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The production of strategic and financial rationales in capital investments: Judgments based on intuitive expertise

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ABSTRACT

This paper's aim is to examine how strategic and financial rationales are produced in strategic capital investments. Informed by literature on capital investments, strategic fit, and intuitive expertise, the study examines the production of strategic and financial rationales and how they are related. This is done by conducting a detailed case study of how these rationales are described in decision documents and how the documents were produced. The setting is an acquisition by a large, successful serial acquirer.

The analysis reveals how the production of strategic and financial rationales is based on judgments of a myriad of data using rough estimates. We argue that these judgments are made through an intuitive process based on expertise. The study contributes to the literature by surfacing individuals' intuitive expertise as an important 'hidden' activity of judgment in strategic investment decision-making. Thus, the study shows, and brings theoretical underpinnings, to how the presence of expertise and the character of the tasks can result in appropriate intuitive judgments positively affecting strategic investment decision-making.

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1. Introduction

"There is a strategic fit – Lanxess already operates in Chemtura's key segments – while the financial terms look inexpensive when taking account the headline synergy number" commented analysts at Barclays regarding the acquisition of Chemtura by Lanxess (McGee, 2016). The quote is typical for how financial analysts, as well as the acquiring company, comment on the existence of a strategic fit when an acquisition is announced. Without a strategic rationale, it is almost impossible to argue that there is a financial rationale. An acquisition is in other words a strategic capital investment (Alkaraan & Northcott, 2006; Carr, Kolehmainen, & Mitchell, 2010; Carr & Tomkins, 1996; Harris, Emmanuel, & Komakech, 2009) and a critical task for an acquirer is to assess the attractiveness of a possible acquisition. As with other strategic capital investments (Carr, 2005; Carr et al., 2010; Carr & Tomkins, 1998; Harris et al., 2009; Slagmulder, 1997), two key tasks are, as the quote suggests, assessing the strategic fit and assessing the economic value created by the investment. These tasks are instrumental when producing the approval documents in which the reasons for justifying the capital investment are presented.

In line with earlier literature, this paper will focus on two groups of reasons for making a capital investment: strategic rationales and financial rationales (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006; Carr et al., 2010; Carr &

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Tomkins, 1996, 1998; Harris et al., 2009; Shank, 1996; Slagmulder, 1997). Even though these two rationales have been dominating the field for a long time, we have limited knowledge about how strategic and financial rationales are produced and how they are related to each other. For example, when studying what tools (i.e. techniques and methods) firms apply to value capital investments, the cash flows used in the valuation are taken for granted, leaving the task of producing cash flows unexplored (see Shank, 1996). As valuation outcome is highly dependent on the quality of the cash flows used, it is vital to understand how these financial rationales are produced.

Furthermore, in the capital investment literature strategic rationales have primarily been discussed in relation to what tools, e.g. value chain and market analysis, are used in capital investment decisions (Alkaraan & Northcott, 2006; Carr & Tomkins, 1996, 1998; Shank, 1996), and what emphasis is placed on strategic rationales versus financial rationales in investment decision-making (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006). Thus, the literature provides limited insight into the production of strategic rationales and the linkage to financial rationales. This is surprising, as strategic research has shown that acquisitions can add value through strategic fit, i.e. relatedness in the form of similarities and complementarities between two firms (e.g., Kim & Finkelstein, 2009; Larsson & Finkelstein, 1999; Palich, Carini, & Seaman, 2000; Wang & Zajac, 2007), suggesting that value creation in an acquisition corresponds to the value of the relatedness (Bradley, Desai, & Kim, 1988; Seth, 1990; Seth, Song, & Pettit, 2002). However, how relatedness is assessed and the value of relatedness are lacking in the strategy literature, which leaves a significant gap in our understanding of capital investment practices in general and of acquisitions in particular. This is problematic, as research typically shows that acquisitions create limited or negative value for acquirers (Netter, Stegemoller, & Wintoki, 2011; Tuch & O'Sullivan, 2007).

In conclusion, the literature has so far been focusing on what constitutes strategic fit and how to evaluate the economic value of a possible acquisition. Limited interest has been directed towards how practitioners use concepts of strategic fit (e.g. similarity and complementarity) and capital investment tools (e.g. cash-flow valuation techniques and methods) when making the analysis. A prevailing belief seems to be that it is the concepts and tools that produce the rationales in capital investment decisions and not the practitioners using them (see for example Jones & Dugdale, 1994; Northcott, 1991). This belief can also explain why there has been a strong interest in how to further develop the concepts and tools (e.g., Koller, Goedhart, & Wessels, 2015; Verbeeten, 2006). Even though such efforts are worthwhile, we do not believe that they help increase our understanding of how financial and strategic rationales are actually produced. Instead we argue, in line with a stream of research in strategic investment decision-making (Alkaraan & Northcott, 2006, 2007; Elmassri, Harris, & Carter, 2016; Emmanuel, Harris, & Komakech, 2010; Harris, 1999; Harris et al., 2009), that much more attention must be trained on cognition and managerial judgments of the practitioner using the concepts and tools. Specifically, Alkaraan and Northcott (2006) suggested that judgments and intuitive processes affect how strategic and financial rationales are related in capital investment decisions. Even though these suggestions have not been fully developed and theorized, the research area of judgments and intuitive processes (i.e. intuitive expertise) has shown how experienced practitioners (i.e. experts) make assessment when complexity is high (e.g., Kahneman & Klein, 2009).

The present study builds on these insights. By doing so, it adds insights from research in the area of judgments and intuitive expertise to our present knowledge of how strategic and financial rationales are produced in capital investments. Informed by the literature on capital investments, strategic fit, and intuitive expertise, the present study examines how strategic and financial rationales are produced and how the two are related. The setting is an acquisition by a large and successful serial acquirer.

The case study shows that capital investment processes consist of two parts. The first part is the production of strategic and financial rationales. It is based on judgments of a myriad of factors and data concretized into rough estimates of how the acquisition is expected to affect value creation. Surprisingly, the process is without any visible analytical reasoning. Concepts and tools for strategic and financial analysis do not seem to be very important. Instead, judgments affecting the production of strategic and financial rationales largely follow an intuitive process based on expertise (see Kahneman & Klein, 2009). The second part consists of the presentation of strategic and financial rationales in approval documents. These rationales are logical and can be explained by analytical reasoning. Furthermore, they evince exactness in the description of numbers and values. Consequently, the production of strategic and financial rationales is de-coupled from how the rationales are presented in the approval documents. Hence, the exactness and logic in the approval documents are not mirrored in how judgments and intuitive expertise have affected the reasons for justifying the capital investment.

By showing how strategic and financial rationales are produced and how they are related these findings contribute to our knowledge of strategic and financial considerations and their relations in strategic capital investments (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006; Carr, 2005; Carr et al., 2010; Carr & Tomkins, 1996, 1998; Harris et al., 2009; Shank, 1996; Slagmulder, 1997). Consequently, the findings extend the suggestions of Alkaraan and Northcott (2006) that judgments and intuitive processes play a significant role in linking strategic and financial dimensions of capital investments. Furthermore, the findings contribute to research in strategic investment decision-making examining cognition and managerial judgments (Alkaraan & Northcott, 2006, 2007; Elmassri et al., 2016; Emmanuel et al., 2010; Harris, 1999; Harris et al.,

2009)¹ by surfacing individuals' intuitive expertise as an important 'hidden' activity of judgment in strategic investment decision-making. Thus, the study shows, and brings theoretical underpinnings, to how the presence of expertise and the character of the tasks can result in appropriate intuitive judgments positively affecting strategic investment decision-making.

The remainder of the paper is organized as follows. First, research in capital investments, strategic fit, and intuitive expertise is discussed. After this, methods including data sources and analysis are described. This is followed by a presentation of the findings, and a section discussing results in relation to existing research. In the final section the study concludes by discussing how the study extends present knowledge in the field as well as pointing out some possible future research directions in the area.

2. Literature review

Strategic and financial rationales have been widely discussed in both the capital investment and strategy literature. The most important and relevant studies are presented in the following two sections. As mentioned in the introduction, the focus has been on strategic fit and tools for economic evaluation of a possible acquisition. The last section presents research into judgments based on intuitive expertise, as there are reasons to believe these insights increase our knowledge of how strategic and financial rationales are produced (see e.g., Alkaraan & Northcott, 2006; Harris et al., 2009; Shapiro & Spence, 1997).

2.1. Strategic and financial rationales in capital investment research

In capital investment research, strategic and financial rationales in investment decision-making were recognized early on in examining investment processes (Ackerman, 1970; Aharoni, 1966; Bower, 1970; King, 1975). For example, Ackerman (1970) showed that investment decisions include product-market strategy and financial analysis. However, this research did not explore how financial and strategic rationales were produced, but had its focus on the processes, starting with the initiation of an investment proposal and ending with an investment approval (or rejection). After these field-based process studies, the strategic perspective on capital investments was not further examined until the 1990s. A concern was that the financial evaluation did not incorporate all benefits related to the investment, especially in new advanced manufacturing technologies. Therefore, capital investment researchers started to examine how strategic as well as financial rationales influence capital investment decisions (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006; Carr, 2005; Carr et al., 2010; Carr & Tomkins, 1996, 1998; Jones, Currie, & Dugdale, 1993; Shank, 1996; Slagmulder, 1997). This research shows that practitioners use a broad range of financial and strategic considerations in the appraisal of capital investments. Strategic considerations included use of tools such as benchmarking and value chain analysis (Alkaraan & Northcott, 2006; Carr & Tomkins, 1996, 1998; Shank, 1996) and strategic concepts and criteria such as consistency with corporate strategy, customer requirements, keeping up with the competition, and obtaining greater manufacturing flexibility (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006). However, even though the research showed that companies use both strategic and financial considerations in the appraisal of capital investments, it did not tell us much about how strategic and financial rationales are produced and inter-related.

A reason for this lack of knowledge of the production of strategic and financial rationales and their linkages could be that capital investment research, with the exception of field-based process research (e.g., Ackerman, 1970; Aharoni, 1966; Bower, 1970; King, 1975; Miller & O'Leary, 2007), has predominantly focused on the evaluation phase of capital investments and not on other phases of the investment process (e.g., Harris & El-Massri, 2011). This is especially salient in research examining methods, techniques, and criteria used in evaluating investment projects, which typically applies a narrow perspective on "the decision making role of the accounting system" (Verbeeten, 2006, p. 108) focusing only on financial rationales. This narrow view of capital investment practices corresponds to a view of accountants as being "charged with their evaluation" (Alkaraan & Northcott, 2006, p. 150), i.e. applying methods, techniques, and criteria to numbers provided from someone else (see Shank, 1996). This contrasts to a broader view of accountants having a financial as well as a strategic perspective (Carr, 2005; Carr & Tomkins, 1996, 1998; Chua, 2007).

However, there is a stream of research in strategic investment decision-making examining cognition and managerial judgments (Alkaraan & Northcott, 2006, 2007; Elmassri et al., 2016; Emmanuel et al., 2010; Harris, 1999; Harris et al., 2009). This research has a focus on how the organizational context and managerial judgments (i.e. investment process and people involved) affect the strategic investment decision-making process. It suggests that intuition is important in strategic investment decision-making (Alkaraan & Northcott, 2007; Emmanuel et al., 2010; Harris et al., 2009) and in assessing how the strategic dimension of capital investments is related to the financial outcome (Alkaraan & Northcott, 2006). Furthermore, it shows that managerial judgments plays an important role in risk assessment (Harris, 1999), and especially when there is a high degree of uncertainty (Elmassri et al., 2016). Although these studies have made important contributions to the field of capital investment research there is a lack of more detailed examinations of how, why and by whom judgments are being made.

¹ Experimental research has been done focusing on heuristics and biases (for overviews see for example Clancy & Collins, 2014; Haka, 2007). However, field-based research has been lacking (Emmanuel et al., 2010).

In summary, the production of strategic and financial rationales and their linkages have not been examined in the capital investment literature.² This is surprising, as, for example, the production of cash flows and their resulting quality, obviously influences how valuation outcomes are assessed. That process is affected by the design of the tools used to estimate cash flows. On the other hand, there can be no doubt that the quality of the estimates is to a large extent related to the production of financial and strategic rationales, especially the judgment and intuitive expertise of the practitioners. The importance of judgments and intuitive expertise in capital investments is supported by the stream of research examining managerial judgments and is also evident in the following quote by Haka (2007, p. 699), describing the challenges and uncertainties in cash-flow estimation:

One of the most difficult and intractable issues faced by decision makers and researchers is how to identify, capture, and evaluate uncertainties associated with long-term investments. Sources of uncertainty range from the mundane (cash flow estimation, number and sources of estimation error, etc.) to the more esoteric (complementarities among investments, options presented by investment opportunities, opportunity cost of investments, etc.).

2.2. Strategic and financial rationales in strategy research

In strategy research a common perspective on value creation in acquisitions is the resource-based view of the firm (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). This perspective views the acquisition of a firm as a bundle of resources with the potential to add value through relatedness, i.e. similarities and complementarities between the two firms (Bauer & Matzler, 2014; Kim & Finkelstein, 2009; Larsson & Finkelstein, 1999; Wang & Zajac, 2007). Larsson and Finkelstein (1999, p. 6) describe how these similarities and complementarities between an acquirer and target firm can add value through economies of sameness and fitness:

synergies can be achieved through both 'economies of sameness' (from accumulating similar operations) and 'economies of fitness' (from combining different, but complementary, operations).

Similarity is thus about efficiency synergies in terms of scale and scope, whereas complementarity is about efficiency synergies and enhancement synergies, i.e. value from differences that are mutually supportive. Empirical studies suggest that similarity between the acquirer and target lead to better performance (for overviews see Bauer & Matzler, 2014; Palich et al., 2000; Pehrsson, 2006). However, the results on similarity are not conclusive, and later studies show that complementarity is an important factor for acquisition success (Bauer & Matzler, 2014; Kim & Finkelstein, 2009; Wang & Zajac, 2007). Whereas these findings show that acquisitions have the potential to add value through resource similarities and complementarities, this research has not studied how acquirers assess relatedness.

The synergy hypothesis (Bradley, Desai, & Kim, 1983, 1988; Seth, 1990; Seth et al., 2002) is based on the empirical observation that acquisitions increase the combined value of the target and the acquiring firm. Taking its departure in the resource-based view of the firm, the synergy hypothesis suggests that the increase in value corresponds to the value of the relatedness benefits. The distribution of these benefits between the seller and the acquirer is a result of the negotiation between seller and acquirer in the acquisition process. As is the case with relatedness theory, it has not been studied how acquirers assess the value of relatedness or how the value of relatedness is produced.

In summary, strategy research focusing on mergers and acquisitions has been oriented towards strategic fit. Such an orientation is natural, since potential synergies are the main reason why a merger or acquisition is pursued. However, as pointed out earlier, it is surprising that there seems to be limited interest in understanding how strategic rationales (e.g. synergies) are produced and related to financial rationales (e.g. economic value of these synergies). As with capital investment research, there is also a lack of understanding for how judgment and intuitive expertise affect the production of the rationales presented in approval documents. There seems to be a lot of analysis and judgment being done by acquirers that are not explicitly related to the tools being used. One example is how strategic fit is evaluated and how it affects the assessment of the economic value of the proposed acquisitions. There are reasons to believe that this, and similar examples of how strategic and financial rationales are produced and related, is actually a result of judgments based on intuitive expertise (see Alkaraan & Northcott, 2006). In such a process, the tools are probably not as important in supporting the analysis of experts as they are for practitioners that are less experienced (see Jones & Dugdale, 1994). The next section describes in more detail probable reasons for that and what constitutes intuitive expertise.

2.3. Judgments based on intuitive expertise

Intuitive expertise (Kahneman & Klein, 2009) is founded on dual process theories and research on expertise. Dual process theories describe cognitive processes, such as thinking, reasoning, decision-making, and judgment, as consisting of two types³

² This is supported by a review of accounting journals (encompassing 21 journals in accounting with grade 3, 4 or 4* on the AJG list for 2015), and recent reviews of capital investment literature (Clancy & Collins, 2014; Haka, 2007; Harris & El-Massri, 2011; Harris, Northcott, Elmassri, & Huikku, 2016).

³ The terms system 1 and system 2 (Kahneman, 2011; Stanovich, 1999) have been used to label the two types of processing. However, the term dual systems are ambiguous and can wrongly lead in the direction of a two-minds hypothesis. Therefore, following Evans and Stanovich (2013), the terms type one processing and type two processing are used.

(Evans, 2008; Evans & Stanovich, 2013; Kahneman, 2011; Stanovich, 1999; Stanovich & West, 2000). Type one is intuitive processing that does not require working memory. This processing can be described in terms of being fast, automatic, associative, unconscious, and based on implicit knowledge stored in memory. Type two is reflective processing that requires working memory. This processing can be described in terms of being slow, controlled, rule-based, conscious, and based on explicit knowledge. We often refer to this as being used in individual rational thinking. The intuitive processing interacts with the reflective processing (Evans, 2007; Kahneman, 2011). As an example, when we are faced with a problem, an intuitive answer can come up fast and with little effort provided that we have experience from similar problems. Thereafter, we might use careful thought to reflect on our intuitive answer. Furthermore, field based studies suggest that the higher the level of experience the higher the inclination is to use intuitive processes (Burke & Miller, 1999; Hensman & Sadler-Smith, 2011).

Intuitive processes include heuristics and biases leading to flaws as well as intuitive processes leading to successful performance (Kahneman & Klein, 2009). Kahneman, often together with Tversky (Kahneman, 2003), has investigated how heuristics and biases can lead to flaws in judgment (Kahneman, 2011). In contrast to this research, Klein has focused on situations in which intuitive processes lead to successful outcomes, bringing experience and expertise to the fore. However, when it comes to intuitive processes based on expertise, both agree that judgments arising from experience and expertise, typically, “are skilled, appropriate, and eventually successful” (Kahneman & Klein, 2009, p. 521). Simon (1992, p. 155) explains intuitive processes based on expertise as follows: “The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer.” This description implies that without having and using the relevant information stored in memory, i.e. having and using the expertise, intuitive processes can lead to heuristics and biases. This is also related to feedback, whereas lack of feedback lead to less information stored in memory and an increased risk for biases.

Expertise can also be defined by analyzing the performance of experts. Ericsson and Lehmann (1996) describe expert performance as “consistently superior performance on a specified set of representative tasks for a domain” (Ericsson & Lehmann, 1996, p. 277).⁴ Expertise thus concerns performance in a particular domain, where high levels of performance require extensive experience. At least ten years of experience is required to reach expert performance in domains such as chess or sports (Ericsson & Ward, 2007; Simon & Chase, 1973). However, ten years should not be seen as something fixed. For example, studies show that elite musicians need 20–30 years of training to achieve expert performance (Ericsson, 2006). Still, experience does not necessarily lead to outstanding performance, and research suggests that performance beyond a proficient level requires deliberate practice, i.e. gradually refining performance with opportunities for repetition and feedback (Ericsson, 2006).

Further, research suggests that the effectiveness of intuitive processing, in comparison to reflective, analytical processing, and the propensity to use intuitive processing, depend on task structuredness (Dane & Pratt, 2007; Dane, Rockmann, & Pratt, 2012; Kahneman & Klein, 2009; Salas, Rosen, & DiazGranados, 2010; Shapiro & Spence, 1997). Laughlin and Ellis (1986, p. 177) distinguish structuredness as a continuum between intellectual and judgmental tasks. “Intellectual tasks are problems or decisions for which there exists a demonstrably correct answer within a verbal or mathematical conceptual system” and “Judgmental tasks are evaluative, behavioral, or aesthetic judgments for which there does not exist a demonstrably correct answer.” Thus, at one end are intellectual tasks, lending themselves to be solved by analytical reasoning. At the other end lie unstructured problems with complex underlying relationships, a “huge amount of data on many different variables and from many different sources, much of which covaries or is redundant” (Shapiro & Spence, 1997, p. 66). On a general level, acquisition decisions have been portrayed as being a judgmental task (ibid).

In summary, research on judgments and intuitive expertise provide us with several important insights. First, acquisition decisions have been portrayed as a judgmental task by Shapiro and Spence (1997). This is also in line with the findings in the literature review. Therefore, it is reasonable to assume that the production of strategic and financial rationales is an unstructured process with complex relationships affecting how a potential acquisition is analyzed. Second, following this line of reasoning, it can be assumed that the intuitive processing (type one) is dominant when the rationales are produced and that reflective processing (type two) is dominant when the approval document is finalized. Third, in order for intuitive processing to be successful, leading to a skilled and appropriate analysis of a potential acquisition, expertise must be present in the form of long and relevant experience with opportunities to get feedback and learn. It can also be assumed that expertise makes the practitioner less reliant on tools when producing and integrating strategic and financial rationales to reach a conclusion about strategic fit and the economic value that the acquisition is expected to create.

3. Research method

3.1. Case selection

How strategic and financial rationales are produced in capital investments in general, and in acquisitions in particular, is largely unexplored. Therefore, a case-study design was chosen. Case studies are especially suitable when the objective of the research endeavor is to understand complex dynamics in a specific context (Yin, 2009). Previous studies have shown that acquisition processes encompass several assessments of relatedness (Boone & Mulherin, 2007; Hansen, 2001). Moreover,

⁴ The definition they use originates from Ericsson and Smith (1991).

information collection and analysis of the target is made gradually during the acquisition process. A process study design (Langley, 1999; Langley, Smallman, Tsoukas, & Van de Ven, 2013) was chosen to make it possible to study assessment and valuation of relatedness over the course of an acquisition and in detail.

The research setting is an acquisition in a large and successful international serial acquirer in the manufacturing industry. Large acquirers with extensive acquisition experience are likely to have well-developed structures and processes for acquisition appraisal (Ashkenas, DeMonaco, & Francis, 1998; Chatterjee, 2009; Dionne, 1988; Laamanen & Keil, 2008). As pointed out by Kaplan in several articles (e.g., Kaplan, 1986; 2011) the study of firms in the forefront of developing structures and processes can be expected to give novel insights of both a theoretical and a practical nature.

Based on discussions with M&A advisers and one of the researchers' deep knowledge of the Nordic business and M&A community, a company that met the above criteria was selected and contacted (hereafter "Acquirer"). For ten years preceding the study it has acquired several companies each year, resulting in more than seventy acquisitions. Furthermore, Acquirer can be viewed as a successful serial acquirer. For example, the shareholders' return from the company is well in excess of comparable companies for the ten years preceding the study. In interviews with M&A experts Acquirer was mentioned as a serial acquirer with well-developed structures and processes for M&A appraisal. Access to the company was facilitated by one of the researchers' extensive experience of working with acquisitions in international firms and contacts in the M&A community. Throughout the interviews this experience was beneficial, as it made it possible to be specific and detailed when interviewing the broad range of specialists that are involved in an acquisition process (Haspelslagh & Jemison, 1991; Jemison & Sitkin, 1986).

Acquirer was asked to select a recent case, enhancing the possibilities for the interviewees to recollect what had actually taken place during the acquisition. Furthermore, as we strived to achieve a general understanding of the production of strategic and financial rationales in Acquirer, the case should be a typical one. Following these criteria Acquirer selected the most recent acquisition (hereafter "Target"). This acquisition had been closed less than two months before the start of the study and was typical for Acquirer as it was a cross-border acquisition of a privately owned target. Moreover, it had revenues in line with the average revenue for Acquirer's acquisitions during the ten years preceding the acquisition of Target, i.e. approximately SEK 200 million. Furthermore, Target was sold in an auction process (Hansen, 2001). This type of auction process is common when Acquirer acquires companies.

Our approach of selecting the case could however lead to potential biases. One example of this might be Acquirer choosing a case in which the process was more 'rational' compared to other acquisitions made by the company. To check for potential biases questions were asked if the acquisition of Target differed from other acquisitions and if so how. Based on the answers received, we could not find that the production of strategic and financial rationales in our focal case was substantially different from that in other acquisitions made by Acquirer.

3.2. Data sources

Data have been collected from several sources: i) qualitative data from open-ended interviews with decision-makers and practitioners involved in making the acquisition; ii) follow up e-mails and phone calls; iii) documents produced by Acquirer and used by interviewees to inform, evaluate, and negotiate, including agreements, approval presentations, and a financial model; iv) seller documents, like process letters, a management presentation, and an information memorandum; v) other archival data including company websites and business publications.

Initially twelve semi-structured interviews were conducted over eighteen months with multiple senior-level participants at the project, division, and group levels (see Table 1). Interviewees were selected using snowball sampling via references from people who had been previously interviewed. The selection method showed that there were few individuals who had access to and were involved in the production of strategic and financial rationales. These individuals were primarily limited to what we call the core team. It consisted of the acquisition manager, the finance manager, the manager supporting the acquisition manager, and the legal manager. Decision-makers mainly asked questions and made comments on the rationales

Table 1
Interviews.

Position in project	Position in company	Length of interviews (minutes)
Core team:		
• Acquisition manager	Business Development Director, Division	30 + 83+110 + 150 + 110
• Finance manager	Finance Director, Division	90
• Acquisition support manager	Manager, Division	60
• Legal manager	General Counsel, Group	140
Acquisition control	Finance Director, Business Area	94
Acquisition control	Business Development Director, Business Area	94 + 120
Decision-maker	Division Manager	41
Decision-maker	Business Area Manager	45
Decision-maker	CFO, Group	70

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produced by the core team. Acquisition control, consisting of two individuals at the business area level, was working on behalf of decision-makers.

A reason that few individuals were involved in the production of strategic and financial rationales was secrecy. Any leakage that an acquisition of Target was in progress could risk derailing the transaction. Furthermore, the confidentiality agreement with Target shareholders restricted information sharing within Acquirer and involved potential legal and financial risks if information were to be leaked. Obviously, the strategic and financial rationales were also very important to keep secret during negotiations.

The interviews continued until saturation. The interviews were 30–140 min long, with an average length of eighty-one minutes. All interviews were recorded and transcribed. The interviewees were asked to describe their role in the acquisition process, the role of other participants, and activities carried out during the acquisition of Target. The same questions were asked for acquisition projects in general. Interviewees were also asked if there were any specific issues with the acquisition of Target. Moreover, questions were asked about the decision-making process and how they assessed the acquisition of Target and acquisitions in general.

Additionally, two interviews were conducted with the acquisition manager three and a half years after closing. The acquisition manager acted as an integration manager and CEO of Target for a period of approximately two years. The interviews lasted 150 and 110 minutes and focused on how the integration process unfolded and problems and issues around the integration. The interviews were characterized by openness in which the interviewee also described problems and synergies that had failed to be realized.

The interviews were conducted by one of the researchers, who has an extensive experience of working with mergers and acquisitions for more than 25 years. This facilitated communication with interviewees “in ways that engage them in sharing what they know, its technical content, and what is going on in the setting” (Langley et al., 2013, p. 6). This type of interview, based on empirical or interactional knowledge (Collins, 2004) by the interviewer, is suggested for acquiring high-quality process data (Langley et al., 2013), particularly as investment processes for acquisitions require people with a broad range of expertise (Haspeslagh & Jemison, 1991; Jemison & Sitkin, 1986).

3.3. Data analysis

The data analysis was both planned and emerging, shifting back and forth between the data, emergent findings, and theory. The analysis could therefore be said to be based on abductive reasoning (Gehman et al., 2018). In practice this meant that some analytical themes were identified before the data analysis started. These themes (e.g. strategic fit and economic valuation) were informed by established theoretical concepts (e.g. relatedness and cash-flow estimation) from the strategy and capital investment literature. As the data analysis progressed, themes identified at an early stage were further refined, and new themes (e.g. managerial judgments) were added and related to theoretical concepts (e.g. expertise and intuition) from the literature on cognition. Thus, the process of data analysis could be characterized as iterative. However, for reasons of simplicity, the following and more detailed discussion has a more linear character.

In the first phase of the data analysis, a detailed case story was created, describing activities and events in a chronological order. The write-up of the case story evolved in an iterative way, and data analysis overlapped with data collection (Eisenhardt, 1989). Major observations and the analysis of them were noted after each interview. This approach allowed answers to outstanding questions and areas lacking data to be identified and collected. It also enabled us to critically examine the relevance and importance of analytical themes that had been informed by the literature at an early stage of our research endeavor. By shifting back and forth between data, emergent findings, and theory we were also able to further refine the themes and make them more detailed and precise (e.g. by decomposing the concept of relatedness into similarities and complementarities).

The first phase also included the development of a process model using a temporal bracketing strategy (Langley, 1999). Thus, the acquisition process was divided into phases to transform data into more manageable blocks in which activities could be more easily analyzed. The temporal brackets identified represent breaks in the temporal flow of activities and events (Langley, 1999). The approvals by decision-makers and production of approval documents were primarily centered on the bid, i.e. the offer to the seller. Therefore, phases were delineated by the character of the bid and the nature of the activities taking place. What emerged from the data was an acquisition process with four phases followed by integration, i.e. *initiation*, *preliminary bid*, *final bid*, and *bid closing* (see also section 4.1). Even though activities could continue over more than one phase, the respective phase with its main activities could clearly be identified in the data.

After the first phase of data analysis, themes and ideas related to approvals and the production of approval documents were further developed. In this process intuitive expertise was not a concept that was identified a priori but instead one that emerged when we presented and discussed our draft findings with other researchers. In particular, there were several puzzling discoveries that we could not explain by using only the theoretical concepts originally identified in our thematic analysis. For example, why could we not identify any analytical processes or reasoning to explain how synergy estimates were produced in our data? After a fellow researcher suggested that we should look into the areas of intuition and expertise to help

explain our findings, we delved more deeply into the foundation of the intuition concept. After revisiting our data, informed by additional theoretical insights, we added the concept of intuitive expertise to our thematic analysis.

Finally we would like to point to the obvious difficulty of knowing what is going on in the minds of those producing strategic and financial rationales. However, taken together, the data from the interviews, the task characteristics and the expertise by those producing the rationales, jointly implies that judgments based on intuitive expertise played an instrumental role in the production of strategic and financial rationales. This conclusion is supported by previous studies in the areas of intuitive expertise and intuition (Agor, 1986; Burke & Miller, 1999; Huang, 2018; Huang & Pearce, 2015; Lipshitz & Shulimovitz, 2007).

4. Results

To answer the question of how strategic and financial rationalities are produced in capital investments, the description of the rationales in approval documents was much in focus. We found that approvals were based on only two documents: the approval presentation and the financial model. The approval presentation was the document used by decision-makers to justify the acquisition. The financial model was an Excel-based accounting model. Results from this model were pasted into the approval presentation providing the financial rationales used for justifying the acquisition. Strategic rationales emphasized relatedness.

Our analysis shows that strategic rationales, and especially the value of relatedness, are based on assumed complementarities and similarities (Larsson & Finkelstein, 1999) as well as rough value estimates on a highly aggregated level. This suggests that these rationales and estimates are encumbered with a high degree of uncertainty. A more precise realization analysis requires access to strategic and financial data at a detailed operational level. The acquisition process does not allow this, because it is a competitive process restricted in time and providing limited access to data and people in both the target firm and the acquirer. Moreover, the study shows that in contrast to what the literature on synergy valuation implies (Bradley et al., 1988; Seth, 1990; Seth et al., 2002), only some of the strategic rationales were translated into financial rationales. The choice of only valuing some of the synergies and the rough estimates was largely based on judgments by the acquisition manager and the finance manager without any visible analytical process.

Tables 2 and 3 provide an overview of the results, and in the following three sections these findings are described in more detail. The first section describes the phases of the acquisition process, including main activities and approvals by Acquirer (see Fig. 1). The following section presents how strategic rationales were produced, followed by a section describing how financial rationales were produced.

Table 2
Strategic and financial rationales.

Strategic rationales	Financial rationales
Complementarities	
Adding a new product to the existing product portfolio. An increase in sales and services of the product were foreseen as a result of using Acquirer's global service network.	The value of relatedness was estimated and included in the financial model. Increased sales consisted of two synergy projects. One was increased product sales and the other was increased sales of services and spare parts. The estimates were based on percentages of sales. As an example, for product sales the first-year increase was assumed to be 0. The following four years it was assumed to be 5%, 10%, 15% and 15%. A 30% gross margin was assumed.
Cooperation with the seller on soft materials used by the product and applications of the product.	The synergy was not included in the financial model.
Similarities	
Reduction of product cost by using the acquirer's purchasing power.	The synergy was included in the financial model. Estimates were based on percentages of costs of goods sold, starting at 1% of costs of goods sold year 1, thereafter gradually increasing to reach 3% for years 4 and 5.
Reduction of product cost as a result of production synergies.	The synergy was not included in the financial model.
Possible cost savings on low-end equipment if produced in China or India (to be further investigated).	The synergy was not included in the financial model.
Rationales not presented to decision-makers	
Moving to the acquirer's warehouse and closing down the warehouse of Target. Identified as a potential synergy.	Value for reduction of warehouse costs was not included in the financial model.
Cost savings based on lowering administrative costs in Target.	Administration costs were estimated by the finance manager and were included in the assumptions of the business case stand-alone. ^a The estimates were done as a percentage of revenue using the division's administrative costs as benchmark. An estimate of the costs for people required in Target was also made. This was done to safeguard that the estimated amount was sufficient.

^a In the stand-alone model initially 3.5% of revenues were used as administrative costs. It was assumed that administration costs could be lowered to 2.2% of revenues.

Table 3
Costs for the realization of rationales.

Cost items	Estimation of costs
Transaction costs, e.g. costs for legal advisers. The acquirer had its business certified by OHSAS, ^a something which the target lacked. Restructuring on parts number following the acquirers numbering.	An estimate of these costs was included in the financial model. Certification was run as an integration project, and estimates of these costs were included in the financial model. Changing parts numbers was an integration project, and estimates of these costs were included in the financial model.
Warranty provision covering product guarantee costs towards customers.	This was an implementation cost that was added after due diligence. Acquirer discovered that provisions covering product costs were substantially lower than assumed to be appropriate. Acquirer brought this up in the negotiations with the seller and reduced the purchase price accordingly.
Acquirer would not purchase existing ERP and IT systems, and a plan for acquiring new systems was therefore made. Acquirer had strict rules for valuation of inventories that differed from those of Target.	Estimates for implementation costs of new ERP and IT system were included in the financial model. An estimated write-down of the inventories was done by Acquirer and was included in the financial model.

^a An international occupational health and safety management system.

4.1. Phases of the acquisition process

The first phase, *initiation*, concerned strategy, high-level ideas of how potential targets could contribute to the strategy of the division (i.e. strategic ideas⁵), identification of targets, and establishing contact with the seller. The strategic ideas had been produced in the annual strategy process by the division, involving its management, including the business development director. The phase ended with signing of a non-disclosure agreement (NDA) between Acquirer and the seller. The second and third phases were *preliminary bid* and *final bid*. These phases concerned: collecting and analyzing information about the target, producing strategic and financial rationales, negotiations and integration planning. The essential difference between these phases was that in the *preliminary bid* phase, Acquirer had less information and had done a more limited analysis compared with the *final bid* phase. In the *preliminary bid* phase information about the target consisted mainly of a presentation of the business by the seller and an information memorandum of 80 pages. This memorandum described the business in detail, including financial forecasts for the coming six years. The preliminary bid phase ended with an indicative bid submitted to the seller as a letter of intent (LOI). The *final bid* phase included due diligence, which was a focused effort over a short time period to examine Target in detail (Angwin, 2001). This included access to information in a virtual data room,⁶ and a meeting with the management team of Target. The phase included a so-called “final bid” with a mark-up version of the purchase agreement (PA). The bid was approved by the CEO and executive team of Acquirer and was subject to approval by the board of Acquirer. Moreover, in this phase Acquirer started to develop detailed integration plans. The *final bid* phase ended with signing and the announcement of a purchase agreement (PA). The last phase was *bid closing*, which included obtaining approvals for finalizing the transaction.

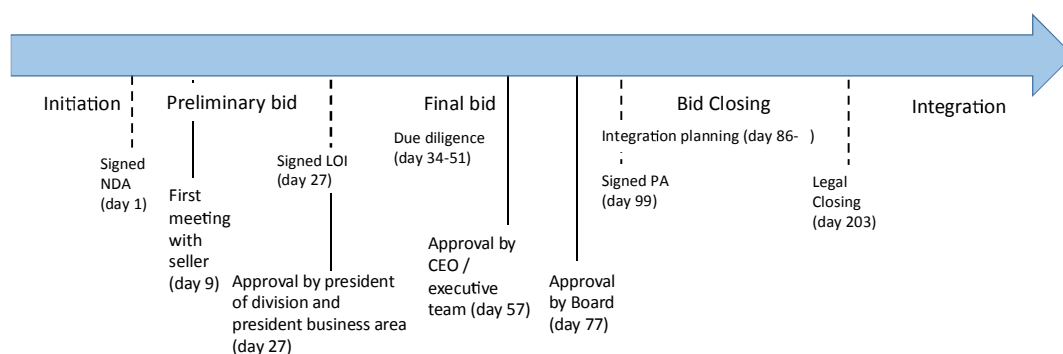


Fig. 1. Time schedule.

⁵ The strategy was centered on how the division could grow its business. The strategic ideas described how that could be achieved through acquisitions, for example, by adding additional products to existing customers, or acquiring companies that enhanced market penetration in developing markets.

⁶ A virtual data room is an online access to a so-called data room for the bidder and its advisers (e.g. Bruner, 2004).

4.2. Production of strategic rationales

The strategic rationales were developed from the relatedness idea created in the initiation phase. This idea was described in the approval presentation as “adding a new product to the existing product portfolio,” i.e. complementarity relatedness. Moreover, the approval presentation described the product of Target as a core product, indicating similarity relatedness. Although the relatedness idea was described in a narrow way in the approval presentation, it had a richer narrative, as illustrated in the following quote from one of the interviews with the acquisition manager.

It was pretty clear to us, commercially, strategically, product-wise and process-wise what this manufacturing process looked like. Which [product] area we were present in and what [products] were missing in the [product] area where we were present. And then we thought: ok, we can go a step further. There was a hole to fill. It seemed pretty clear.

The strategic rationales were produced by the acquisition manager and other members of the core team. The core team managed the project from initiation to close. It consisted of the acquisition manager, the finance manager, the manager supporting the acquisition manager, and the legal manager. The division manager was also, obviously, involved in discussing rationales. The acquisition manager made drafts presenting strategic rationales, which he sent out and discussed with the other team members. Two quotes from one of the interviews with the acquisition manager illustrate how he reasoned when making the drafts.

So this strategy part and the logic are almost ready when you are thinking about going in this direction. But we want to be in this market segment, we fill a hole in our process [...] So if you think about it: a small company that sells mostly in Europe. We have worldwide presence and should be able to access more customers than they have. That is how you reason. Very loosely in a way. But there are supposed to be synergies on the market side. Ok how are the machines designed then? They have diesel engines, we also have that in our machines. Then you might be able to combine and reduce the purchase price, for example. Because they buy a few engines and we buy hundreds or thousands. Production, there was a thought that if we put together their production with our production then a lot of overhead can be reduced. So there will be synergies.

But this is at a high level of abstraction. It is up to the acquisition manager and the project members' current creativity [to produce relatedness rationales].

As illustrated in the quote above and as shown in Table 2, the strategic rationales were at a highly aggregated level. They were primarily developed during the phase of the indicative bid and did not change during the phase of final bid.⁷ The rationales were presented to, discussed with, and approved by business area management, group management, and the board. This meant that the division needed to be able to communicate these ideas to several decision-makers. In the approval presentation, the rationales were described in a sparse manner. However, like relatedness ideas, they had a narrative part, albeit still on a highly aggregated level used when communicating the rationales. An example of this is illustrated in the following quote showing how the division manager described the rationales.

And then of course there are always synergies within your production units. If you take Target for example, the product technology, the product configuration, product componentry is very close to what we have with products we make in [factory x]. Which means that we start getting synergies on common componentry, higher volumes, all of their purchase prices, flexibility to manufacturing and variation with factories. [...] And it also comes a lot down to competences too. Working at Target, Acquirer had a competence in the hardware or the machinery, which Target didn't have. So that was a value we could add to Target. Target had a competence in chemistry, the soft product themselves, which Acquirer didn't have. So there was a very strong synergy that we both could take to market, and add value to the customers. [...] And then for a company like Acquirer, we always have a very strong distribution network set up.

At the divisional level there were more detailed plans for how the rationales should be realized. They were developed during the phase of the final bid by the people responsible for implementing the rationales and by relevant functional experts. These people were involved during due diligence and in the integration planning, which started two weeks prior to signing the purchase agreement. During these two weeks, detailed plans were developed for projects relating to realization of the respective relatedness area. The plans were continuously refined and updated until realization of the plans started. These plans were discussed with the division manager but not with other decision-makers.

As regards the acquisition process, it was structured as an auction. As mentioned earlier, a consequence of that was limited access to data and people in Target. Acquirer was also asked to submit an indicative bid as quickly as eighteen days after the first meeting with the seller. The bid was thereafter evaluated by the seller and Acquirer was selected to continue the process and submit a final bid together with a mark-up version of a purchase agreement from the seller. The submission was due thirty days after the indicative bid. Because of these deadlines, Acquirer had limited time for the analysis of Target. All in all, the structure of the process put huge demands of the judgment and expertise of the core team.

⁷ An exception to this was the integration activities, which changed as more information on Target was obtained during due diligence (see Table 3).

Directly after the first meeting with the seller, the core team started to develop strategic and financial rationales. This included a first version of the financial model with income, balance sheet, and cash-flow statements, for the business case stand-alone and synergies. Four days before the approval meeting and submission of the indicative bid, the financial model was sent to Acquisition control in the business area. Two days later, a draft approval presentation was sent from the core team to Acquisition control. Directly after the documents were received, an intense interaction took place between Acquisition control and the core team in which comments and questions were raised. Subsequently the financial model was updated, and approval to submit an indicative bid (in the form of a LOI) was given by the presidents of the division and the business area. At the same day the indicative bid was submitted to the seller – only eighteen days after the first meeting with the seller.

In the phase of submitting the indicative bid, data consisted of a presentation by the seller and an information memorandum of eighty pages. Moreover, the acquisition process was confidential, limiting participation of people in both Acquirer and Target. This meant that primarily the core team, consisting of a handful of people, was involved during the phase of preliminary bid. During the phase of the final bid additional data from meetings with the management of Target and information in the data room were provided. In this phase the core team was extended to include people from functional areas in Acquirer. This extended group was mainly involved in due diligence and integration planning. Furthermore, there was a limit to the number of meetings that Acquirer could set up with the management of Target (in which the seller and its advisers also took part).

4.3. Production of financial rationales

Surprisingly only some strategic rationales were valued (see Table 2). The acquisition manager and the finance manager identified and selected which rationales, i.e. synergy projects, to include in the financial model. Sales and purchasing were the only strategic rationales that were included and thus valued.⁸ For these, the respective functional manager in the division was assigned to be responsible, and a five-year forecast of a simplified income statement and working capital was made. As an example, the division's sales manager was responsible for the synergy project on increased product sales. This included estimating forecasted synergies. The acquisition manager explains how synergies in product sales were estimated:

So I told [the sales manager of the division]. You must make a plan for how much more you can sell of Target's products by them becoming part of the division. And possibly, if we can sell more Acquirer products through their distribution network. But we quickly concluded that it is not feasible because [the seller] did not sell any mining machines. Furthermore, the seller's sales persons would not be part of the acquisition [they would stay with the seller], so we would lose rather than gain ground. But we gained terrain by having this product that we could sell throughout our global sales network. But in a transitional phase, we would lose these ten sellers [from the seller] that were in distant markets. So it could impact turnover and add some risk. So [the sales manager of the division] had to assess: will we sell 5% more products the first year, 10% the second year, what is reasonable? So he did it.

However, filling in the numbers and managing the financial model was done by the acquisition manager and finance manager of the division. The financial model and valuation were seen as a specific area of expertise that should be handled by the accounting experts (i.e. the acquisition manager and the finance manager). Even though the functional manager was responsible for estimating synergies, the acquisition manager and the finance manager directly influenced the estimates. As an example, estimates of increased sales were adjusted by them.

Synergy estimates were also influenced by secrecy. The acquisition project was kept secret within a small group of people, which restricted the involvement of people within Acquirer. A consequence of this was, for example, that the core team could not ask and get commitment from their sales organization on how many of Target's products they could sell. The synergy estimates of the rationales that were valued, i.e. increased sales and savings on purchasing, were rough estimates based on percentages of sales and costs of goods sold (see Table 2). Synergies relating to co-operation with the seller, production, and moving production to low-cost countries were not valued. There was also an identified synergy relating to the warehouse of Target, which the accounting experts were aware of but had chosen not to value. Consequently, this synergy was not included in approval documents.

The results suggest that the choice to value only some relatedness rationales and the rough synergy estimates was based mainly on judgments made by the acquisition manager and the finance manager, without any visible analytical process. Reasons stated for only valuing some relatedness rationales were the time required for, and uncertainties in, realizing synergies (see Table 4). The acquisition manager also expressed it as "we did not dare to put numbers to [it]." However, apart from what could be read from these stated reasons, no criteria or analytical process could be identified explaining why only some relatedness rationales were valued. There was also a planned synergy that was subsequently realized already the first year, but was not valued. Taken together, we therefore argue that the choice to value only some relatedness rationales was based mainly on judgments made by the acquisition manager and the finance manager.

⁸ Value relating to synergies in administration was visible in the financial model as a reduction in administration costs. However, this was not presented as a rationale in the approval documents. Moreover, costs for integration of the businesses were separate synergy projects that were included in the approval presentation and the financial model. These included costs for the transaction, certification of Target's products, restructuring of parts numbers, costs for ERP and IT systems, additional provision for guarantee costs, and write-down of inventories (see Table 3).

Table 4
Reasons and supporting data for why only some relatedness rationales were valued.

Reasons	Supporting data
Highly uncertain long-term synergy	Project presentation: Initially there was an idea of moving production of low end equipment to China or India. That would take time and in the presentation it was described that it should be investigated. However, since it was a long-term idea, no specific integration project was started. The identified synergy potential was also described as being highly uncertain as it required large changes in the production at Target.
Difficult to assess the size of synergies	Acquisition manager: "And if there are any [synergies] you cannot quantify, it can happen that you mention it. Nowadays, we say: we believe there are synergies [in that area], but it is difficult to estimate their size."
Did not want to estimate the size of synergies	Acquisition manager: "We said that we have lot of carriers [a machine platform] that have drilling machines or bars to put explosives in. So it would be a good idea to make use of such a machine platform to put the spray equipment on and thereby gain volume advantages. And this was one of those possible synergy projects that we did not dare to put numbers to. We said we will run it as an R & D project, but we do not know how much it will contribute. It will perhaps take a long time too, so we will not calculate benefits and advantages. But it was a project that we would do, but we did not know its economic consequences. And so we started the project ... But all Acquirer carriers were far too expensive to put spray equipment on. They were twice as expensive. So we got nowhere with it."
Planned, but did not value the synergy ^a	Acquisition manager: "Once we started, everyone began questioning, will you wait so long before you get that money [year 4 and 5 in the synergy model]. Then we said that we thought we might not manage to do everything at once. Then I told X: you will be the acquisition manager for this. We did it in the autumn of the same year. So it turned out very good."
Synergies that take a long time (4–5 years or longer) to realize are not valued ^b	Acquisition manager: "But someday there will be a synergy but perhaps it takes 4 years or 5 years. Not the 1st, 2nd or 3rd year It may be that there is a synergy on the product side but not until year 6. Then we do not include it in the valuation model Mostly we say like this: we do not talk about them, because we do not want to mess things up for people." "You have the planning period these 5 years and then steady state. If something happens in the steady state then we will deal with that then. So you try to recoup the project in those 5 years. Even if we do not make a payback calculation. But it should be a good project during these 5 years. That is definitely how I reason. And I say that to anyone who asks me."

^a Moving stock to Acquirer's warehouse and closing down of Target's warehouse was planned for years 4 and 5 but was not valued.

^b When we discussed the above in detail with the acquisition manager he explained that the project should show a return on invested capital (ROIC) higher than the weighted average cost of capital (WACC calculated before tax) before 5 years. An important part of the project presentation was a graph showing the capital employed turnover on the x-axis and EBIT margin on the Y-axis. In this graph the WACC (pre-tax) was plotted and the ROIC for the first 5 years of the acquisition.

Table 5
Estimating numbers.

Reasons	Supporting data
<i>Fingerspitzengefühl</i> needed for making judgments	Acquisition manager: "When there are many beginners in a project then there tend to be somewhat poor judgments. You don't just sit down and read from a database and then believe that you know how to do it. You must have done it a certain number of times to get some <i>Fingerspitzengefühl</i> ."
Overestimation of financial effects	Acquisition manager: "How quickly one can influence asset turnover is often overestimated, that's one. The other is how fast you can affect the profitability because you think you have so many synergies on the cost side that happen at once, and account for them the first year. I always say to people, don't think you have time for much the first year. Synergy projects takes time to realize. They normally require a long time to be truly realized."
Being careful when estimating synergies	Acquisition manager: "Icing on the cake, synergistic effect that we did not want to commit to. But it was good that we did not, because the market dropped, and we would not have been able to deliver what we promised. I was very careful. You should know, that during this year and the years before, you could see numbers [of increased sales] that were 30% up from the previous year [pointing to the forecast]. People were crazy when they made valuations. I said, forget it. If you come to the managers with numbers like this you will get fired. You will never be able to deliver such growth. So I was careful."
Try to be on the high side in guessing cost estimates	Finance manager: "You just make as good a guess as you can and maybe try to be a little on the high side rather than the low side. Ideally, you want it to perform a little better than what you said, and to not get much worse than what you said. Because, eventually, you are assessed on this every month."
Experience from earlier acquisitions	Acquisition support manager: "Yes, and we did our homework, we were very conservative in terms of expectations. We also learned our lesson a bit, because it isn't that easy to have a new product onboard ... The expectation was pretty much based on the previous acquisition, especially the one that we did in our division with xxx. It was based on the time when we were too optimistic." Finance manager: "But we said that we made a mistake when we made the last acquisition and we were far too optimistic there. So we said, now we are not going to make the same mistake again."
Caution stemming from a will to deliver on or above expectations	Acquisition manager: "I say like this, as in the case of Target. You'll turn those coins over and over several times. Rather keep it [the estimation] down a little bit and be much more confident that you can deliver than being too optimistic and unsure if you really can deliver. Because then you cannot sleep so well at night when you are responsible for the integration process." "If I can promise 100 but know that if I'm lucky, maybe I can get 150, then I only promise 100. And if I am lucky then I will get 150, otherwise I get my 100 and everything is fine. I think that's best, and I always preach it. If there is a borderline case to get the acquisition through, then there is something wrong. Then the financials are not sufficient or the strategy is not there. Then maybe we are paying too much. If you wring out the last drop from the cloth, then there is no moisture left in the cloth anymore. And then it is almost just a paper tiger. That is what the risk is. And then you cannot deliver."

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As with the choice of only valuing some synergies, no analytical process could be identified explaining how the synergy estimates were derived. Furthermore, in the financial model there were no underlying calculations or assumptions for these synergy estimates, apart from the percentages used to calculate these. This was in contrast to costs for implementation and realization of rationales, for which detailed underlying reasoning and calculations were provided and made (see Table 3). Even if the synergy estimates were, as it seemed, not derived from an analytical process, considerations from those making the estimates, i.e. the acquisition manager and finance manager, could be found in the data. One consideration was that they were careful (see Table 5) as they wanted to be able to perform in line with or better than the estimates. Another consideration concerned experience. Both the acquisition manager and finance manager expressed that estimates and cautiousness was based on long prior experience from acquisitions (i.e. expertise). The acquisition manager phrased the requirement of having experience when making forecasts and judgments based on expertise as having *Fingerspitzengefühl*.

An illustration of the judgmental character of relatedness and value estimates is the quote below from the interview with the finance manager. Early in the process, after the first meeting with the seller and before the preliminary bid was due, the acquisition manager, seemingly instantly, made a first rough value estimate based on limited information about the target. This included an estimate of the synergies and seemed to be recurrent for acquisitions.

When we gave an indication, we had already completed a lot of the information in the valuation model. It was as [acquisition manager] always says: we make it quick and dirty, so we arrive at something approximate, like this [raises a finger in the air]. And it usually corresponds fairly well [to the final valuation] if you do not find something major during due diligence. Yes, in the end there probably wasn't a big difference.

5. Discussion

The results show that only some relatedness rationales were valued and that synergy estimates were done in a rough manner. When analyzing the data, including interviews and Excel sheets with underlying formulas and calculations, we could not find how the synergy estimates were produced or why only some synergies were valued. Furthermore, we could not identify any explicit analytical process or reasoning to explain this. What could be found in the data were expressions of uncertainties in realizing synergies, or as the acquisition manager expressed it “we did not dare to put numbers to [it].” Other considerations were described, such as being careful and using experience. One of the interviewees expressed it like having “*Fingerspitzengefühl*” when making synergy estimates. Thus, the production of synergy estimates and the choice to value only some synergies were based on judgments by those carrying out this task, i.e. the acquisition manager and finance manager of the division. We suggest that these judgments, to a large extent, were based on intuitive expertise.

In the following discussion we build on the concept of intuitive expertise (Kahneman & Klein, 2009; Simon, 1992) and its foundation on expertise (Ericsson, 2006) and dual process theories (Evans, 2008; Evans & Stanovich, 2013; Kahneman, 2011).⁹ Informed by this research, we argue that the production of strategic and financial rationales as described in the case was based on judgments, founded on intuitive expertise.

It is difficult to understand and observe what takes place within individuals. Having this in mind, we nevertheless argue that the production of strategic and financial rationales, to a large extent, was based on intuitive processes founded on expertise. We do this in three steps. First, we show that the task characteristics of the acquisition process made it suitable for intuitive processing. Second, we show that the practitioners carrying out these tasks, the acquisition manager and finance manager, had the relevant expertise. Third, we suggest that the intuitive expertise led to skillful, appropriate, and eventually successful judgments.

5.1. A task suitable for intuitive processing

In our case, the task to be carried out, largely by the acquisition manager and the finance manager with input from functional specialists, was to identify and describe synergy areas and to estimate synergies. This included estimating the impact on profit and loss, balance sheet, and cash-flow statements for the five years subsequent to the acquisition. This was a highly complex task, as the acquisition process itself was a competitive process restricted in time and providing limited access to data and practitioners both in the target firm and the acquirer. The consequence of this was that the task needed to be carried out based on limited information and within a short period of time. Furthermore, identifying synergy areas and estimating synergies meant making an assessment of something which, obviously, was dependent on how the integration of activities would proceed.

The difficulty of identifying synergy areas and estimating synergies that we have identified in our case is strongly supported by a large body of literature that points to the complexity of making transactions and integrating the acquirer and target business (for recent overviews see Faulkner, Teerikangas & Joseph, 2012; Haleblian, Devers, McNamara, Carpenter, & Davison, 2009; Risberg, King, & Meglio, 2016). For example, studies show problems and complexities in the acquisition process itself (e.g., Angwin, 2001; Haspeslagh & Jemison, 1991; Jemison & Sitkin, 1986; Very & Schweiger, 2001) and the

⁹ These elements are similar to those proposed for frameworks in intuition research (e.g., Dane & Pratt, 2007; Salas et al., 2010). However, we are interested in when type-one processes are involved and when these can lead to successful outcomes (See Section 2 for a more detailed discussion).

integration (e.g., Grant, Frimanson, & Nilsson, 2016; Teerikangas, Véry, & Pisano, 2011). In summary, these studies reveal a myriad of factors and perspectives that affect not only different outcomes of acquisitions but also specifically the task of identifying synergy areas and estimating synergies.

Following the results from these studies, we argue that the task to be accomplished by the acquisition manager and finance manager, i.e. to assess and estimate synergies as well as the costs for their implementation, was highly uncertain due to the multitude of factors influencing the outcome of the acquisition. Therefore, this task did not easily lend itself to an analytical analysis by decomposing the factors and their interrelations into an analytical model, even though for example benchmarks with previous, similar transactions probably could be used, at least as a starting point. As pointed out earlier, we could not find any such analytical process in the data.¹⁰ For the synergy estimates, we could not identify any underlying calculations or assumptions, apart from the percentages used to calculate these estimates (e.g. cost reductions). Furthermore, in the interviews we could not find the underlying reasoning, and the acquisition manager was reluctant to explain in detail how they had made the estimates. This reluctance could have different reasons behind it. However, some studies have suggested that managers do not want to reveal that they use intuitive processes in judgments (Agor, 1986; Hensman & Sadler-Smith, 2011). In the study by Hensman and Sadler-Smith (2011) interviewees solved this problem of hiding their intuitive processes by trying to back up their judgment with 'objective' data.

Our suggestion that the identification and description of synergy areas and especially the estimation of synergies was based on intuitive expertise is also supported by empirical research on managers. For example, research shows that in tasks that could be compared with our case, like judgments of early-stage investments (Huang & Pearce, 2015), judgments of capital investments (Agor, 1986; Burke & Miller, 1999), and judgments of credits (Hensman & Sadler-Smith, 2011; Lipshitz & Shulimovitz, 2007), practitioners use intuitive processes. In a more detailed manner the study by Burke and Miller (1999) is interesting as, like our study, it is based on interviews with experienced professionals responsible for significant project and program development. Their study also provides an example of the use of intuitive processes in a situation when "to fill in the blanks when quantitative data are lacking in strategic business decisions" (Burke & Miller, 1999, p. 94). This could be seen as being similar to the case of estimating synergies, even though it is only one example from their study. However, their study also shows that intuitive processes are used in judgments when uncertainty is pervasive and in tasks such as formulating budgets, estimating prices, and selecting investments. Tasks like these could be seen as judgmental, resembling the characteristics and tasks of estimating synergies.

5.2. The experts

In the following we show that the acquisition manager and the finance manager had long experience of working in Acquirer and with acquisitions. We also show that conditions for transforming experience into expertise, i.e. deliberate practice consisting of repetition, feedback and gradual refinement have been present. Consequently, we suggest that the practitioners carrying out the task had expertise in the domain of making and assessing acquisitions.

The domain of expertise in the present study concerns assessing and managing acquisitions. Specifically, it is the ability to identify and describe synergy areas (i.e. the strategic rational) and to estimate the value of synergies and the costs for their implementation (i.e. the financial rational). Furthermore, in our study expertise is not necessarily a matter of achieving superior performance, which is very difficult to define and evaluate in acquisitions (Ericsson & Lehmann, 1996), but rather of reaching what could be considered to be a sufficient level of performance (i.e. the strategic and financial rationales identified are fulfilled).

The practitioners performing the task of identifying and describing synergy areas and estimating synergies and the costs for their implementation were the acquisition manager and the finance manager of the division. Even though Acquisition control, the sales manager of the division, the manager supporting the acquisition manager and the legal manager, also played a role in this task, we could find few differences in perception of the strategic and financial rationales from those of the acquisition manager and finance manager. The same observation was made about Acquisition control (i.e. their views did not diverge from those of the acquisition manager and finance manager). On the contrary, the finance manager considered the input from Acquisition control valuable and positive, as illustrated in the following quote from the finance manager. "It is useful to have someone like [someone from Acquisition control] who says: but why would this be good and what do you mean by this, because I do not understand it. And that's, really great, I have to say." The main difference in perceptions observed was that the sales manager had a more optimistic view of additional sales than the acquisition manager and finance manager. As a result, the figure of additional sales provided by the sales manager was adjusted downwards by the acquisition manager and finance manager. As the finance manager described it: "We had no increase in product sales at all the first two years. Market [the marketing department] thought we were idiots."

The acquisition manager had worked in Acquirer for 20 years, in different positions (i.e. R&D, production and as a general manager), and during the last ten years with acquisitions, often as acquisition manager. Thus, the acquisition manager had extensive experience in managing acquisition processes and also in the specific task of identifying and describing synergy areas and estimating synergies and costs associated with their implementation. Furthermore, the acquisition manager had

¹⁰ On the other hand, for tasks lending themselves more readily to an analytical process, calculations were provided and made. As an example costs for implementation and realization of rationales had fairly detailed calculations.

been responsible for setting up processes and structures used in Acquirer for managing acquisition processes. The acquisition manager was also part of the corporate M&A council responsible for updating these processes and structures. Moreover, the acquisition manager seemed interested in continuing to learn, for example by recently having attended an M&A course held by a business school. On the strategic side, the acquisition manager had acquired knowledge from several years of operational experience in the company. During these years he was also involved in the strategy work of the division, including being responsible for the acquisition strategy. The finance manager had worked in various finance functions in the division for more than 20 years, the last five years as a finance manager. The finance manager had been involved in several acquisitions but did not have as extensive experience as the acquisition manager. The finance manager was a member of the management team of the division and was therefore involved in the strategy work.

It should also be noted that repetition and feedback from acquisitions were present as Acquirer was a highly acquisitive company, having made more than seventy acquisitions during the ten-year period preceding the acquisition of Target. Most of these acquisitions had several characteristics similar to that of Target such as size, location abroad, and being privately owned. Moreover, each acquisition was followed up as part of the regular monthly reporting. Furthermore, after closing an acquisition, a specific follow-up report was made and sent to the management team of Acquirer and the board. The report was produced for year one and year two. The finance manager was involved in preparing the follow-up report. The acquisition manager also read the follow-up reports as a member of the M&A council. Statements from the interviews also indicate that, especially for estimating the accounting numbers, the acquisition manager had learned how to do this, at least in comparison with less experienced practitioners (See Tables 4 and 5).

5.3. A note on the outcome of judgments

The follow-up interviews, done three and half years after closing and focusing on the integration process and the outcome of the acquisition, indicate that not all of the identified synergies were realized. However, the overall outcome, from a strategic and financial perspective, was considered to be successful. We also asked whether, and if so how, activities and events in other acquisitions were different from the acquisition of Target. Even though differences could be found, for example in a few very large acquisitions, we could not find any significant differences in the way the production of strategic and financial rationales were made. Consequently, we suggest that the way the production of strategic and financial rationales was made in the case of Target were typical also for other acquisitions made by Acquirer and that it led to skillful and appropriate judgments with successful outcomes. This conclusion is further supported by financial data showing that total annual shareholder return for the period 2006–2015 was on average about 15% for Acquirer compared with the average total annual return for Nasdaq Stockholm for the same period of approximately 9%. In addition, Acquirer is typically portrayed as a successful acquirer in the business press. Furthermore, in interviews with M&A experts, Acquirer was described as a successful acquirer.

6. Conclusions

The case study shows that the production of strategic and financial rationales, including the numbers and cash flows used in financial models, is a 'hidden' part of the capital investment process. The overall conclusion is that the process is affected by judgments based on expertise, to a large extent arising from intuitive processing (e.g., Dane et al., 2012; Kahneman & Klein, 2009). Similar to other tasks, like assessment of early-stage investments (Huang & Pearce, 2015), judgments in acquisitions are based on a combination of intuitive expertise and reflective analytical processes (Shapiro & Spence, 1997). Given the task complexity and inherent uncertainties in estimating synergies and the costs for their implementation (e.g., Carr et al., 2010; Grant, Frimanson, & Nilsson, 2016; Haka, 2007; Harris et al., 2009; Very & Schweiger, 2001), we conclude that intuitive processes (e.g., Evans, 2008; Evans & Stanovich, 2013) based on expertise (e.g. Ericsson, 2006) have an important role in the production of strategic and financial rationales used in strategic capital investments.

Arguably, and in line with our overall conclusion, the quality of a decision to pursue an acquisition is dependent on the practitioners producing the strategic and financial rationales and the characteristics of this task. Consequently, as the numbers and cash flows are used as input in the financial models, the process affects the quality of the evaluation of capital investments (e.g., Haka, 2007; Harris et al., 2009). This implies that the expertise of the practitioners is of utmost importance for capital investment decisions (Ericsson, 2006; Kahneman & Klein, 2009; Simon, 1992), probably more so than the tools used. That conclusion stands in contrast to the capital investment literature, in which the design of the tools is in focus (e.g., Abdel-Kader & Luther, 2008; Koller et al., 2015; Verbeeten, 2006). In the broader field of strategic management, a similar tendency can be found, especially in the studies of how strategies affect the design and use of different management control activities, such as budgeting, capital investment, performance measurement etc. (e.g., Alkaraan & Northcott, 2006; Carr et al., 2010; Shank & Govindarajan, 1993). Even though this important literature explains how contextual factors affect the design and use of capital investment tools, it does not contribute a great deal to our understanding of how the strategic rational and financial rationales are produced.

In conclusion, the present study shows that there are reasons to question whether the design of the tools is as important as is often claimed in the literature (e.g., Koller et al., 2015; Verbeeten, 2006). Instead, it seems like practitioners with intuitive expertise do not need the support of sophisticated tools; rather they rely on their own capacity as experienced practitioners to make informed decisions, even in situations with a high degree of uncertainty (e.g., Elmassri et al., 2016; Kahneman & Klein,

2009). The findings also contribute to our knowledge of strategic and financial considerations and their relations in strategic capital investments (Abdel-Kader & Dugdale, 1998; Alkaraan & Northcott, 2006; Carr et al., 2010; Carr & Tomkins, 1996, 1998; Harris et al., 2009; Shank, 1996; Slagmulder, 1997) by showing how strategic and financial rationales are produced and how these rationales are related by adding the theory of intuitive expertise and using the strategic concepts of relatedness (e.g., Kim & Finkelstein, 2009; Larsson & Finkelstein, 1999; Palich et al., 2000; Wang & Zajac, 2007) and synergies (Bradley et al., 1988; Seth, 1990; Seth et al., 2002).

More specifically the findings show, that before initiation of the acquisition process, there is an overall strategic idea with the acquisition which has been discussed and approved by decision-makers. This strategic pre-requisite is in line with previous research (e.g., Alkaraan & Northcott, 2006, 2007; Lumijärvi, 1991) and can be viewed as an influential pre-decision control mechanism (see also Huikku, Karjalainen, & Seppälä, 2018). Subsequently, the findings show that in the initiation phase the strategic idea is refined into strategic rationales, based on relatedness between the acquirer and target. However, only some of these rationales are translated into financial rationales, i.e. quantified synergies based on rough estimates. We argue that this process to a large extent is based on judgments using intuitive expertise. Thus, from a structural and formal point of view, the strategic and financial rationales are very much de-coupled. This adds empirical evidence and theoretically informed explanations to the suggestions of Alkaraan and Northcott (2006) that judgments and intuitive processes play a significant role in the linkage between the strategic and financial dimensions of capital investments. This is perhaps not surprising considering that one of the characteristics of intuitive expertise is being able to make decisions with complex underlying relationships (e.g., Dane & Pratt, 2007; Laughlin & Ellis, 1986), such as the relationship between identifying synergies (strategic rationale) and assessing them (financial rationale) in an acquisition (Shapiro & Spence, 1997).

Furthermore, informed by research in cognition, our study surfaces intuitive expertise as an important 'hidden' activity of judgment and intuition in strategic investment decision-making. Hence, it contributes to the stream of research in strategic investment decision-making examining cognition and managerial judgments (Alkaraan & Northcott, 2006, 2007; Elmassri et al., 2016; Emmanuel et al., 2010; Harris, 1999; Harris et al., 2009). This research suggests that managerial judgments and intuition have "at least the same potential as analytic techniques to influence the CID [capital investment decision]" (Emmanuel et al., 2010, p. 478). However, it is less clear how managerial judgment and intuition should be studied in this particular context. This has led scholars studying capital investment decision-making to treat judgments and intuition as something that takes place 'inside' the individuals involved. It is treated as something 'hidden' from outside observation. An exception to this is the studies by Emmanuel et al., 2010 and Harris et al., 2009, which identifies cognitive processes of heuristics, framing and consensus in strategic investment decision-making. These cognitive processes could, according to the works of Kahneman (2003) and other researchers, result in judgmental biases negatively affecting strategic investment decision-making. In contrast to this, our study shows how the presence of expertise and the character of the tasks can result in appropriate judgments positively affecting strategic investment decision-making.

Even though previous studies suggest that personal experience is important for managerial judgments (Alkaraan & Northcott, 2006, 2007; Elmassri et al., 2016; Emmanuel et al., 2010; Harris et al., 2009), they neither define or describe personal experience, nor how it affects judgments. In our study we show that the individuals involved in the production of strategic and financial rationales had acquired expertise in their domain, i.e. at least ten years of relevant experience and continuous feedback (Ericsson, 2006; Ericsson & Ward, 2007; Simon & Chase, 1973). Arguably, this led to a successful outcome. Consequently, the concept of expertise provides theoretical insights that enable a fine-grained analysis of how personal experience affects managerial judgments. Furthermore, the suggestion that long experience is not sufficient but requires deliberate practice, including feedback (Ericsson, 2006), provides an explanation for why post-completion audits of strategic investments are important. The primary purpose of these audits, formal or informal, is to enhance organizational learning and accountability (e.g. Huikku, 2007; Huikku & Lukka, 2016). Post-completion audits thus serve as important feedback for development of expertise and organizational learning.

Finally, previous research has not described or elaborated on how the task's character affects judgments. We show that the task of producing strategic and financial rationales and their interrelations is highly complex, involving a myriad of factors and perspectives that cannot easily be broken down into an explicit formal and analytical model. Consequently, this complexity lends itself to holistic reasoning based on intuitive expertise and leading to appropriate judgments. This suggests that a detailed examination at the task level is required in order to understand how judgments are made and affect strategic investment decision-making. Moreover, our findings on task complexity supports, and can partly explain in more detail, the findings by Elmassri et al. (2016) which show that under extreme uncertainty the use of intuition, experience and judgment is frequent (see also Huang, 2018; Huang & Pearce, 2015).

Given the lack of research on the production of strategic and financial rationales and the exploratory nature of this study, the findings should be interpreted with some caution. Even though we argue that the acquisition is a successful one, we acknowledge that capturing the outcome of acquisitions is complex and to some degree dependent on the time frame chosen, the definition of success etc. (e.g. Anderson, 2013; Meglio & Risberg, 2011). However, we hope that this study can further increase the interest in the production of strategic and financial rationales and how they influence capital investment decision-making. There are many worthwhile avenues for future research in the area, especially with a research design based on qualitative methodologies. A key area concerns the question of what tasks and task characteristics are suitable for intuitive processes based on expertise. Interestingly, research suggests that intuitive expertise leads to more appropriate judgments for complex tasks than a reflective and analytical process does (Dane et al., 2012; Hammond, Hamm, Grassia, & Pearson, 1987;

Khatri & Ng, 2000). Another research area relates to expertise and the question of how relevant expertise is acquired and also kept within a company.

Declarations of Interest

None.

Submission declaration and verification

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