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# Label in Context: On the Enterprise Resource Planning System in a Medium-Sized Enterprise

## ABSTRACT

*The purpose of this study is to shed light on the adoption of an enterprise resource planning (ERP) system in the context of a medium-sized enterprise. Qualitative research approach and case study method are utilised in the study. The empirical analysis is based on interviews, archive data and the author's employment experience in the enterprise. Data are described and analysed using the theoretical concept of interpretative viability (Benders and van Veen, 2001) from the management fashion literature that seeks to distinguish between labels and contents regarding different organisation concepts. The study illustrates how a medium-sized enterprise can benefit from ERP adoption in its accounting practices. However, the ERP system has a relatively mundane character in the enterprise: it is mainly used for bookkeeping and electronic invoicing. The study suggests that there is a considerable amount of interpretative space in the concept of the ERP system, and thus in the nature of ERP adoption. It emerges in the system's ambiguous modular character and in promises about performance enhancements concerning the execution of accounting routines. The study also considers how the software vendor exerts influence during the adoption process. The paper contributes to accounting research by elucidating the adoption of an ERP system in the context of a medium-sized enterprise and by using the theoretical concept of interpretative viability to analyse the ERP system and its adoption.*

**Keywords:** Accounting, case study, enterprise resource planning systems, interpretative viability, medium-sized enterprises

## 1. INTRODUCTION

Enterprise resource planning (ERP) systems have received increasing attention from scholars of management accounting and accounting information systems in the past decades (Grabski et al., 2011). In general, researchers have attempted to investigate the implications of ERP system adoptions for management accounting and control practices, as well as for firm performance (Rom and Rohde, 2007). For instance, Sánchez-Rodriquez and Spraakman (2012) suggest that ERP systems impact management accounting and management accountants on physical, transactional and informational levels. Kanellou and Spathis (2013) argue that ERP systems may provide several benefits for accounting processes. Dorantes et al. (2013) suggest that the implementation of an enterprise system may improve the accuracy of a company's management forecasts. Taken together, it can be assumed that the adoption of an ERP system represents an important organisational action that is worthy of scholarly interest. Although previous accounts have offered considerable accounting-related insights, a few omissions can be recognised. Many of the works have taken place in the context of large, often multinational enterprises (Quattrone and Hopper, 2005). So far there is scant research that has explicitly examined ERP systems in small- or medium-sized enterprises (Teittinen et al., 2013, p. 281). Previous research has also tended to treat ERP systems as coherent technological entities that are merely modified during the implementation phases. The specific nature of ERP systems, in terms of their notable adaptability, has attracted less attention from accounting scholars (Quattrone and Hopper, 2006). Moreover, the extant scholarship has mainly focused on the usages of ERP systems in enterprises, while researchers have tended not to incorporate the perspectives of the software vendors into the discussion (Wagner et al., 2006; see also Wagner et al., 2011). Based on the above considerations, the purpose of this study is to shed light on the adoption of an ERP system in the context of a medium-sized enterprise. Here, ERP adoption refers, in a broad sense, to the background situation regarding the legacy system, software selection and the system's enactment in accounting. Based on a review of the relevant accounting literature, this paper raises the following research question: How is the ERP system and its adoption constructed in interplay between the enterprise and the software vendor?

This paper presents a case study in which a medium-sized enterprise abandons its legacy system and employs an ERP package. It analyses ERP adoption through an empirical analysis based on the author's employment experience in a medium-sized enterprise, archive data and interviews that took place retrospectively after the implementation. To understand the occurrence of an ERP system in a medium-sized enterprise, the study presents a generic discussion on organisation concepts (Benders and van Veen, 2001; see also Heusinkveld et al., 2013). This theoretical guideline focuses on dynamics in production and the usage of different concepts. It does not take the fashionable entities that exist in organisations at face value, but attempts to

distinguish between labels and contents. More specifically, the paper draws from the concept of interpretative viability (Benders and van Veen, 2001) in the analysis. Herein, the notion of interpretative viability refers to the inherent ambiguity that often exists in different organisation concepts.

As a result of the analysis, the paper elucidates how the system and its adoption are constructed in conjunction with the adopting enterprise and the ERP software vendor; thus, the study recounts the relationship between these two actors. Due to the vague modular contents of the ERP system and the persuasion enacted by the software vendor, the paper illustrates the occurrence of interpretative viability in both the system and the nature of its adoption. Most importantly, the study suggests that interpretative viability makes an ERP system more easily adopted by an enterprise, which also has implications for research on ERP systems in accounting. Yet, the study illustrates how a medium-sized enterprise can benefit from the adoption of an ERP system. The new software package, with its tools for efficient execution of accounting routines, is perceived as a meaningful improvement among accountants. The paper answers the recent calls for an investigation into ERP systems in the context of smaller enterprises (Granlund et al., 2013, p. 276) that includes the vendor's perspective in the analysis (Granlund, 2011, p. 14) and uses a rigorous approach to the research of these systems (Grabski et al., 2011, p. 66). It is also hoped that this study provides generic insights on organisation concepts for organisation researchers.

The study is divided into six sections: the second section reviews the previous research on ERP systems in accounting; the third section presents the theoretical guidelines; the fourth section outlines the research methodology; the fifth section comprises the empirical part of the study; finally, the sixth section concludes the paper.

## 2. ERP SYSTEMS IN ACCOUNTING RESEARCH

Many organizations invest huge amounts of money in enterprise resource planning systems (ERP), which are complex and sophisticated computer systems that coordinate the activities of organization units. [...] Some analysts put the average cost of an ERP system at about \$15 million with one system reputedly costing \$400 million. And not all ERP implementations are successful (Atkinson et al., 2012, p. 492).

50 As the above excerpt intimates, ERP systems have gained an astounding ascendancy and a global resonance in business life in recent years. ERP packages are increasingly becoming the standards for organising and managing business activities because of their alleged benefits (Grabski et al., 2011). Enterprises adopt these systems in an attempt to increase real-time information, to improve information generation for decision making and to integrate applications (Spathis, 2006, p.

73). According to Davenport (1998), ERP systems are commercial software packages that seamlessly integrate all of the information flowing through an enterprise. The basic idea of an ERP system is that a single central database draws data from, and feeds data into, several applications supporting diverse functions. In this light, ERP systems are modular, enabling enterprises to adopt only the needed parts of the software. As a result of their widespread adoption, ERP systems have gained increasing research attention from accounting scholars.

There is a substantial body of literature focusing on the transformative nature of ERP system adoption in respect to firm performance and management accounting (Rom and Rohde, 2007, p. 41). Hunton et al. (2003) evidence that ERP implementation may improve firm performance ratios compared to non-adopters. Dorantes et al. (2013) argue that ERP system implementation may have a positive effect on a firm's internal information environment and consequently on decision making. Nicolaou and Bhattacharya (2006) suggest that enterprises that make early enhancements to their systems enjoy better firm performance compared to enterprises that make late enhancements. A study by Hayes et al. (2001) shows positive market reactions to ERP system implementation announcements. Scapens and Jazayeri (2003) view the implementation of ERP system as having the potential to promote changes in the character of management accounting (see also Hyvönen, 2010). Quattrone and Hopper (2005) and Dechow and Mouritsen (2005) investigated how ERP systems are exploited in the creation of organisational control and integration in the context of multinational enterprises. They found that relationships between human beings and modern information technology may be extremely complex, as ERP has the ability to narrow distances across time and space, making objects more visible. Chapman and Kihn (2009) indicate that there is a direct association between the degree of information system integration and perceived system success. The level of information system integration has also been found to be associated with several of the design characteristics that make up an enabling approach to budgetary control. They, in turn, are found to be associated with perceived system success and aspects of performance. While these studies provide valuable insights about the implications of ERP system adoption in terms of firm performance and management accounting, they tend to pay attention to enterprises that are large, and often multinational. Also, these studies often empirically focus on the implementation or usage phases of ERP systems.

Moreover, researchers have either explicitly or implicitly considered the specific nature of ERP systems and their adoptions in research reports. There are studies that recognise their malleable characteristics. Granlund and Malmi (2002) illustrate that many accounting tasks exist in separate systems, despite ERP adoption. Hyvönen (2003) points out the selective nature of ERP adoptions: a company having implemented at least one module is typically considered an ERP adopter. Hyvönen et al. (2009) report a situation in which a previous accounting system was transferred to the new ERP-based infrastructure. Drawing upon actor-network theory and science

and technology studies, Quattrone and Hopper (2006) sought to theorise the above-illustrated phenomena. They argue that the definition of an ERP system, namely SAP, is never stable, as organisations continuously translate and customise the systems in association with software developers (see also Teittinen, 2008). In their case study, Wagner et al. (2011) document the negotiations on the modification and configuration activities during the software package's creation. In addition, there are studies that report the challenges and benefits of the use of ERP systems. This is an important stream of inquiry, since ERP implementation projects are typically associated with notable risks (see Bradley, 2008). A case study by Teittinen et al. (2013) reported a situation in which ERP adoption in a medium-sized enterprise did not fully meet the expectations of top management, even though the company had implemented all the main modules. They argue that employees either do not know how to use ERP, or how to internalise it. Kanellou and Spathis (2013) suggest that ERP adoption results in broad accounting benefits, such as those related to operational, organisational, managerial and information technology, and satisfaction with the performance of the system prevails among accountants. They also argue that the number and type of ERP modules implemented are not related to user satisfaction (see also Spathis, 2006). In sum, these studies take the possible technical modifications of ERP systems during their implementations into consideration. Table 1 provides the summarised findings from the literature mentioned above.

**TABLE 1. ERP systems and accounting research**

Main topic	Author(s)
ERP implementation's impact upon firm performance, information environment or market value	Hunton et al. (2003); Nicolaou and Bhattacharya (2006); Dorantes et al. (2013); Hayes et al. (2001)
ERP implementation's impact upon management accounting and management control practices	Granlund and Malmi (2002); Scapens and Jazayeri (2003); Dechow and Mouritsen (2005); Quattrone and Hopper (2005); Hyvönen (2010); Hyvönen et al. (2009); Teittinen (2008)
The relationship between information system integration and management control	Chapman and Kihn (2009)
Benefits and challenges of ERP implementation for accounting-related functions	Kanellou and Spathis (2013); Spathis (2006); Teittinen et al. (2013)
ERP implementation's open-endedness due to customisation and configuration	Quattrone and Hopper (2006); Wagner et al. (2011); Hyvönen (2003)
Critical success factors for successful ERP implementations	Bradley (2008)

It is important to note that the research papers reviewed provide manifold, valuable insights that are not easy to capture within a single table. All in all, it can be argued that the literature on ERP systems holds great promise with respect to complex issues such as the impacts and opportunities arising from ERP adoptions. However, most analyses have addressed the effects of ERP system implementations in the context of big businesses. Relatively little research has been devoted to the processes of ERP adoptions and how they are affected by software vendors. There have been interesting findings that have elucidated the specific nature of ERP system adoption, but these studies tend to treat ERP systems as coherent entities that are just modified when implemented. Based on these considerations, the research question of this study is: How is an ERP system and its adoption constructed in interplay between the enterprise and the software vendor?

### 3. CONCEPTUAL AND THEORETICAL GUIDELINES

This study resonates with the theoretical discussions on organisation concepts that have recently emerged among organisational and management accounting scholars. Organisation concepts comprise 'more or less coherent, prescriptive visions of organizational design' (Benders, 1999, p. 624). In this light, organisation concepts typically offer solutions for a wide variety of managerial and organisational issues, as they include specific knowledge in relatively compact forms. Admittedly, many entities in the field of management accounting fall into the category of organisation concepts. Balanced scorecards and activity-based costing are perhaps the most well-known examples (see Zawawi and Hoque, 2010).

On a generic level, the discussion on organisation concepts has two characteristics. First, organisation concepts are not regarded as coherent entities. This insight has provoked two interwoven strands of research. One strand has focused on the complexity of corporate and management accounting practices in international settings. Some studies suggest that these organisational practices have been increasingly converging as enterprises adopt similar techniques and models (e.g. Granlund and Lukka, 1998). Other studies have paid attention to adaptations of management practices in local contexts that may result in divergences and variations in practices between 'macro' and 'micro' levels (e.g. Jazayeri et al., 2011). The second strand has analysed the features of corporate and management accounting practices that can be regarded as applications of different organisation concepts. This strand is closely related to the discussion of management fashions. Benders and van Veen (2001) have explained the popularity of organisation concepts by referring to the notion of interpretative viability. Interpretative viability implies that many organisation concepts include interpretative space: they allow different interpretations and invocations for multiple agendas. Thus, organisation concepts are multifaceted constructs that are far from unambiguous (Giroux, 2006). As evidence, Malmi and Ikäheimo (2003) illustrated that

companies tend to understand and apply value-based management in different ways. Portrayals of organisation concepts as understandable entities are somewhat inconsistent, since these concepts typically offer explicit promises of performance improvements and emphasise successful users (Benders and van Veen, 2001). Organisation concepts and the occurrences of interpretative viability within them are closely associated with labels. Labels designate, but they also connote and imply. Admittedly, interpretative viability may eventually lead to situations in which the actual contents of the label can be something different from its original and obvious contents. Against this backdrop, ‘loose couplings’ may result in occasions in which new interpretations are unrecognisable to the original advocates of the concept. According to Benders and van Veen (2001), organisation concepts are prone to interpretative viability because they mainly exist on a conceptual level (see also Rogers, 1995, p. 12). The absence of material features or components is also noticeable in the concepts used in management accounting. Although Ax and Bjørnenak (2007) suggested accounting innovations consisting of both design characteristics and rhetorical elements, in fact, most concepts are comprised of ideational and textual components. ERP systems are an interesting concept since they certainly include material components as well.

Second, organisation concepts do not emerge in a vacuum. Their emergence requires producers and users of concepts that are often conceptualised as supply-side and demand-side perspectives. A supply-side view refers to producers and mediators of concepts. It considers concepts as institutional requirements that are apparently needed in increased competition. A demand-side view refers to users of concepts. It is based on efficient choice criteria in which more or less rational arguments play an important role in adoption (Ax and Bjørnenak, 2007). Interpretative viability can be a useful resource for both sides. For actors on the supply side, it makes a concept compatible with different social contexts and evidently increases the size of the market (Heusinkveld et al., 2013). Interpretative viability also enables the bundling and mixing of existing concepts (Ax and Bjørnenak, 2005; Modell, 2009). For actors on the demand side, interpretative viability makes it easier to adopt fashionable constructs, as it is possible to implement them selectively. In most cases, organisation concepts are adopted purposefully, but sometimes they may be adopted incrementally (e.g. Jazayeri and Scapens, 2008), and perhaps even unintentionally. Admittedly, if interpretative viability makes the adoption of the concept easier, it may reduce the efficacy of the concept in an organisation. Table 2 outlines the main points of organisation concepts.

**TABLE 2. Key concepts and their definitions related to organisation concepts**

<b>Concept</b>	<b>Brief definition</b>
<b>Label</b>	<b>Popularised descriptive and distinctive word or phrase</b>
<b>Content</b>	<b>Material or nonmaterial substance</b>
<b>Interpretative viability</b>	<b>Adaptability for different interpretations and agendas</b>

#### 4. METHODOLOGY

The qualitative research methodology, drawing on the socially constructed nature of reality (Berger and Luckmann, 1987), and the case study method are applied in the study. Generally, the case study method has been considered as suitable for studies that operate with research questions that begin with 'how' or 'why' (Yin, 1994). This study has similarities with descriptive and explanatory accounting case study approaches. While the case study describes observed accounting practices, theory is used to understand and explain the specific phenomenon (Ryan et al., 2002, pp. 143–144). Various types of data are used in the study. The paper originates from the author's employment experience as an accountant in a medium-sized enterprise. The author worked for almost eight months as a part-time accountant at Alfacon (all names have been disguised), which included three periods: May 25th to August 28th, 2008 (five days a week); January 5th to April 1st, 2009 (three days a week); and May 18th to July 31st, 2009 (five days a week). As part of his employment duties, the author interacted with the accounting staff (especially with the chief accountant and the administrative manager), with other employees and with those in leading positions. The author's responsibilities were mostly similar to those of the other accountants; they comprised bookkeeping-related tasks. Turnover at Alfacon comprised some 25 million euros, and the company employed roughly 80 people at that time. However, only seven people were involved in accounting and the enterprise lacked some management accounting and controlling functions.

Since his first day of work, the author was acquainted with the ERP system. Alfacon implemented an ERP package in autumn 2007, and thus abandoned its modular legacy system that had been in use since 1997. During the author's second employment period, six interviews were carried out. The interviewees were the managing director, the administrative manager (in charge of accounting), the construction manager, the operations manager, the chief accountant and an accountant. They represented all business units, were from different positions and performed various tasks in the organisation. These people used accounting software actively in their daily work. The average length of the 6 interviews was 45 minutes, and they took place in February and March of 2009. The interviews covered the ERP package and the generic accounting system. Since Alfacon had already implemented the package, the interviews provided retrospective views. The interviewees were asked not only for the facts, but also for their personal interpretations and opinions. Each interview was tape-recorded and transcribed verbatim.

The fact that a medium-sized enterprise had adopted a product from a 'value-laden' ERP label intrigued the author; an early draft of the case study manuscript was completed in autumn 2010. However, the author felt that he needed more data on the ERP adoption. After negotiations, he finally got access to confidential internal documents in autumn 2011. These materials supple-



mented the interview data. The archive material consisted of meeting minutes (ca. 75 pages), memoranda (ca. 45 pages), personal notes (ca. 10 pages) and email correspondence (ca. 25 pages). The correspondence included emails by employees of Alfacon, between its joint venture personnel and that of collaborating companies (enterprises in the industry are typically actively networked with each other), and with the software vendor. Archive data also included product descriptions (ca. 110 pages), brochures (ca. 10 pages), information leaflets (ca. 45 pages), procurement contracts (ca. 40 pages) and the final report on the project (6 pages). Altogether, the archive file amounted to approximately 370 pages of text. The author also used a few issues of the vendor's customer magazine. Since the research was concerned with the emergence of interpretative viability, this kind of 'naturally occurring' data was considered useful (Silverman, 2000).

To improve the general understanding of ERP markets, the author also contacted two industry experts who were not involved in the case. The interview with an experienced ERP consultant from a 'big four' accounting company lasted 50 minutes (January 26th, 2012), whereas the interview with a key accounts manager from a medium-sized ERP software company lasted 1 hour and 20 minutes (February 1st, 2012). Both interviews were taped. Figure 1 illustrates the timeline of key events and the author's actions regarding the case study.

Data analysis and construction of the empirical section took place as follows. First, the data were carefully read. After that, portrayals of the ERP label and its contents were scrutinised based on the following questions: What does the ERP label mean? How is the content of the system defined? Then, the data were organised into a series of chronological events, a strategy recommended in accounting case studies (Jack and Kholeif, 2008). The chronological form was employed to focus on the relationship between Alfacon and the software vendor. Finally, to ensure accuracy in the technical details, the administrative manager of the company checked the empirical section. To ensure the confidentiality of the actors involved, some irrelevant details were changed. This was a condition of securing access. To emphasise the context of the medium-sized enterprise, the section is offered with intricacies. However, the most colourful extracts from the data are not used (Silverman, 2000).

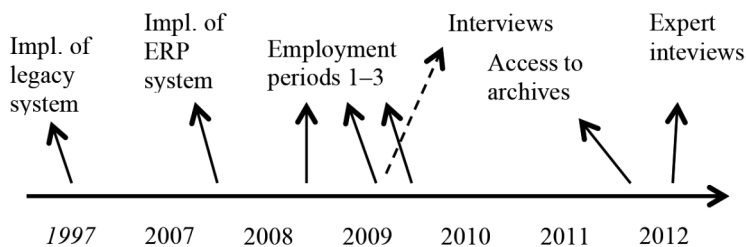


FIG. 1. *Timeline of key events and the author's actions*

## 5. DESCRIPTION AND ANALYSIS OF ERP SYSTEM ADOPTION IN ALFACON

### 5.1 Push from the software vendor to abandon the legacy system

On an April morning in 2006, the administrative manager of Alfacon decided to send an email to her colleagues and subordinates. The subject of her email was Hawk, an accounting software package that had been in use in the enterprise since 1997. The administrative manager was in charge of accounting and Hawk had increasingly caused anxieties for her during recent years. It had become seriously outdated, having not been majorly updated by the software vendor for five years. Updates, maintenance and customer support services had been gradually reduced over time. Eventually, the vendor decided to cease all development work concerning Hawk and devote all of its efforts to a new product already in the pipeline.

Understandably, the software vendor's actions were of concern to Alfacon. Its accounting unit comprised seven people who relied on standard software devoid of extra customisations. The administrative manager describes the unpleasant situation:

It was an old [system] and you did not necessarily receive any support. Many things in the system were fixed in order to ensure it would work. It had outlived its usefulness and the vendor said you do not receive any support or product development. [...] We very often considered that these features would be available in Eagle [the new system].

The above excerpt indicates that Alfacon felt a certain degree of pressure from the vendor to abandon its previous system. Eagle, mentioned in the quote, is a 'next generation' system, explicitly labelled as an ERP system. In the vendor's product line, Eagle replaced the obsolete Hawk. Admittedly, the aim of the vendor was to get its Hawk customers to adopt the new Eagle packages. Consequently, since the launch of the new product, the vendor had actively promoted Eagle to its existing customers. The quote also reveals the power exerted by the software vendor, who presented a picture of a new system representing part of a larger continuum in the progress of accounting software. From this perspective, the adoption of a state-of-the-art system is a natural transition from the legacy system, assuming a seemingly evolutionary character. An excerpt from the vendor's customer magazine from 2006 supports this interpretation:

[We] are not going to offer one new enterprise resource planning system that would replace the existing at once. Instead, we offer a flexible phased transition. At the beginning, we design new functionality that is bundled to existing products. [...] Functions of existing systems will be, little by little, replaced by these new functionalities. Therefore, the transition to new enterprise resource planning takes place gradually, in an evolutionary way.

However, the above definition could cause confusion. The vendor distinguishes between legacy systems and more modern software, but uses the notion of the ERP label somewhat freely. In the text, 'the existing' systems are associated with the ERP label. This may dilute the unique appearance of ERP and imply that the package draws from previous products.

In April 2006, the enterprise took the first concrete step toward replacing Hawk. The administrative manager asked the employees to report any defects in Hawk to her. In line with her expectations, replies from the accountants indicated that Hawk was infested with many usability problems. The administrative manager describes her own experiences in a blunt manner:

We were power users of the system and we were so fed up with the old and with the responses [from the vendor] that it [the vendor] does not enhance Hawk anymore.

As Hawk aged, the difficulties began to increase. The accounting staff had to learn to cope with the problems in the execution of accounting routines. To mention but a few, Hawk's bookkeeping module did not support group structures; the organisation planned to change from a single company structure into a group structure in a few years. Reporting performance measures was time consuming for the chief accountant, since precise framing of report templates was not possible without exportation to spreadsheets. Accounting ledgers did not receive electronic invoices and the purchase-to-pay cycle was inefficient, as paper invoices shuffled from hand to hand across the enterprise. Payroll responsibilities were difficult to fulfil since the number of different salary categories was limited and the persistent existence of former or retired employees in the accounts challenged the system. Maintenance of the share register was a tricky job as well. Changes to the register had to be made manually and its reporting template did not meet the standards set by tax authorities. Taking into account the context of the medium-sized enterprise and its limited resources, the accountants felt frustrated when confronting Hawk's deficiencies.

Although the future of Hawk did not look bright, the fact that accounting information appeared to play only a minor role in the enterprise mitigated the situation. Alfacon, as a relatively small company, had a somewhat informal and diverse management control system that was not based solely on the formal and concrete structures that typically appear in larger businesses. Over the years, the enterprise had used Hawk for traditional purposes, primarily recording transactions. Accounting information was backward looking and had a tendency to lack relevance. Cost accounting was based on loose cost centre accounting and Alfacon's cost-consciousness remained at a low level. The main management control tool was budgeting, but budgets were routinely set based on the previous year. Over time, the managers had learned to make do with scarce accounting information and interest in economic reports did not surface until the end of a financial year. The managing director explains his preferences, which are reasonable in the context of a smaller enterprise:

It is enough for me [accounting information], I have gotten used to coping with relatively scant information. [...] And I do know I could get more if I just asked. It does not come easily, but it is achievable, but now this is enough for us. I think simplicity is beautiful and effective.

But what kind of system was Hawk actually? Hawk was a DOS-based accounting software package produced by an established vendor, and arguably designed mainly for small- and medium-sized enterprises. Through the years, it had gained a relatively firm foothold in the market and stayed at the cutting edge of the vendor's catalogue for a long time. It had served the accounting needs of Alfacon well, as was simple and convenient to use. The Hawk package consisted of over 30 different modules, which included the following:

- Bookkeeping
- Fixed assets
- Accounts payable
- Accounts receivable
- Share register
- Salaries
- Human resources
- Stock activities
- Project planning
- Project management
- Marketing activities
- Sales reporting

The above list offers a reasonable description of the contents of the system. Hawk exhibits many similarities to the typical contents of the current ERP label. Its modular structure is attractive and aims at covering a wide range of different functions in an organisation. The naming of the modules connotes popular ERP terminology, such as accounting, human resources and logistics. The nomenclature of the implemented modules also implies that the system is an organisation-wide package. However, if modularity is the most distinctive feature of the ERP label, it introduces a question about the uniqueness of the ERP label, since even modular legacy systems are easily labelled as conventional retrospectively. In Alfacon, Hawk exists as a conventional system, while the vendor arguably attempts to couple it to the ERP label. The administrative manager recollects the use of the system:

It was a traditional bookkeeping system or we were not able to make good use of it. [...] Hawk included many modules that we did not exploit. [...] When we purchased it, we took all modules and possibilities and we paid much out of nothing.

According to the administrative manager, the accountants did not fully exploit Hawk and many functions remained untapped. This is still noticeable in present-day ERP adoptions, as enterprises are prone to acquire rather complex packages well beyond their realistic needs (see Teittinen et al., 2013, p. 290). The quote implies that this phenomenon may happen with the legacy system as well.

In sum, the software vendor and the perception of pressure from it propelled Alfacon's decision to adopt the new system. This illustrates that the vendor may have the power to dictate which products are used in different settings, such as in small enterprise contexts, while dependent organisations face a situation with little choice. A smaller enterprise does not necessarily have the capability to resist the perceived pressure and continue to rely on its existing system. Eventually, the idea of a project to initiate accounting software change crystallises in the enterprise.

## 5.2 Selecting a system from the ERP label

The accountants soon started to lean towards Eagle, despite having a few rather negative experiences with Hawk. The accountants had become familiar with the software company and its representatives over the years, and according to the vendor, Eagle belonged to the same continuum of software development. The administrative manager clarified the situation in an ironic manner:

[...] If we must find a new system [from another vendor], it will cause a lot of work for us. We are lazy accountants.

The quote captures an orientation in which accountants are not willing to face encounters with unfamiliar accounting technology. They are looking for a solution without notable risk. The quote also implies that the information system change project was pretty much an accounting-driven initiative. As such, first on the list of potential packages was Eagle, described in the vendor's customer magazine as follows:

Eagle has much functionality that is tailored for particular industries such as manufacturing, wholesale trade, construction, energy, and property management. The amount of users of Eagle in a company varies from one to 300, as the average is 10 concurrent users. For these companies, Eagle is a pivotal operative information system that is the basis for the running of successful business.

The above text excerpt implies that Eagle is an industry-specific solution designed to meet the needs of particular industries. However, the descriptive list of industries is rather exhaustive, which makes the system appear to be a more generic solution. The excerpt also intimates that Eagle is used mostly in small- and medium-sized organisations. Variation in the number of concurrent users per enterprise reveals that even smaller organisations have deployed these systems. This observation illustrates that an ERP system has to include viability to make adoption possible, even in small enterprise settings. But what does the ERP mean in this particular context? In documents produced by the vendor, there are many references to the ERP label, but its identifying

phrase is implicitly expressed. The quote below, from a customer magazine published in 2006, offers a good example:

An enterprise resource planning system is a critical tool for companies creating an underpinning to all operations of a company. [...] Nowadays much development takes place in electronic data interchange between organisations. Supply chain management, electronic invoicing, and other forms of electronic collaboration are examples of changes that have a major impact on organisations. This development is supported and promoted by enterprise resource planning systems.

Here, the software vendor portrays the ERP label as a solution used to enhance system integration and management control in organisations. The vendor also couples the latest development in electronic data interchanges with the ERP label. This emphasis shows the consideration given to ensuring the ERP label is associated with electronic data-processing-related features to make the package more appealing.

Against this backdrop, the accountants decided to participate in a demo session for Eagle that took place in the summer of 2006. The experience was so positive that it inspired them to call for an offer. However, the vendor's offer was disappointing. The offer, in terms of pricing, was too costly. The software vendor appeared to recognise its power over a customer that wished to maintain an existing relationship. In this situation, Alfacon had no other choice than to map new alternatives and invite offers from three other potential vendors. It is noteworthy that all of the vendors under consideration offered products with the ERP label. The overt aim of the enterprise, however, was not to find an ERP package, but a modern replacement for Hawk. It became clear that mapping and comparing different systems was a difficult task. In order to simplify the process, Alfacon dropped two of the potential vendors from the list and placed more emphasis on the remaining two. Eagle was still at the top of the list as it exhibited several advantages. Despite the seeming passivity of Eagle's sales people and the costly pricing, the vendor was familiar and the implementation and training phases would be short; two strongly desired qualities in a system.

Another alternative was to acquire a software package from a world-class vendor. This kind of ERP involved a more ambitious system, well known and widely used throughout the world. Besides its high price, the estimated implementation and training times were extensive. To investigate a negative notion, the accountants decided to visit a 'successful user' from the same industry that had recently implemented a similar system. The administrative manager was particularly disappointed, and described her feelings in an email to a colleague:

Many of us went with high hopes to [the reference] company. It came out that they use [the ERP] system only in basic bookkeeping and a separate electronic invoicing

program is linked to it. Even the general ledger provided by the vendor has not been satisfactory for the [reference] company and the substitutive ledger does not even work. [...] Accounting for fixed assets is carried out by relying on a small separate program.

The above quote illustrates that there is a risk of artificial use with ERP systems, which is when a state-of-the-art system is not substantially used. Arguably, this kind of use of the ERP system may occur when the contents of the system are tightly coupled to its original label and an enterprise attempts to adopt the system as wholesale. Therefore, the advantages of popular ERP systems were not accepted without question, even though the brochures promised convenient implementation.

When the accountants were warming to Eagle, the situation changed. The vendor launched a new package, Eagle-2, which consequently replaced the former Eagle. The release garnered interest, since Eagle-2 exhibited the latest developments and was still considered an industry-specific solution. According to the vendor, Eagle-2 was an independent product and not a facelift, although the name did refer to the former system. The brochure describes Eagle-2 as follows:

[...] Eagle-2 helps to steer business. This is achieved by effective built-in circles for routine tasks as well as by availability of timely and accurate information for decision-making. Eagle-2 is designed to work in a way that makes routine and overlapping tasks [...] possible to cut down efficiently. Cutting down of routine tasks brings about savings, customer service improvements, and thus, increases the competitiveness of your company.

The above text portrays Eagle-2 as a business solution. References to the elimination of routine tasks emphasise its functional superiority. The text also includes promises about performance improvements on an organisational level. Admittedly, Eagle-2 represents the organisation concept in its purest form, comprising a somewhat coherent vision of organisational design and practices. It also contains persuasion about the requirements that are essential to survive in a competitive environment. The brochure includes a list of attractive attributes to reinforce the sense of appeal and make the system more acceptable in different settings:

- Reliability and efficiency
- Strong industry focus
- Good controlling tools
- Effective reporting
- Adaptation to customer's needs
- Tailoring
- Integration into other systems
- Good data protection

These attributes portray Eagle-2 as a contemporary and innovative concept. The attributes also depict the system as an understandable and applicable construct. Consequently, the attributes reinforce the image of Eagle-2 as an all-encompassing system. Besides persuasion, Eagle-2

comprises concrete elements. The system does not differ from other packages of the ERP label as it includes various modules that offer applications and tools for a wide range of purposes. Eagle-2 embodies more than 70 modules. Naturally, modularity partly explains the viability of the system and its adoption. Alfacon decided to pick up over 40 modules related to various organisational activities:

- Bookkeeping
- Cash flow projections
- Group accounts
- Cost reporting
- Fixed assets
- Accounts payable
- Accounts receivable
- Data analyser
- Salary manager
- Human resources
- Share register
- Stock activities
- Resource management
- Project budgeting
- Project management
- Contract planning
- Tender activities
- Electronic invoicing

This list of modules presents ERP adoption as a technical modification. Seemingly, the package contains more than just plain accounting modules. It caters to diverse functions, such as human resources, materials and projects. A closer look, however, reveals the presence of interpretative viability in the package, in terms of its apparent ambiguity. The list implies that modules are not necessarily mutually commensurable: some modules are more vital than others. The concept of modules is not clearly expressed, as ambiguity prevails over the relationship between modules and functionality; for instance, several modules connote bookkeeping-related functions that eventually should comprise the complete accounting module. Certain vagueness in the contents of the modules also exists. The naming of some of the modules gives the impression of enterprise-wide functions, while the descriptions of the modules indicate rather mundane functions; for instance, the human resource module contains functionalities mainly used in the execution of payroll accounting. Consequently, an appraisal of the scope of the adoption becomes increasingly difficult.

Besides the modular contents, another characteristic is the potentially smooth adoption through easy conversion, an implementation style presented in the information leaflet:

Transition from Hawk to Eagle-2 is very easy! Current and historical data is possible to transfer to Eagle-2 by programmatic conversion, and thereby, monitoring of [the enterprise's] internal and external activities can continue from where it left off. The applications that have been used [...] in Hawk are easy to adopt in Eagle-2, as those applications in Eagle-2 have their original basis in Hawk.



Here, 'conversion' refers to a process in which data from the existing system are transferred to the new system. The quote illustrates how the vendor attempts to portray ERP implementation as a relatively simple process. Again, references to Hawk are present in the text.

Finally, in April 2007, there was an agreement on the Eagle-2 acquisition. Due to the vendor's transient delivery disruption, the Eagle system was first implemented and then instantly transformed to Eagle-2. In sum, the software vendor used the resource of interpretative viability to exhibit its system as an attractive and adaptable construct. Here, attractiveness referred to performance enhancements, while adaptability implied that the system was inherently made to fit with this specific context.

### 5.3 Enacting the system in accounting

Eagle's implementation was carried out somewhat smoothly. The software vendor expected a fast process: the system installation itself would take one working day and the data conversions would require one day per company. The enterprise had already acquired a group structure of three companies, and consequently, the conversions were expected to take three days. The vendor anticipated that people at Alfacon would take command of the conversions once the first conversion had been accomplished successfully under the guidance of an instructor. Table 3 shows the phases of the implementation process:

**TABLE 3. *The implementation schedule***

Date	Activity
15/06/2007	Planning
18/06/2007	Installation/test conversion
20/06/2007	Parameterisation
28/08/2007	Personnel training
31/8/2007	Production conversion
3/9/2007–8/9/2007	Post-conversion issues

The above table shows that relatively little time was budgeted for the implementation process in general. The schedule indicates that after seemingly successful installation and conversions, training and potential aftermath issues were quickly addressed. Finally, in September 2007, Eagle was in use. Soon it was upgraded to Eagle-2, which was mostly a technical matter. In this light, the explicit implementation moment is difficult to provide. The promises of the vendor were realised: the system was made to be implemented without hazards. The administrative manager recounts the process with a positive tone:

It went relatively easily. [...] Then we just checked that everything had been converted [...], it went surprisingly well in every company without any fixing.

The administrative manager's interpretation suggests that a successful ERP implementation, in respect to Eagle-2, does not require considerable time and effort. Arguably, perceived implementation success is related to the nature of ERP adoption. The sense of success is reflected by the objectives attempted. The chief accountant describes the benefits that were expected from the adoption:

Electronic properties were the first priority, that we could receive and send electronic invoices [...] and we could send annual tax notifications on salaries and dividends in file format to tax authorities.

This statement from the chief accountant intimates that something was expected from the new system, although the primary purpose was to replace Hawk. The expected impact may appear as moderate if it is appraised through the standards of full-blown ERP implementations that are valid in the context of larger enterprises. In this light, comparisons between different adoptions are not necessarily comparable; elimination of routine and perhaps overlapping tasks in recording transactions were regarded as important issues for accountants. The following comment by the administrative manager indicates that the system considerably guides the daily work of accountants:

[...] As we know how Eagle-2 works, we have tried to take guidelines from there and we do it like someone [the vendor] had thought these applications and functions should happen. We can change our procedures easier than we change the whole system to work; conversely, [...] it has to be some smart man who has thought how the enterprise planning system should work so that it works in the right order.

It can be argued that Eagle-2 operates as a multifaceted entity in the enterprise; the quote portrays Eagle-2 as a modern technological solution. The package offers a standard for organising business activities. Embedded circles guide daily work and consequently, accountants are willing to rely on the new system. The system is expected to perform the routine tasks that are considered as the most time consuming. The quote also illustrates that the ERP label is recognised by the administrative manager. However, while conducting interviews, the author got the impression that general understanding about the ERP label remained low in the enterprise. The administrative manager recognised the label, but she was not interested in its more accurate meanings. The accountants realised the modular character of contemporary software packages, but were not concerned with the wider implications of it. References to the ERP label did not appear in the discussions with the accountants; instead, they used expressions such as 'Eagle' and 'Eagle system' to refer to the package. It can be argued that the accountants were conscious of the implementation of new accounting software, but were not particularly conceptually aware of the ERP system adoption. An accountant considers the new package as follows:

Mainly it is only an update, an updated version. [...] When a system becomes a bit obsolete, you would like to get some new features.

Resistance to the new system was not seen among the accountants. They were willing to acquaint themselves with the new package, as they believed that Eagle-2 would increase job contentment through decreased workload. Although the accountants expressed confidence in the novel technology, Eagle-2 was associated with the legacy system. Like the above excerpt implies, it was regarded as an update to the previous system. Against this backdrop, the system appeared as a commonplace entity, and flamboyant characterisations were increasingly absent. The legacy system connotation may have diminished the sense of Eagle-2 as an inherently radical package.

Although Eagle-2 was primarily employed to serve an agenda for transaction processing, the system has penetrated the work of other professional groups besides those from accounting. Electronic invoicing checking and invoice approval have connected line managers and foremen to processes related to accounting. Therefore, no one should downplay the implementation of Eagle-2 as a meaningful organisational action. It has reinforced management control. Managers are increasingly inclined to make good use of the advanced reporting tools embedded in the package, and aspirations towards better reporting have risen. Interest in performance measurement has increased, even if people and operations have been densely located, and managers have had a tendency to rely on tacit professional knowledge, stemming from the profession of engineering, and their senses in decision making. The chief accountant describes the early usage:

Now we get needed information out from the system, but we could get more. [...] There is always information that would be nice to know, but we should discuss with people in charge what kind of reports they would like to receive and what kind of information we should produce more of.

The description implies that Eagle-2 could still perform more functions in the organisation; the chief accountant calls for a championing activity that would lead to an increase in the invocation of the system. The degree of system integration has not increased as a result of the implementation. Tasks of accounting, such as budgeting, operate in Eagle-2, but understandably, a wide range of separate systems remain on the organisational level. Rather, careful selection of modules has reduced the risk of implementing a package that is too extensive, and consequently, Eagle-2 was intended to consist of nothing too excessive or insufficient.

In sum, Alfacon's experience implies that even a smaller enterprise is able to implement an ERP system without notable difficulty, and the adoption is perceived as beneficial.

## 6. CONCLUDING DISCUSSION

The extant research provides insight (see Rom and Rohde, 2007) that helps to understand the relationship between accounting practices and ERP systems. This study joins the recent articles in pointing out the needs to investigate ERP systems in smaller enterprise contexts (Teittinen et al., 2013) and analyse the practices of software vendors (Granlund, 2011). Generally speaking, previous research has often tended to treat ERP systems as coherent entities that are merely modified during their implementations, while their viable nature has received less attention from accounting scholars. This study attempted to shed light on ERP adoption in the context of a medium-sized enterprise. Based on a review of the literature, the following research question was formulated for this case study: How is the ERP system and its adoption constructed in interplay between the enterprise and the software vendor? For the sake of clarity, the empirical analysis covered the background situation regarding the legacy system, software selection and the system's enactment in accounting.

The case study elucidated the construction of an ERP system and its adoption. The study suggests that there is interpretative viability in the concept of an ERP system, and thus in the nature of its adoption (Benders and van Veen, 2001). In this study, the interpretative viability emerged in two specific ways. The analysis illustrated that the software vendor used persuasion to portray its ERP system as a plausible solution in this setting. The vendor attempted to characterise its ERP system by referring to its relatively mundane functions. The contents of the system were exemplified by drawing upon features related to the elimination of routine tasks in accounting. This included explicit promises about executions of invoicing procedures using effective electronic forms. Admittedly, this kind of persuasion is closely related to the rhetoric generally apparent in organisation concepts (Ax and Bjørnenak, 2007), but it should be recognised that the persuasion mobilised by the software vendor also makes the system intelligible for potential adopters. The vendor's promises shaped the definition of the ERP system in this specific context (Quattrone and Hopper, 2006). The analysis also illustrated that the contents of the ERP system were presented in a fairly vague way. In particular, the naming of the modules appeared to be somewhat inconsistent and inaccurate due to a lack of clarity in the notions of modules and functionality. Against this backdrop, it would be challenging to gauge the scope of the adoption by using the number of implemented modules as a measure (see Hyvönen, 2003; Granlund and Malmi, 2002). However, the ERP adoption led to some changes in the accounting practices of the enterprise. After successful implementation, the accountants have been able to perform their tasks in an increasingly efficient manner. Most of the improvements occurred in the rationalisation of routine tasks, since the new system included an electronic invoicing capability that was intended to reduce the workload of accountants. It is also noteworthy that an interest in better reporting

increased among managers, which is in line with the findings of Scapens and Jazayeri (2003). However, this study supports the claims by Teittinen et al. (2013) that employees in smaller enterprises generally do not know how to use ERP systems. Drawing from the theoretical concept of interpretative viability (Benders and van Veen, 2001), it can be argued that the software vendor can stretch the concept of an ERP system to enhance its applicability to different settings. Hence, the present study attempted to distinguish between labels and contents (see Heusinkveld et al., 2013). This distinction helps to understand the variation within the label, beyond just the technical modifications. The term 'ERP' easily connotes prototypical versions of ERP systems (Davenport, 1998), while affordance for different interpretations and agendas may easily pass unnoticed. It is believed that the separation between the label and the contents is useful, since this analytical orientation does not accept the appearance of fashionable entities in organisations without question (cf. Quattrone and Hopper, 2006). So far, earlier articles have distinguished between local and global ERP software packages (Kanellou and Spathis, 2013, p. 222), and between ERP technologies and ERP systems (Dechow and Mouritsen, 2005, p. 695).

This study also elucidated the exercise of power during the ERP adoption process. The relationship between the enterprise and the software vendor may be unbalanced. It can be argued that the enterprise faced a fair amount of pressure when deciding on a new software package. The enterprise was stuck with a system that was becoming obsolete, since the vendor had gradually discontinued support and development activities regarding the modular legacy system. Under these circumstances, the enterprise had no recourse other than to start considering a substitute system, and soon began to lean towards the adoption of a new system from the existing vendor. In contrast to earlier studies, which recognised operational or competition-related intents behind ERP system adoptions (Spathis, 2006; Hyvönen, 2003), this case study presented a situation in which the ERP adoption was greatly impelled by the software vendor. On a general level, this insight has parallels with prior neo-institutionalist studies that have documented the active role of supply-side actors in adoptions of innovative concepts or apparent coercion existing in the adoption processes (see Hopper and Major, 2007; Järvinen, 2006). It is also noteworthy that the vendor attempted to build connections to the legacy system when promoting its ERP package. This finding resonates with Teittinen's (2008) insights about software vendors' efforts to construct optimistic realities and connotations regarding new technology.

This study should have implications for future research on ERP systems in accounting. Although the purpose of the study was neither to discuss ERP systems in a pejorative sense nor to dismiss their incidence as a serious organisational phenomenon, the occurrence of interpretative viability may cause challenges for accounting scholars. In respect to this study, an intriguing question is: How should this case be interpreted? One reader may see the empirical section as a story of real ERP adoption: An outdated legacy system had come to an end, and consequently,

the ERP system was adopted. Other readers may see the empirical section as a story of an ERP upgrade: The previous system, implemented in 1997, was already modular, and thus, the new system represented a software enhancement. In this case, the timeliness of this study on a unique ERP adoption in the context of a smaller enterprise is questionable. It should be pointed out that it was Davenport's seminal article, published in 1998, that popularised the idea of an ERP system for a wider audience. Moreover, this case study would be different if the background situation, in respect to the characteristics of the legacy system, was neglected. Another reader may see that a real ERP adoption has not taken place: The adoption did not seemingly meet the typical 'standards' for the rigorous adoptions that often take place in large enterprises (Dechow and Mouritsen, 2005; Quattrone and Hopper, 2005). Based on these considerations, this study illustrates that ERP adoptions are increasingly difficult to observe due to interpretative viability.

In general, this study has connected ERP systems to research programmes on organisation concepts (Benders and van Veen, 2001; Heusinkveld et al., 2013). The paper offers some insights for scholars interested in the production and usage of fashionable panaceas. The study illustrates that interpretative viability may also occur in the organisation concepts that comprise not only textual, but also concrete components. Existing research has mainly focused on incidences of interpretative viability in concepts that exist on the conceptual level (Ax and Bjørnenak, 2005). This article also gives a counterpoint to the prevalent discussions that emphasise voluntariness in the adoption of organisation concepts (cf. Benders, 1999, p. 630). This study illustrated that an enterprise may perceive pressure to adopt a particular concept. However, it should be emphasised that the study focused on a relatively small enterprise. Although this paper encourages research on popular concepts in the context of smaller enterprises, the results of the study were affected by this specific context. Besides the probable limitations in accountants' skills regarding effective ERP usage, it is obvious that conceptual understanding of ERP systems was relatively low in the enterprise. Teittinen et al. (2013) suggest that employees generally do not understand what an ERP system is. To extend their insights, the case study illustrated how the contents, and especially the meaning of the ERP package, were shaped by the software vendor. It can be argued that while interpretative viability makes an ERP system increasingly accessible, it also reduces efforts to implement the system in an enterprise. In line with recent theoretical thoughts by Gondo and Amis (2013), an entity with certain symbolic value may become unconsciously adopted when it deviates from its prototypical version in terms of its contents and meaning. In this case study, the software vendor even highlighted the similarities between the new package and the legacy system.

Nonetheless, the limitations of this study should be taken seriously. The case of Alfacon represents a specific case, and many of its features could be unique and anecdotal. The degree of interpretative viability is also easier to sense than to define and measure. The study was based on interviews, 'naturally occurring' archive data and the author's employment experience, but

the analysis was constructed retrospectively. Also, only a small number of interviews were conducted. Future research could address how purposefully the resource of interpretative viability is actually employed by the different actors in ERP adoptions. Alternatively, an analysis of the discursive legitimation would be an interesting direction for further research.

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