value of IC by examining its valuation relevance from a qualitative and performative perspective in the context of M&A. This innovative approach allows for a more nuanced understanding of the complex dynamics underlying the valuation relevance of IC. Furthermore, this paper presents a valuable addition to the area of performative research within the realm of IC, which has traditionally been characterized by ostensive research.

### **1.4 Limitations**

It is important to note that this study has inherent limitations, which do not undermine the contributions of the paper, but rather highlight the specificity and particularity of the research. Firstly, the study focuses on a single company within the technology sector, and is conducted through a single case study, enabling a detailed and in-depth analysis of the valuation relevance of IC in the case company's M&A process. Secondly, due to practical constraints, a limited number of interviews were conducted. Lastly, although access to documents was impressive, it was not unlimited.

## **1.5 Disposition**

The introduction of this thesis has provided an overview of the research problem, objectives, and research questions. The literature review will follow as the second section, which will be divided into two parts: (1) literature review and previous research, and (2) theoretical framework. Section 3 is the research methodology which describes the research design, data collection process, and data analysis procedures. Section 4 is the analysis presenting the findings from the data collected, followed by section 5: discussion, which interprets, synthesizes and contextualizes the findings in light of the research objectives and research question. Lastly, section 6 concludes and summarizes the research problem, objectives, research question, and findings, and offers recommendations for future research.

## **2 Theory and Literature Overview**

### **2.1 Literature Review and Previous Research**

#### **2.1.1 Intellectual Capital**

##### *2.1.1.1 Definition and types*

A literature review from 2000-2020 concluded that in academia, terms such as “intangibles”, “intangible assets”, “knowledge assets” and “intellectual capital” are often used interchangeably (Garanina *et al.*, 2021). However, while intangibles and IC both pertain to the non-material resources that hold potential future economic value for a company, it has been argued that their usage varies: "intangibles" is a term rooted in accounting, while "intellectual capital" stems from the human resources domain. The term "intangible asset" thus specifically implies intangible investments that can be accounted for on a company's balance sheet (MERITUM, 2002). As a result, although intangibles and IC can be viewed as synonymous, the term “intangible asset” is more limited, representing only those aspects of IC that qualify for recognition as assets based on the current accounting system.

For these purposes, the term “intellectual capital” (IC) will be used throughout this essay, and more specifically based on the MERITUM definition and classification. The MERITUM Project, developed by the European Commission in 2002 in order to harmonize and encourage IC disclosure, presents a three part model that categorizes IC into structural, human and relational capital.

Structural capital refers to the knowledge which does not leave the company when employees do. It includes the underlying infrastructure that supports the organization, such as processes, computer systems, and administrative systems, among others. Additionally, some structural capital may be legally protected and become intellectual property (IP) owned by the company (Kristandl & Bontis, 2007; MERITUM, 2002).

Human capital, the second category, refers to the knowledge possessed by employees that they take with them when they leave the firm. It includes both individual and generic knowledge, such as experience, skills, expertise, and abilities. Examples of human capital include “know-how”, previous experiences, and learning capacity (Kristandl & Bontis, 2007; MERITUM, 2002).

The last category, relational capital, refers to the resources created through external relationships of the firm with its stakeholders, such as customers, suppliers, and other partners. For instance, this could include customer satisfaction, networks with suppliers, and negotiation capacity (Kristandl & Bontis, 2007; MERITUM, 2002).

#### *2.1.1.2 Accounting standards of IC*

The literature on IC has seen the emergence of alternative classifications, which contrast with the two-category classification for IC used by accounting standard-setters: external and internal. Externally acquired IC is generally considered simpler to account for, as the asset cost is the asset’s fair value established during the transaction. However, the accounting of internally generated IC is often more complex, as there may not be a clear market value to use as a basis for accounting (Zéghal & Maaloul, 2011). The challenge is that accounting standards have historically faced a trade-off between *relevance* and *faithful representation* (IASB 2018, §8.9), defined as the fundamental qualitative characteristics of useful financial information (IASB 2018, §2.5). The term relevance refers to the quality of information that can impact a decision (IASB 2018, §2.6), while faithful representation accurately and completely represents the underlying substance of an economic phenomenon (IASB 2018, §2.9). The decision to balance relevance and reliability is based on the accounting profession’s principle of conservatism, which emphasizes caution and prudence in financial reporting (IASB 2018, §2.16).

There are few exceptions in which internally generated IC can be capitalized, which differ depending on the adopted framework (Zéghal & Maaloul, 2011). IAS 38 (2004, §35) outlines a process for the recognition and measurement of IC, where the potential for generating future economic benefits is a key factor. The standard describes the various stages of the creation of IC and determines whether it is feasible to predict future economic benefits at each stage (Zéghal & Maaloul, 2011). Computer software development costs, for example, can be capitalized if they pass the technological feasibility tests and the asset thus proves its capacity to generate revenue. The expenses that are incurred to establish technological feasibility of a product are considered R&D under IAS 38 (2004, §43) and should be expensed as they are incurred. However, the expenses that are incurred after the establishment of technological feasibility but before the product is released to the general public can be capitalized IAS 38 (2004, §57).

Another type of uncertainty relates to the contractual relation between the firm and its employees. In the case of protection of employees' skills and knowledge, Lev and Gu (2016) argue that companies face a control problem with their employees and their ideas, as they do not own them. This creates an issue of partial excludability, where investments made in training employees cannot be fully capitalized because other firms can benefit from the investment if the trained employees switch to their company. Therefore, there is uncertainty regarding the contractual relationship between the firm and its employees, making it difficult to capitalize on these intangible investments (Zéghal & Maaloul, 2011).

Internally generated brands, customer lists, and similar are rarely capitalized as they can be considered "any expenditure that cannot be distinguished from the cost of developing the business as a whole" and thus cannot be recognized as IC according to IAS 38 (2004, §64).

#### *2.1.1.3 Challenges in managing IC*

The accounting framework faces challenges in valuing IC, including problems with their identification, measurement, and control. Lev and Zarowin (1999) argue that the traditional accounting model, which is based on tangible assets, historical costs, and accounting conservatism, cannot fully assess new-economy companies.

The lack of recognition of value-creating resources in businesses leads to an understatement of the earnings and assets of companies with a high growth rate of IC and an overstatement of the earnings and assets of companies with a declining rate of IC (Lev & Gu, 2016). Except for research and development (R&D) expenses, most other expenditures related to IC are often consolidated within large expense categories, such as cost of sales and selling, general, and administrative (SG&A) expenses. This consolidation of expenses creates ambiguities for investors and other stakeholders trying to comprehend the details of IC expenditure (Lev & Gu, 2016).

#### *2.1.1.4 Accounting relevance of IC*

As the knowledge economy gained dominance, the relative value of tangible assets has decreased and been replaced by the value of IC. The significant gap between the total market value and total book value has invited extensive research on the explanation of hidden reserves or hidden value by accounting standard-setters and academics (Lev & Gu, 2016). Despite increasing regulations, the fundamental structure of accounting reporting has largely remained unchanged for over a century. The findings by Lev and Gu (2016) suggest, in part, that only 5% of the information in financial reports is relevant to investors.

Lev and Daum (2004) suggest that IC, by itself, does not bring value or growth to a company; it must be combined with other factors to do so. They also stress that management and other stakeholders of the company must have an increased understanding of IC's role in the value-creating system of the firm to improve performance and increase value. Hence, Lev and Daum (2004) argue that financial reporting should adopt a more holistic approach to provide stakeholders with information necessary to value the company's entire value-creating structure. Additionally, the authors emphasize the need for financial reporting to shift from being solely backward-looking to becoming forward-looking, as the value of IC is linked to the company's future income and growth.

#### *2.1.2 M&A and Firm Valuation*

The popularity of M&A as a business strategy has been on the rise in recent decades, according to a literature review by Hossain (2022) which discuss that M&A can enhance the performance of companies through various factors, including synergies, integrated management-strategy, company profitability, and market dominance. However, Hassan *et al.*

(2018) suggest that it is difficult to assess the success of M&A deals due to the fact that M&A motives are usually unclear and not well connected with the evaluation phase in an acquisition process. As management of acquiring firms does not clearly state objectives for particular acquisitions, and as motives for acquiring a firm are not always used to assess the outcome of the deal, it is difficult to determine whether a deal should be seen as a failure or success (Hassan *et al.*, 2018).

Further, in the field of M&A, research (Hassan *et al.*, 2016; Bauer *et al.*, 2014) has stressed the importance of an integrated M&A process and to view the process holistically. There is not one single success factor in the procedure of acquiring a firm, but rather the components' interdependencies are highlighted (Bauer *et al.*, 2014). Further, the value estimation has increased in difficulty in the M&A process due to both financial and non-financial factors affecting the parties involved, and the subjectivity of the valuation is deemed high (Hassan *et al.*, 2016).

Valuation models are employed by both internal and external stakeholders of a corporation for the purpose of evaluating a firm and its related assets' worth. Management personnel can utilize these models to gauge the impact of their implemented strategies on value creation, while external analysts can determine a reasonable value of the company or its shares. One method of valuation involves computing the present value of the projected future performance of a firm, discounted cash flow models. However, the most commonly used technique is to use valuation multiples (Johansson & Runsten, 2014).

### 2.1.3 Valuation of IC

“Valuation relevance is a behavioral definition of information usefulness, whereas value relevance is a statistical definition of information usefulness” (Flöstrand & Ström, 2006 p.580). The research of value relevance and valuation relevance often overlaps, and the umbrella term of value relevance often seems to capture much of the valuation relevance research. However, the distinction between value relevance and valuation relevance has been deemed important and thus the literature review has been structured accordingly.

### *2.1.3.1 Value relevance of IC*

The degree to which accounting information is connected to a company's stock price is referred to as value relevance (Flöstrand & Ström, 2006). Empirical studies have been conducted to examine this relationship, with some finding that the value relevance of accounting items, particularly earnings, has declined (Lev & Zarowin, 1999). They attribute the decline to the inability to recognize IC information of a company, leading some to even declare the "death of accounting" (Lev & Gu, 2016) in the light of increasing importance of IC in the new economy. The increasing discrepancy between a company's market value and book value has been cited as a contributing factor to this gap, with the explanation that although investments in IC may increase the future earnings of a firm, IC investments are usually expensed and therefore provide an undervaluation of the current earnings and book value of the company (Lev & Zarowin, 1999).

A recent study by Barth *et al.* (2023) investigated how the value relevance of accounting information has evolved in the new economy, but their results contradicted prior studies: they found no decline in combined value relevance from 1962 to 2018. However, Barth *et al.* (2023) found that new-economy relevant items such as intangible assets, growth opportunities, and alternative performance measures had increased in value relevance, which were items not included in subsequent studies' (Lev & Zarowin, 1999; Lev & Gu, 2016) models.

### *2.1.3.2 Valuation relevance of IC*

Valuation relevance differs from value relevance research since it is focusing on examining the usefulness of accounting information for users in the valuation process. It refers to the ability of accounting information to aid investors, analysts and other stakeholders in the valuation process (Flöstrand & Ström, 2006).

According to research conducted by Flöstrand and Ström (2006), non-financial information is considered relevant for valuation and is utilized by analysts in their reports. Graaf (2013) also concludes that market participants find IC valuable. The research studies the ways in which managers make use of IC in their corporate disclosure, highlighting its connection to financial disclosure and its role as a crucial link between financial numbers and reality. Graaf (2013) emphasizes that IC components are dependent on financial factors, and therefore treating

them as opposites does not serve a great purpose. Instead, IC should be viewed as a way to make sense of the financial numbers and help put everything into context. Without IC, all the financial information would be disconnected and difficult to understand (Graaf, 2013).

Furthermore, as the IC in companies continues to increase, there is a growing demand for the market to better understand and incorporate IC information into financial analysis, as emphasized by Holland *et al.* (2003). However, there are challenges in meeting these needs, and market actors must find ways to integrate IC information into their own value creation chains. Barriers such as knowledge, management control, and uncertainty can hinder the refinement of IC information within the information market's value-creating systems (Holland *et al.*, 2003). Additionally, according to Holland *et al.* (2003), pressure within the communities of financial management and analysts, both socially and culturally, exacerbates the issue. Moreover, time constraints, trends, and reporting cycles indicate that market pressure may limit the view of financial managers and analysts on what constitutes IC relevant information. Consequently, financial managers and analysts are only selecting parts of corporate information that are considered valuable at a particular time (Holland *et al.*, 2003).

Abhayawansa *et al.* (2018) adopt a performative perspective to study IC from analysts' viewpoints. The research suggests that IC elements are dynamic, constantly changing and have the ability to transform. It highlights that the value of IC for analysts is specific to the situation and context. The study indicates that IC properties are associated with firm value both directly and indirectly through interlinkages between other IC components, tangible assets, and financial capital. The meaningfulness of IC is found in each specific context and in relation to other entities present in the context. Additionally, the authors suggest that IC and financial capital are loosely connected, which can result in various possible linkages. The linkage between financial capital and IC is complex, and the way analysts link the two demonstrates the significance of using both the ostensive and performative perspectives on IC to understand financial capital (Abhayawansa *et al.*, 2018).

The disclosure of intangible assets in financial statements has been a topic of great interest and debate in the accounting field. A study by Brännström *et al.* (2009) suggests that even if IC is firm-specific, there might be a need for standardization of the categories in which to

disclose IC in order to increase the usefulness of financial statements. However, they also recognize the difficulties in doing so due to IC's complexity.

### *2.1.3.3 Valuation of IC in practice*

The challenge of measuring IC is a complex issue that impacts various professionals such as academics, accountants, and M&A advisors (Contractor, 2001). The value of an IC component is primarily based on its future use and can be estimated by considering several benchmarks such as replacement costs, opportunity costs, industry norms, and alternative options (Contractor, 2001). Quantitative methods can be divided into three basic concepts: cost, market, and income-based methods, with the latter being the most commonly used (Lagrost *et al.*, 2010). The income-based method attempts to project the future expected income flow and convert it to a net present value by applying an appropriate discount rate. While these methods are useful in many situations, they may not always be suitable, especially if some of the required data is not available or reliable (Lagrost *et al.*, 2010).

The key to valuation is estimating the cost or income stream associated with the IC in its new use at another company. However, some IC, such as the talent of software programmers and artists, are non-separable and cannot be transferred to another firm (Contractor, 2001). In such cases, the only way to acquire such IC may be to purchase the firm as a whole (Lagrost *et al.*, 2010).

## **2.2 Theoretical Framework**

### **2.2.1 A Performative View of IC**

This paper will adopt Mouritsen's (2006) performative view of IC, which stems from Latour (1986, 1987), as a theoretical lens to interpret the IC components identified in the empirical findings and analyze their connection to the process of value creation. This view of IC contrasts with the conventional focus in IC research, which adopts an ostensive view and addresses issues such as the difference between a company's market and book value and the belief that the gap can be explained by the contribution of IC to the firm's value. In an ostensive view of IC, the components of IC are considered fundamental, and their relative significance surpasses that of activities carried out by organizational actors. Therefore, research utilizing an ostensive approach aims to isolate IC from its context and identify and quantify its fundamental properties (Mouritsen, 2006). The approach has raised concerns among researchers (Mouritsen, 2003, 2006, 2009; Dumay, 2012). Specifically, Dumay (2012)

has criticized the notion of “grand theories” of IC, such as the idea that IC can explain market-to-book value disparities. Instead, scholars (Mouritsen, 2003, 2006, 2009; Dumay, 2012) have suggested that research on IC should adopt a performative perspective, which investigates the connections between the different components of IC and the causal relationships among people, processes, and stakeholders. According to Mouritsen (2006), a performative approach is a suitable method for conducting an analysis which considers the intricate role of IC in various organizational practices. Therefore, we will utilize this approach in our research.

While the ostensive view sees “value” as a noun, the performative view sees it as a verb, i.e. value as a process of “valuing”. A performative view of IC, according to Mouritsen (2006), enables IC components to gain their identity through their relation with other entities and in relation to the specific concerns and situations of the firm. IC carries out different functions in different firms and situations, and there is not one fundamental formula, as in the ostensive view, to analyze the role of IC. Hence, the performative view goes beyond the more traditional view of the value of IC and opens up for the examination of the process of creating value. It suggests the examination of actors’ relation to IC and how they draw upon IC components in their actions and value-creating processes. It treats IC as input and as a means to transform a firm’s business model and is therefore useful for investigating the process of value creation (Mouritsen, 2006). Based on this, the paper will adopt the performative view as a lens to understand the function of IC, its location, and its relationship to value. This will be conducted using two key concepts within the performative view, namely disentanglement and overflow.

## 2.2.2 Concepts Within the Performative View

### 2.2.2.1 *Disentanglement*

Recognizing an asset requires recognizing its separation from other resources. The process of separating an asset from its complementary role in the firm’s production process is referred to as disentanglement. As a result, the asset is transformed into a different form, stripped of their activities, represented by numbers on paper, and are no longer in action but put on hold (Mouritsen, 2009). The process of disentanglement in relation to IC can be understood as the way of making an IC component visible. Spreadsheets or accounting systems which identify assets by giving them a number are ways to withdraw the asset from its original context and put them on hold and enable them to be studied and examined without their related

substances. This process is further mobilized by institutions, for example by accounting principles, and these are also the only criteria which emphasize the aim to disentangle assets from its context and hence it is the origin from where the concept has gotten its strength (Mouritsen, 2003). Assets that are classified as “on hold” can be distinguished from entangled resources, also known as “in-action assets”. These assets are difficult to define and assign a specific value to since they represent a collective performance and comprise a bundle of assets that must be comprehensively understood and examined. According to Mouritsen (2003), they must be understood in their own setting as they are entangled not just with other assets but also with the specific practices and long-term vision of the firm.

Furthermore, the more resources are disentangled, the more they are transformed into something quite different from their original form, governed not by the logic of asset complementarity, but by institutional rules found outside the complementarity framework. The significance of disentanglement lies in the fact that the more a resource is separated from its entangled form, the more it becomes distinct from the original materials that gave it its power and action (Mouritsen, 2003). The re-entanglement of assets on hold is connected to the process of intervention, which occurs when actors mobilize assets on hold and entangle them in ongoing processes, using personal knowledge to make sense of measurements and add perspective to them. Hence, when intervention occurs, assets become entangled in new ongoing processes of activity (Mouritsen, 2009). Here, Mouritsen (2009) implies that the measurement of IC is, to some extent, useful as it enables actors in the organization, through intervention, to interpret the measurement and make choices based on their interpretation of the measurements, which further results in new activities and processes being put in motion.

#### *2.2.2.2 Overflow*

Another concept intertwined with disentanglement is the concept of overflow. In its essence, overflow is about how much a phenomenon relates to other phenomena, hence there is a large amount of overflow when there are several ways in which an asset can be interpreted and enacted upon. Tangible, and more conventional assets, therefore have relatively little overflow as the institutions have a clear interpretation of their values based on their long history, and hence have an ability to understand them. The connection between the asset and the institution which has produced it is clear and therefore the overflow is minimal. This can be contrasted by the relatively large overflow connected to recognized IC values such as brands and patents. Even if the guidelines of the inscription of these assets are clear, how to

acknowledge the value of the assets is less so. The newly recognized IC components can move in several directions and can, for example, be coupled with other assets or be seen as elements of a value-creating activity where they vanish. The recognized IC assets do not have as clear connection to institutions as the conventional assets, and hence the overflow is much larger (Mouritsen, 2003).

Furthermore, the overflow is largest in connection to entangled bundles of assets or resources. These cannot be detected in a clear way as they rather work in relation to one another and are dependent on their specific context. Hence, actors in the market have difficulty identifying how they work and even, to some extent, identifying their existence. In terms of entangled resources, there is thus a need to separate them as this is a way – perhaps the only way – to make them manageable. Therefore, as previously discussed, disentanglement is somewhat indispensable (Mouritsen, 2003).

### **2.2.3 Application of the Theoretical Framework**

This paper applies a performative view with above-mentioned related concepts in order to study how IC components are connected to one another, are visible in the process of value creation and are used within processes and by organizational actors. Therefore, this paper adopts the performative view of IC to frame the use and valuation relevance of IC in an M&A process. It will be applied as a second-order analysis to interpret the empirical findings.

## **3 Research Methodology**

### **3.1 Research Approach**

The research in accounting has evolved from being dominated by quantitative research to a pluralistic discipline that includes qualitative approaches in certain accounting disciplines. It is encouraged to further extend the use of qualitative research approaches in the field of accounting and also in its sister field, finance (Lee *et al.*, 2006). Even though qualitative research has been conducted in the field of valuation relevance, the body of research is not extensive.

Hence, in order to contribute to the research field, a qualitative approach adopting the performative view has been chosen. A case study approach has been selected since it is a commonly used technique in the field of accounting research (Ryan, 2002) and allows for an

in-depth analysis. As this study aims to investigate the behavioral information usefulness of IC components throughout all phases of an M&A process, a single case study approach will be conducted to minimize the risk of losing analytical depth. Additionally, the study will take a holistic approach rather than a more traditional positive empirical approach, as it is better suited to examine accounting practices in the broader organizational context (Ryan, 2002).

### **3.2 Data Collection**

The primary source of data for the research is interviews with executives and managers of our case company, along with relevant documents related to their acquisition procedures as well as a recent acquisition. Various sources of data were used as it is deemed beneficial when conducting a case study (Ryan, 2002). More in-depth description of the data and its collection follows below.

#### **3.2.1 Interviews**

##### *3.2.1.1 Semi-structured interviews*

The interviews with representatives from our case company were conducted using a semi-structured approach, which is a common method in qualitative research (Alvesson & Deetz, 2000). This approach involves a prepared set of questions based on identified themes, along with probes to elicit detailed responses (Qu & Dumay, 2011). Semi-structured interviews allow for flexibility and detailed information to be gathered, making it a suitable approach for exploratory studies like this one. As the aim of this research is to gain an in-depth understanding of the role of IC in the case company, a semi-structured interview approach was deemed appropriate.

##### *3.2.1.2 Sample selection and initial contact*

Given the rise of the knowledge economy, and the increased accumulation of IC, the technology sector was considered interesting. Further, a company within the technology sector that acquires other companies would be appropriate as this would allow for examination of an M&A process in depth, and would enable the obtainment of both disclosed and undisclosed IC information. This would facilitate and deepen the investigation of the valuation relevance of IC in an acquisition process and the role of IC in the case-company's value-creating system.

The name of the case company in question will not be stated and will throughout the paper be called Alpha. Alpha was the first company to be contacted and was chosen on the basis of initial desktop research, which disclosed that the company primarily acquires software and consultancy companies as part of their business model. They also conduct in-house due diligence and valuations and possess, and consistently acquire, a large amount of IC. Alpha is a listed large-cap company operating globally, and it is highly integrated with its subsidiaries, playing an active role in driving organic profit growth. Alpha's organizational structure is furthermore decentralized, allowing for individual business units to operate with a high degree of autonomy.

In the selection process of representatives, individuals who possess a comprehensive understanding of the valuation process in Alpha, as well as expertise in accounting for IC, were prioritized. Consequently, the Head of M&A and the Head of Financial Reporting and Treasury were interviewed. Moreover, in order to attain a more comprehensive understanding of the perceived drivers of value in acquisitions, Division Executives were selected. The intent was to garner their strategic perspective regarding the extent to which IC influences the selection of target companies and what role IC has in the integration phase.

#### *3.2.1.3 Interview context and techniques*

Due to the global nature of Alpha, geographical limitations prevented consistent circumstances for conducting interviews. Although several interviews were done in person, the majority of them were conducted online. In total, eight interviews were conducted, ranging from 40-75 minutes in length. Two interviewers were present at all interviews, with one taking the lead and directing the conversation while the other reflected on the respondent's answers and came up with appropriate follow-up questions. All interviews, except the introductory one, were recorded, allowing both interviewers to actively participate in the discussion and ask questions. An exhaustive list of the interviews can be found in *Appendix A*.

#### **3.2.2 Documents**

The majority of the documents collected for analysis were related to one of the recent acquisitions made by our case company. The target company will remain anonymous throughout this study and will be referred to as "Gamma". In total, nine documents were

collected, including the Purchase Price Analysis (PPA), calculations and financial spreadsheet material related to Gamma, board material, information memorandum from the target company Gamma, and an M&A playbook describing the steps and strategies of an acquisition by Alpha. A detailed list of the documents can be found in *Appendix B*, many of which are classified. The documents have served both as data in themselves, and as material that was used during the interviews in order to ask specific questions regarding, for instance, the acquisition of Gamma.

### 3.3 Data Analysis

#### 3.3.1 Initial Analysis

All interviews were followed by discussions between the authors of the thesis, which was the first step in analyzing the data collected. As most of the interviews were recorded, this facilitated transcription, allowing for a more thorough examination of the responses according to Bryman (2008). Therefore, all interviews were transcribed. Documents were analyzed simultaneously with the transcribed interviews and, as previously mentioned, they also served as material for in-depth questions during the interviews. When most of the data were collected, information obtained from both interviews and documents were categorized based on our framework composed of the MERITUM (2002) classifications of IC and Hassan *et al.*'s (2016) business evaluation process, in order to structure the data. This was first mapped out in an excel sheet and later developed into our empirical findings. Hence, the constructed framework serves as the first-order analysis which will be further described below.

#### 3.3.2 First Order Analysis

The first order analysis follows previous research in the field of valuation relevance (Holland, 2003; Brännström *et al.*, 2009) and utilizes the MERITUM (2002) classifications of IC, which Graaf (2013) refers to as one of the classical frameworks of IC reporting. The framework is merged with Hassan *et al.*'s (2016) three-stage business evaluation process to create a lens for identifying the IC components in an M&A process. This framework is applied to structure the data in the empirical findings section of the paper.

Hassan *et al.* (2016) address an M&A process holistically by analyzing the business evaluation process, and looking into the process as a whole without decoupling and selecting

certain parts of the M&A process for investigation. The model adopted is a three stage model composed of *selection of a target firm*, *valuation of a target firm* and *performance assessment*. The first stage looks into the acquiring firm characteristics; such as objectives of the acquisition, the target firm's characteristics; such as potential, and impact assessment and the M&A layout; such as selection parameters. The second stage is looking into the valuation process composed of valuation parameters, determination, implementation and approval. Lastly, the third step looks at the assessment process, and sets the objectives defined in the first stage against the result of the second stage (Hassan *et al.*, 2016).

The strength of the model is the interlinkage between the different stages in the business evaluation process and the emphasis on the interdependencies between the different phases. As Hassan *et al.* (2016) argue, the interrelation between the components also takes into account their relative strength, as "a weaker sub-component has a direct bearing on the subsequent sub-component of the next component, thereby contributing to the overall strength of that component" (Hassan *et al.*, 2016, p. 258).

The business evaluation process, as defined by Hassan *et al.* (2016), will be employed in order to structure our findings. However, a specific articulation on the integration of a target firm will be added into the third stage in order to enable a clear analysis of the phase after the transaction is completed. Hence, the three-stage M&A process combined with the three classes of IC jointly form a useful matrix which is used in order to structure the data.

### **3.4 Research Process**

Initially, we adopted an ostensive approach to analyzing our data. We structured the IC as separate, according to the MERITUM classifications, and isolated each of the three phases of acquisitions. While this method was helpful in structuring and providing an initial understanding, we eventually realized that it did not accurately capture the value of IC in the way we had envisioned it. The approach led us to describe what IC is, rather than what it does. We felt that it neglected the actions, connections, and relationships that jointly allowed for value creation. The realization that IC is not a static entity but rather a dynamic process of value creation led us to theorize about performative approaches to researching IC. Thus, we were able to lend the performative view of IC its credibility by embracing the mere ontology that it aims to depart from.

Despite the contradicting ontologies adopted, we found value in initially having adopted an ostensive view of IC. This approach aided us in organizing large amounts of data and helped us recognize the need for a performative approach, which can allow for deeper analysis. By adopting a performative view of IC, we acknowledge that the key to unlocking its true value may not lie in individual components in isolation, but rather in the relationships they share with other entities, and in the specific context and circumstances of the firm. The realization that emerged from our research process echoes the argument put forth by Abhayawansa *et al.* (2018) regarding the necessity of acknowledging the need for conducting both ostensive and performative research. This duality, as we have come to appreciate, offers a more nuanced and insightful perspective that effectively captures the intricate and multifaceted nature of the phenomena we seek to study.

## **4 Empirical Findings**

### **4.1 Background**

#### **4.1.1 M&A Playbook**

Alpha's M&A playbook consists, in broad terms, of a three-step process: the preparation phase, live transaction phase, and post-completion phase, all of which differ in intensity and where internal roles, responsibilities, and ownership vary (see *Figure 1, Appendix C*). The former consists of candidate identification, in-depth discussion, and indicative valuations, as well as the investment hypothesis and post-completion plan. It is a long-term, low-intensity process co-managed by the M&A department, divisions, and subsidiaries, with the M&A unit focusing on coordination, and divisions and subsidiaries on idea generation, candidate identification, and external relationships. The live transaction phase involves writing a letter of intent (LOI), performing due diligence, the creation of a share purchase agreement (SPA), and board approval. It is mainly overseen by the M&A function, with close involvement of divisions/subsidiaries during the typical two-month process. Following completion, the post-completion phase begins, with divisions and group companies taking responsibility for executing previous post-completion plans to ensure successful integration (*Document 1*).

#### **4.1.2 Acquisition Strategy**

Acquisitions play a vital role in Alpha's strategy, many of which are made through long-term nurturing of relationships. Their long-term acquisition strategy emphasizes complementing

existing operations and expanding market presence by either strengthening businesses geographically or adding new offerings in existing markets. Successful acquisitions need to prove a profitable business model, strong leadership with shared values, and a culture of simplicity and entrepreneurship (*Document 1; Document 2; Interview 1; Interview 2*).

## 4.2 Phase 1: Selection of Target Firm

### 4.2.1 IP, Human Capital and Knowhow

It became clear that internally generated IP is one factor that is crucial when identifying potential prospects (*Interview 3*). This is also evident from the M&A playbook (*Document 1*), which highlights the internal criteria for firms to be considered.

The Division Executive identified structural capital as one key component during the first phase, along with other IC components, mainly in relation to establishing an indicative price. The target firm argues for a higher price, usually based on IC, in terms of customer relations, in-house competence, and internally generated IP.

“A seller believes they have an increased added value in the internal competence of the company, or in the customer relations or in the product for that matter. We often hear that ‘sure, we might not make a lot of money but that is because we invest [...] in our employees instead or [...] R&D to increase market share and growth.’ Sometimes, the arguments are valid, and sometimes they are sales pitches” (*Division Executive, Interview 4*).

Much like the target firms they seek to acquire, Alpha places significant emphasis on investing in human capital. Specifically, Alpha evaluates the target firm’s leadership and culture, giving consideration to shared values, simplicity, and an entrepreneurial spirit (*Document 1, Document 2*). Hence, human capital is an essential factor in the process of selecting a target firm. This was further confirmed during the interviews, by both the head of M&A and the two Division Executives:

“Cultural matches are important. We want it to feel good and usually we wish that the seller will continue to run the company, at least during a transitional phase, and then it is very important that we share the same values” (*Head of M&A, Interview 2*).

“I would say that we will not buy a company which does not share the same values as ours, or if we believe they would not thrive in the Alpha Group” (*Division Executive, Interview 4*).

“During an acquisition, one also acquires culture and personnel [...] of course this is essential” (*Division Executive, Interview 8*).

Further, human capital was brought up as becoming more essential in the acquisition process and which the Division Executive believes to be an emerging valuation relevant factor.

“An established actor who wishes to be at the forefront might have to acquire competence to obtain organic growth. [...] [I]t comes with new trends which one has to obtain. [...] Reasonably, one will value relevant competence higher in the future” (*Division Executive, Interview 4*).

In connection to the rapid development in the industry, one might have to acquire competences, not products. In his view, that would mean that the main factor which makes a firm interesting and which determines the price would be the firm’s competences.

#### 4.2.2 Several Years of Relationship-Building

The interview with the Division Executive revealed a strong emphasis on external relations in the phase of selecting a target firm:

“The most common is that you build a relationship with an entrepreneur or a company owner for a long time, and then one beautiful day when they are ready to sell you are there [to buy]. ...that is why I, in the early stages [of the M&A process], work mostly with nurturing relationships and establishing new ones“ (*Division Executive, Interview 4*).

The process can take several years, and Alpha usually follows companies for a long time. Sometimes, an acquisition is proposed from a broker, but this is rare and the largest emphasis is put on relational capital in the form of relation building. In the specific acquisition case Gamma, the discussion period was around eight years before a LOI and the due diligence process began.

Further, relational capital is mentioned as sometimes being the main reason for finding a target valuable:

“One has different driving forces for different acquisitions [...] [In one case] we wished to move customers to other more modern solutions; it’s a part of the business plan besides shutting down offices and cutting personnel. But, of course, [this is] not something we communicate in the acquisition process” (*Division Executive, Interview 8*).

As evident, in some instances, the sole purpose of an acquisition of a competitor is to acquire the customer base as part of the business plan, although this is a strategy Alpha does not wish to reveal to the target firm.

### 4.3 Phase 2: Valuation of Target Firm

Once the selection of a target firm has been made, the live transaction phase begins. The firm valuation is mainly based on multiples of EBIT or EBITDA. Alpha has a general guideline of paying a multiple of 5-7, and that this range usually depends on factors such as internally generated IP. The Head of M&A also describes that sometimes EBITDA-CD<sup>1</sup> is used when the target company in question has a large amount of internally generated IP. “It is in cases when you capitalize development expenses that EBITDA-CD becomes relevant to apply” (*Head of M&A, Interview 2*). Hence, EBITDA-CD is used as it adjusts for capitalized development expenses and is a way to reduce the price tag. Further, the due diligence plays a crucial role in the second phase as it is meant to “verify the valuation” (*Head of M&A, Interview 2*) of the indicative offer.

#### 4.3.1 Valuation of Structural Capital

Given Alpha’s strong focus on acquiring structural capital in the form of software and systems, these assets are often subject to valuation. Additionally, “package services”, which estimate the value of a company’s know-how and routines, are sometimes valued. As the Head of M&A explains, “they want to put a value on their know-how and structured ways of doing things” (*Head of M&A, Interview 6*). She describes it as quite common in the valuation phase for know-how to be valued alongside typical structural capital.

Regarding valuation, the Head of Financial Reporting and Treasury explains that there are “well-established models and principles for how this should be conducted that are very detailed [...] to ensure that it is not a subjective valuation” (*Head of Financial Reporting and Treasury, Interview 3*). The Appraisal Foundation’s *The Valuation of Customer Related Assets*

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<sup>1</sup> Earnings before interest, tax, depreciation, amortization less capitalized development costs (EBITDA-CD)

was mentioned as guidance for such valuations at Alpha. Questions such as what the retention rate looks like, whether one believes customers will continue buying or end collaboration and what these patterns are, form the basis for the valuation of structural capital (*Document 7*).

Another factor that affects valuation is the relational capital embedded in structural capital, namely the type of customers and the target firm's relationship with them:

“If a target company sells to governments or municipalities, it is plausible to think that one could assume a longer amortization period [for the structural capital] than for a target company that solely sells to private customers, which is something that we take into account” (*Head of Financial Reporting and Treasury, Interview 3*).

The assumptions, such as the amortization period, were mentioned as sometimes being subject to conflict of interest. The presence of subjectivity sometimes led to internal pressure to alter some valuations to the benefit of Alpha: “me and internal stakeholders may have discussions where they may want things [not in line with frameworks], where I have to stand firm” (*Head of Financial Reporting and Treasury, Interview 3*). She highlights the need to be meticulous in following the established regulatory framework and to avoid overly optimistic assumptions. In the case of contract-based IC, Alpha amortizes them using set methods and cash flow predictions. Once the assumptions have been established, Alpha uses cash flow-based methods to value structural capital. The most common one is stated to be the MPEEM<sup>2</sup> method.

A target firm may sometimes possess both systems/software and customer bases. In such a case, “one needs to use two different [valuation] methods” (*Head of Financial Reporting and Treasury, Interview 7*). In the presence of both structural and relational assets, a cost-based method is stated to be applied on the former, and a MPEEM method on the latter. Alpha also mentions using the “relief from royalty method”<sup>3</sup>, although avoiding it is preferable given its complexity and subjectivity: “One has to look at comparable companies in the same industry, thus it is very theoretical [...] you almost need external help in order to arrive at a value” (*Head of Financial Reporting and Treasury, Interview 3*). In preparing the PPA, the M&A

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<sup>2</sup> The Multi-Period Excess Earnings Method (MPEEM) is a valuation technique that estimates the fair value of a business or intangible asset based on its ability to generate cash flow. It involves projecting future cash flows and calculating their present value by discounting them back to their current value.

<sup>3</sup> The Relief from Royalty method for valuing IP involves estimating the hypothetical royalty payments a company would need to pay if it had to license the IP from a third-party owner. This amount is then used as the basis for determining the value of the IP asset.

function works with the Division Executives to assess whether any acquired IC in the target firm will be of use for Alpha post-acquisition. If they determine that the value of, for example, software for Alpha is zero, the capital will not be part of the PPA – although it may be of value for the target firm:

“If we believe that the value is zero, then we do not consider it an asset. However, if there are still customers for the software and we see that there are still revenues generated from it, then we can say that it has some value, perhaps a few millions” (*Head of Financial Reporting and Treasury, Interview 7*).

The Head of Financial Reporting and Treasury continues by mentioning that some acquired structural assets are meant to be substituted by other products deemed better at generating value:

“[W]e may not continue to develop it but perhaps dispose it, so that current customers can continue to use it, but of course we want to make them use other [Alpha] products that we deem better” (*Head of Financial Reporting and Treasury, Interview 3*).

In this instance, whether the IC product possessed a monetary value was solely determined by Alpha’s planned use.

#### 4.3.2 The Inability to Value Human Capital

The complex nature of human capital has posed a challenge for the development of an accepted method for its valuation, “which someone has yet to come up with an accepted method for”. As she noted, although “human capital is often regarded as a company’s largest asset, [...] its accounting valuation is marginal in practice” (*Head of Financial Reporting and Treasury, Interview 3*). Despite this, she raised a thought-provoking question: if customer-related assets can be valued, why not employees, given that partial excludability also applies to customers, who have the ability to switch suppliers? However, she also recognized the issues with human capital valuation, particularly if it were to be capitalized. For example, during the financial crisis in 2008, the large impairments that would have been necessary to capitalize employee expenses would have caused “significant capital destruction” (*Head of Financial Reporting and Treasury, Interview 3*). Consequently, she concluded that it is not possible to value human capital, although she expressed a desire for such a valuation method to exist.

Following the IT crash in the late 90s and the financial crisis, she observed that the discussion had become less prevalent, and more emphasis was placed on prudence principles:

“I am wondering whether they [rules for valuing human capital] have been tougher [over the years]. The trend was Skandia leading the discourse on valuing human capital [...] I think that after the IT crash, in the early 2000s, that it went down [...] it went back to the hard numbers and to the tough worlds” (*Head of Financial Reporting and Treasury, Interview 3*).

The one instance in which human capital is assigned a monetary value in Alpha’s due diligence process is in the line item contributory asset charges (*Interview 3; Document 4; Document 6*), according to the Head of Financial Reporting and Treasury:

“When one does this MPEEM method, one looks at ‘contributory asset charges’, where one looks at the employees who work with the asset. Still, using it [human capital] in financial valuation is very marginal from an accounting perspective” (*Head of Financial Reporting and Treasury, Interview 3*).

Nevertheless, she emphasized that human capital is a crucial component in the acquisition process, and Alpha assesses it extensively to determine the value of the acquisition: “of course we assess it [the human capital] a lot and why we even do the acquisition in the first place, thus it is hugely important” (*Head of Financial Reporting and Treasury, Interview 3*).

When asked about the most valuable IC component in Gamma, she stated customer relationships, which amounted to 32% of the final price (*Document 2; Document 6*).

However, when inquired about the composition of the large goodwill component, which was 54% of the price paid (*Document 6*) and thus 67% larger than the value of the customer relationships, the majority of goodwill was attributed to the employees. According to the PPA, this was the largest IC factor which contributed to the final price tag.

From a pure strategic perspective, the Division Executive agreed, stating that human capital “is highly relevant”, not least in the case of acquiring Gamma:

“In the Gamma project, the focus was primarily on customers and employees, and their values were considered relevant, with the product being of tertiary importance. [...] However, it is evident that this differs from other projects where the product is the top priority, followed by employees and customer bases” (*Division Executive, Interview 5*).

When queried on the future significance of diverse human capital, the Division Executive highlighted the importance of organizations possessing a workforce capable of adjusting to a constantly evolving technological landscape. The Division Executive noted that non-financial factors would largely determine the valuation:

“Of course [...] if we [for example] buy an AI company with 20 people who possess high AI expertise [...] then we are truly buying the company for the competence, and suddenly the employees’ know-how is at the top of the valuation list. There, IC would determine the price to 90%” (*Division Executive, Interview 4*).

The Division Executive’s remarks imply that the identification and assessment of non-financial factors, including human capital, could potentially become more crucial in the valuation of companies, particularly expertise in specific areas.

#### 4.3.3 The Value of Relationships

The target firm’s customers are “almost always” subject to valuation practices, as the purpose of the acquisition is to “acquire firms that have a profitable customer base” (*Head of Financial Reporting and Treasury, Interview 3*). This is particularly evident when Alpha acquires resellers of various softwares and systems. As stated, the greatest separately valued IC component was relational capital (*Document 4; Interview 3*).

When structural capital is not valued by Alpha (if not deemed important) the corresponding customer relationships will either be rendered worthless or included in the PPA, depending on if they can be transferred to other Alpha products. If valued, the most common method Alpha uses to value customer-related capital is the MPEEM method.

#### 4.4 Phase 3: Integration and Performance Assessment

In the M&A strategy of Alpha, internal guidelines reveal that the phase of integration and evaluation does not have a significant focus, and the success of the acquisition is not separately evaluated. In addition, as the acquisition strategy of Alpha is to acquire companies which should, most of the time, continue their business as usual and be independent subsidiaries with support from the divisions of Alpha which they belong to, the integration is not stated to be of utmost importance (*Document 1; Document 2*). This was further confirmed by the Head of M&A;

“It is actually not a very structured process. Maybe after around 100 business days it is business as usual and of course you follow up the progress of the company but not more than how we follow up our other businesses” (*Head of M&A, Interview 6*).

The greatest part of the evaluation is made by the divisions, and the evaluation is mostly financial and looks into the growth rate of the acquired firms, along with some non-financial KPIs such as cNPS<sup>4</sup> and eNPS<sup>5</sup> (*Division Executive, Interview 5*).

#### 4.4.1 Misvaluation of Structural Capital

Concerning the evaluation of performance and misjudgments related to IC, the focus is on the product-related aspect of structural capital, particularly technical debt<sup>6</sup>. However, the consequences of such misjudgments are not clear-cut. Although technical debt can lead to risks such as customer dissatisfaction and supplier switching, it can also involve expenses related to development and direct labor that may result in revenue:

“There are both pros and cons with technical debt. Positive since it means it can result in development hours and maintenance work which generates revenue, but it also may result in risks as the customers may change to another supplier” (*Division Executive, Interview 5*).

Another Division Executive, also being CEO for one of Alpha’s subsidiaries, highlighted the importance of labor for generating revenue as well. He broke down the different revenue components, the largest contributor being products, followed by consultancy services and proprietary IP. However, when asked about how the company creates value, he noted that what provides value is not the single revenue-generating components, but rather their combination manifested in a complete solution:

“[We] make acquisitions because we wish to create a complete solution, that is how we provide value [...] we try to create a virtual twin, in other words, how we can help customers work smarter and develop the future of systems” (*Division Executive, Interview 8*).

The Division Executive furthermore mentioned that 80% of the revenue from the products was largely determined by the product development.

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<sup>4</sup> Customer Net Promoter Score

<sup>5</sup> Employee Net Promoter Score

<sup>6</sup> Technical debt refers to the cost of addressing issues related to outdated or suboptimal technology systems or infrastructure, which can impact a company’s future earnings potential and financial stability

#### 4.4.2 Incentives and Synergies

Additionally, a common misjudgment was on the human capital side, namely overestimating employees' inclination to stay after an acquisition:

“It's also possible to underestimate employees, and maybe not so much their competence, but more their inclination to stay, and you may have overestimated the importance of the leadership for other employees – for example, you may think that if the leadership stays, so will the rest, but that's not always the case” (*Division Executive, Interview 4*).

The misjudgment of such IC was mentioned to be reflected in the performance assessment of an acquisition, both in financial and non-financial targets (*Division Executive, Interview 4*).

In addition, incentive programs and earnout models are used to motivate key individuals at the target firm to stay after the completion of the transaction, such as owners and the CEO (*Document 9*). For example, in the case of Gamma, an earnout model was established (*Head of M&A, Interview 6*) which was discussed during the interviews. It was confirmed that the model was commonly used both to “bridge the price expectation” (*Head of M&A, Interview 6*) and to motivate owners to remain with the company. It was regarded as important for integration, as it gave Alpha a few years to get to know the company and slowly take over the business. Furthermore, the earnout model was seen as successful and an effective tool for retaining expertise in the company after a transaction was completed, but it was also seen as having some potential negative impact on integration.

“There is no guarantee but in 90% of the cases I would say it works really well. Incentives both for the entrepreneur to stay and also that they should aim to grow the business even further. Then, of course, this can fire back at the integration; that they focus too much on growth in revenues and not so much on the soft part which is important for the integration” (*Head of M&A, Interview 6*).

Further, as product offerings and solutions increase in complexity, human capital in the form of competence was defined as essential but also as scarce resource. Hence, activities in the value chain focused on creating synergies between subsidiaries:

“Many of the products we sell are complicated, and in certain countries we do not have sufficient expertise, thus it is largely about putting together the right team and gathering the right expertise for a

customer [...] We have a leadership program where personnel from different subsidiaries meet in person to share their knowledge and to build relationships” (*Division Executive, Interview 8*).

The events and leadership programs were also mentioned as being important for employee satisfaction, which is a KPI that in part was used to evaluate the success of acquisition, along with customer satisfaction. The latter was also calculated in the due diligence process and hence those numbers serve as a benchmark for further evaluation at later stages:

“In our evaluation processes, we mainly address financial factors, that is to say how the growth has been, but we also look at, for example, customer satisfaction. We check it every year and then since we also do it during the due diligence process we can compare the numbers” (*Division Executive, Interview 5*).

The annual customer satisfaction checks, coupled with the due diligence process, thus enabled the company to compare and assess their performance in this area over time.

## **5 Discussion**

### **5.1 The Valuation Relevance of IC in an M&A Process**

The art of acquisition is a complex and multifaceted process that requires rigorous planning and execution. In light of this, Hossain (2022) has argued that M&A have become increasingly popular among firms as a means of enhancing overall performance. Among them, Alpha has embraced M&A as a key component of its business model. Our study reveals that Alpha’s acquisition process is highly intricate, involving a strategy that prioritizes cross-phase communication and collaboration to ensure success, which potentially could be seen as an attempt to address the process holistically as defined by Hassan *et al.* (2016) and Bauer *et al.* (2014). However, our findings also highlight a lack of evaluation and routine in the final phase, indicating the challenge of determining the success of an acquisition, as previously noted by Hassan *et al.* (2018).

In Alpha’s acquisition process, the valuation of IC components is analyzed, and information related to factors such as cultural fit, internal systems, and customer bases is considered relevant when acquiring a company. Therefore, our findings contribute to the field of valuation relevance (Flöstrand & Ström, 2006; Graaf, 2013; Brännström *et al.*, 2009; Abhayawansa *et al.*, 2018; Holland *et al.*, 2003) by confirming that IC also possesses

valuation relevance for actors in the field of M&A. Furthermore, Alpha's valuation phase indicates a desire to measure and value specific IC components, such as IP and customer bases, which aligns with Holland *et al.*'s (2003) discussion of an increasing demand to incorporate IC into financial analysis. However, as previous research has suggested (Lev & Zarowin, 1999; Lev & Daum, 2004; Lev & Gu, 2016), current accounting models have difficulty assessing IC, which leads to a dilemma in capturing the value of IC. For example, our findings depict the inability to measure human capital, which results in a significant amount of goodwill in Alpha's acquisitions.

Furthermore, as depicted by our findings, the value of IC is found in its interrelation with other entities, actors, and the context in which it resides, which connects to research by Lev and Daum (2004) who highlight that IC components in themselves do not bring value to a company, but must be combined with other factors to do so. In the case of Alpha, when considering a target firm, not just one component is deemed important. For example, even if a firm has an ideal system that Alpha wishes to acquire, a company will not be considered a target if there is no cultural fit, if neither the target nor Alpha has a relevant (or large enough) customer base for the product, or if expertise to run and develop the system does not exist. Essentially, the value of an IC component is futile without the IC elements that enabled its emergence and sustenance. This further contributes to the findings by Abhayawansa *et al.* (2018) that IC's meaningfulness is found in each specific context and in relation to other entities present in that context, by extending the findings into the value-creating processes of M&A.

As the above highlights the complexity of IC and the impossibility to separate and categorize it without reducing its value, one could understand why Brännström *et al.*'s (2009) proposal to increase standardization and categorization of IC truly is presented quite vaguely. Based on our findings, one could question this proposal and argue that attention should be directed not towards developing a better IC reporting model, but rather towards a more comprehensive understanding of how IC operates within an organization's larger framework, with more holistic approaches to IC that consider its multifaceted nature and how it interacts with different aspects of an organization's operations and environment.

Following, this study has identified two main findings which contribute to the field of valuation relevance (Flöstrand & Ström, 2006; Graaf, 2013; Brännström *et al.*, 2009;

Abhayawansa *et al.*, 2018; Holland *et al.*, 2003) by providing a deeper understanding of IC complexity, and its valuation relevance in the value-creating processes of an acquisition. The two findings are discussed in detail in the following sections.

## 5.2 The Inconsistent Degree of Valuation Relevance

The valuation relevance of IC can never be ascertained from a performative view, as its relevance is determined by the interlinkages, actions, and context in which it currently resides. However, in an M&A process, our findings suggest that it is possible to establish its relative degree in one phase to another. This becomes visible through examining the degree of disentanglement and overflow throughout the acquisition process.

Firstly, the pre-acquisition phase emphasizes finding a company that follows a set of criteria internally established by Alpha, and emphasizes both a fit in terms of product, culture, and values of the target company. Hence, our findings are in line with Abhayawansa *et al.* (2018) that resources only have a value in their own context and in relation to other entities and actors. Our interviews indicate that Alpha was unwilling to compromise if some IC components were not deemed compatible, such as cultural fit. Thus, it is in the entangled bundle of resources of the target firm that Alpha finds value. Therefore, in the first phase, there are several ways in which an asset can be interpreted and acted upon. As a result, the prospecting phase is characterized by a significant level of overflow since the entangled bundles of assets are situated outside of institutional frameworks, in contrast to tangible assets or recognized IC components.

Moving on to the second phase, Alpha aims to value the target firm, sometimes using EBITA CD as an attempt to reduce the price tag. Hence, this can be argued to increase the market-to-book value, a discrepancy which Lev and Zarowin (1999) argue is largely captured by IC. However, in order to determine a price, it is imperative to reduce the complexity that arose in the first phase. Therefore, the disentanglement of IC components occurs in the valuation phase. Due to the high overflow arising from the complex bundles of resources identified in the first phase, it is necessary for Alpha to separate these assets in the due diligence and assign them a value in the PPA. This is done to translate them into an institutional language, so that actors who may not be familiar with their origins and values can understand and interpret them. By simplifying these complex, interdependent

components, their identity can be reduced to a monetary value. This further affects the relative degree of overflow, as the IC components become closer to the institutions when they are disentangled from their original context. Therefore, the overflow decreases relative to the first phase.

After emphasizing disentanglement in the second phase, the integration and evaluation phase is followed by a re-entanglement process. In this phase, organizational actors interpret the identified IC components to make strategic decisions and planning, combining on-hold assets with their own interpretations to create value. This is often manifested by providing a “virtual twin” – a complete solution for their customers. For instance, Alpha’s actors may leverage an acquired customer base for existing products in the Alpha group as they believe it will generate increased value for their customers. Hence, on-hold assets such as the customer base are re-entangled through intervention into a new context – the Alpha group – and gain new interactions with other entities and contexts not present before. Our empirical findings suggest that assets are transformed into new bundles of entangled assets that blur the distinctions between IC components, making it difficult to determine their future paths. The overflow increases and once again resembles that of the first phase. However, this re-entanglement also generates a new type of value for Alpha and its stakeholders as the target company’s value-creating activity is now intertwined with Alpha’s value-creating system. This allows for a re-integration of IC, thereby restoring its entangled state and possibly enhancing its value for Alpha and its customers.

In relation to the discoveries made above, the degree of disentanglement and overflow is found to vary between the different phases of an M&A process. This, in turn, is further found to relate to the relative degree of valuation relevance of IC. The first and second phases acknowledge the complexity of IC and the fact that not one single component is deemed to have value in itself, but rather the bundle of entangled assets is considered valuable. Hence, the value of IC is found in its entangled form and in the complexity and value-creating processes of a firm. This can be contrasted with the disentanglement in phase two, which separates the IC components identified from their context, and where the parties involved observe IC in their disentangled state. Thus, the overflow decreases as the IC components are easier to communicate and become closer to the institutional setting. As separate IC components bring little value in themselves, this disentanglement implies a lower valuation relevance of IC relative to that of the first and third phase, as the interconnections between

the resources have been taken away. Instead, it is in the first and last phase, in the interlinkages and in the complex bundles of entangled assets where the true value of IC is visible and where the valuation relevance of IC truly lies.

We contribute to the literature on M&A (Flöstrand & Ström, 2006; Graaf, 2013; Brännström *et al.*, 2009; Abhayawansa *et al.*, 2018; Holland *et al.*, 2003) by demonstrating that the degree of disentanglement and overflow varies across different phases of an M&A process, which affects the valuation relevance of IC. In this way, we not only extend the finding that non-financial information is useful for market actors to the field of M&A but also shed light on how the M&A process can reveal the relationship between disentanglement, overflow, and the valuation relevance of IC.

### **5.3 IC as the Determinant Between Value Creation and Value Destruction**

Through our findings, we nuance Abhayawansa *et al.*'s (2018) discovery that IC is dynamic and has the ability to transform, by showing that capital resources can undergo a transformation from assets to liabilities. Our findings disclose that an IC component that was once a generator of value in one context can, in another context, become an intellectual liability. In an acquisition process, our research on Alpha indicates that this transformation can take shape in two different ways. Firstly, it is visible through the process of disentanglement, when actors within the value-creating procedures of Alpha withdraw an asset from its operational setting. For example, when an acquired system is deemed useless and gradually becomes replaced by another internally generated system deemed more capable of generating value, a transformation takes place. This decision to replace an asset is usually made in alignment with Alpha's strategy. For instance, the aim of the acquisition might be to gradually transfer the target's customers to other products within the Alpha Group that are deemed better and more value-creating than the systems acquired. However, the system acquired might have to be maintained due to its existing customers, making it a liability to Alpha, in turn slowing down the transition.

Secondly, the transformation of capital can emerge after a re-entanglement process, that is to say, after the target company is integrated into the Alpha group. Our interviewees referred to these emerging value-destructors as "misjudgments", exemplified by overestimating the likelihood of workforce retention. This type of overestimation could be directly linked to a

negative impact on financial performance as the target company's business was highly dependent on its previous leadership and employees. Another frequent misjudgment was the overvaluation of a system, which resulted in technical debt and negatively impacted the financial performance. Hence, this exemplifies that assets were transformed after the target company's resources were re-entangled into its new context, the Alpha Group, and underwent a transformation from asset to liability.

However, whether the emergence of technical debt became a liability or a value-creating asset for Alpha was twofold. The additional labor required to address the technical debt sometimes resulted in increased invoice costs and therefore revenue, hence it became a value-creating resource for Alpha. This finding highlights that IC is contextual and, above all, reliant on the perspective of the engager, which further nuances the findings by Abhayawansa *et al.* (2018) that the meaningfulness of IC is context-specific. The findings indicate that in the setting of M&A, resources are in constant movement and their degree of valuation relevance is constantly changing based on which entities and which context they are engaging with. In this instance, when a resource is transformable and can vary between being an asset or liability, IC is the link to reality, and therefore we also extend the findings by Graaf (2013) which highlight that IC is the extension between financial numbers and reality. Our findings suggest that not only is IC the linkage between these, but it also links resources to outcomes and company performance: IC could be the determinant between value creation and value destruction.

## 6 Conclusion

### 6.1 Concluding Summary

Exploring the significance of IC and its role in the value-creating system in a knowledge-based economy, this research delved into an acquisition process, uncovering two main findings.

Firstly, from a performative perspective, the valuation relevance of IC can never be determined, as its relevance is driven by the interlinkages, actions, and context in which it is present. However, this research highlights that in an M&A process, it is possible to establish the relative degree of disentanglement and overflow and its connection to the valuation relevance of IC, if seen in relation to the M&A process's corresponding phases. In the first and third phases, the actors of Alpha see the value of IC in its entangled form and hence find the value in the complexity of entanglement. The valuation phase, however, requires disentanglement that simplifies IC into measurable and actionable numbers, which decreases the valuation relevance of IC in relation to the first and third phases, as the IC components have little value when drawn out of their context. However, this phase is crucial in enabling mobilization, which allows for the re-integration of IC, thereby enabling value-creating activities to be enhanced in the third phase, in an attempt to make an acquisition successful. With this finding, we contribute to the valuation relevance literature (Flöstrand & Ström, 2006; Graaf, 2013; Brännström *et al.*, 2009; Abhayawansa *et al.*, 2018, Holland *et al.*, 2003) by deepening the understanding of IC's role in value-creating processes and the dynamic value which IC has in an M&A process.

Secondly, the findings nuance Abhayawansa *et al.*'s (2018) discussion that IC is transformable, since in an M&A process, a resource can be transformed from being an asset to becoming a liability. We also extend Graaf's (2013) findings that IC can be viewed as the link between financial numbers and reality. Instead of viewing IC from the perspective of external analysts, we have discovered how IC can work as a link between financial information and reality within a firm's value-creating processes in an acquisition process. In this setting, IC is not just a link to reality but also the determinant between value creation and value destruction.

Thirdly, this study provides a broader contribution to the field of valuation relevance (Flöstrand & Ström, 2006; Graaf, 2013; Brännström *et al.*, 2009; Abhayawansa *et al.*, 2018; Holland *et al.*, 2003) by demonstrating the value of IC for actors in the context of M&A. This research deepens the understanding of IC's role in value creation processes and challenges the conventional research paradigm on IC by exploring its valuation relevance from a qualitative, performative perspective, thereby departing from the vast amount of quantitative research on value relevance. In doing so, this study responds to Zegal and Maloul's (2021) call for more qualitative studies and adds to the value relevance field, which includes works by Lev and Zarowin (1999), Lev and Daum (2004), Lev and Gu (2016), and Barth *et al.* (2023). Additionally, this study acknowledges the contribution of Abhayawansa *et al.* (2018) in prompting more research that takes a performative view on IC, by adding more research to this field. Furthermore, this paper represents an addition to the under-researched domain of IC in an M&A process, a domain which is gaining increasing attention.

## **6.2 Future Research**

We have identified three areas for suggested future research. Firstly, we encourage further research to embrace the performative view of IC and to continue to study its role in value-creating processes in other settings. Secondly, the valuation relevance of IC could be extended further in the field of M&A. As our research has adopted a buyer's perspective, further studies could explore the valuation relevance of IC from the target firm's perspective, i.e., the sell-side, in its corresponding phases. Thirdly, we encourage the exploration of developing mechanisms to understand the larger context in which IC operates, and not merely of current IC reporting models that perpetuate the ostensive view of IC.

## **6.3 Final Thoughts**

Observing dark matter with the eye is impossible, and any attempt to develop tools to do just that will likely be unsatisfactory. Instead, dark matter can be observed by how it interacts with and affects its surroundings. Similarly, IC is the dark matter of finance, and any attempt to separate and simplify it into actionable numbers through an ostensive approach will be insufficient in capturing its true value. Therefore, consistent with Abhayawansa *et al.* (2018), who emphasize the importance of appreciating both ostensive and performative research, we acknowledge the need to view IC components not as entities possessing values in themselves, but rather as entities whose value resides in the web of interrelatedness in which they operate.

Our research process, which developed into embracing different ontologies, furthermore proves the value of acknowledging these, as it enabled us to establish the relative degree of disentanglement throughout the M&A process, and discover its connection to the valuation relevance of IC. This was deemed to be relatively higher during early and later stages of an acquisition process, and relatively lower during the valuation phase, again demonstrating the vast complexity of valuing IC. It seems the key to unlocking the true value of IC does not lie in the eye of the observer, but rather in the hands of the interactor.

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## Appendices

### Appendix A

*Table of interviews conducted*

Interview no.	Job title	Company	Recording mode	Length (hhmm)	Date
Interview #1	Chief Financial Officer, Head of Financial Reporting and Treasury, Head of M&A	Alpha	Notes taken	01:15	28/02/2023
Interview #2	Head of M&A	Alpha	Audio recorded	01:15	06/03/2023
Interview #3	Head of Financial Reporting and Treasury	Alpha	Audio recorded	00:59	14/03/2023
Interview #4	Division Executive #1	Alpha - X Division	Audio recorded	00:44	27/03/2023
Interview #5*	Division Executive #1	Alpha - X Division	Audio recorded	00:42	05/04/2023
Interview #6*	Head of M&A	Alpha	Audio recorded	00:41	11/04/2023
Interview #7*	Head of Financial Reporting and Treasury	Alpha	Audio recorded	00:41	14/04/2023
Interview #8	Division Executive #2 (subsidiary CEO)	Alpha - Y Division	Audio recorded	00:47	25/04/2023

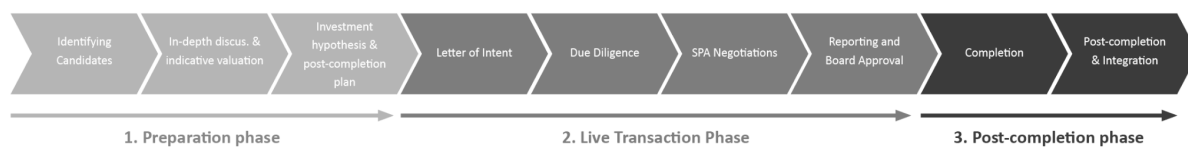
*\* Second interview with the same interview subject, excluding introductory meeting*

## Appendix B

### *Table of documents*

Document Name	Document Title	Document Type	File type	Pages	Confidentiality	Description
Document 1	M&A Playbook	Internal	Power Point	2	Confidential	An overview of the different stages of Alpha's acquisition process
Document 2	Annual Report 2022	Annual Report	PDF	128	Public	The Annual Report of Alpha 2022
Document 3	Information Memorandum, Project Gamma	Information Memorandum	PDF	50	Confidential	An information memorandum on Glomma prepared by an investment bank
Document 4	PPA Gamma	Purchase Price Allocation	Excel	N/A	Confidential	The purchase price allocation of Gamma
Document 5	Project Gamma	Board Material	Power Point	24	Confidential	The proposal of acquiring Gamma covering e.g., a business presentation, summary of the financials and due diligence, commercial, technical, legal, tax and HR to be presented to the Board
Document 6	Acquisition Analyses	Internal	Excel	N/A	Confidential	Includes calculations for the acquisition cost of shares, the total goodwill value, the distribution of the total goodwill value, and acquisition elimination.
Document 7	Appraisal Foundation Board VRF Advisory 2: The Valuation of Customer-related Assets	Internal valuation guidelines	PDF	116	Public	A publicly available handbook that guides Alpha in its valuation practices of customer-related assets
Document 8	Calculation of Acquired Equity	Internal	Excel	N/A	Confidential	Includes calculations of the acquired equity of the target company Gamma.
Document 9	Valuation of EV and EBIT Multiples – Example	Internal	Excel	N/A	Confidential	Includes an internal example of EV and EBIT multiples calculations as well as an earnout model for a hypothetical target company

## Appendix C



*Figure 1: Alpha's M&A Pipeline*