

Acquisition IT Integration

The Roles of Temporary Agency Workers

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ACQUISITION IT INTEGRATION: THE ROLES OF TEMPORARY AGENCY WORKERS

Complete Research

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Abstract

The IT integration of acquisitions consists an important challenge for the many acquiring organizations. Complementing existing research, this paper searches for explanation to differences in acquirers' abilities for acquisition IT integration in the external of the acquirer, by a study of the use of temporary agency workers. Following an analytic induction approach, theoretically grounded in the resource-based view of the firm, we identify the complimentary and supplementary roles consultants can assume in acquisition IT integration. Through case studies of three acquirers, we investigate how the acquirers appropriate the use of agency workers as part of its acquisition strategy. For the investigated acquirers, assigning roles to agency workers is contingent on balancing the needs of knowledge induction and knowledge retention, as well as experience richness and in-depth understanding. Composition of the acquisition IT integration team should consider the balance of these, in practice, commonly mutually excluding needs.

Keywords: Acquisition, Merger, IT integration, Agency worker, Consultants

1 Introduction

Acquisitions are used as strategic means for companies to create value through economies of scale and scope, by securing access to important technologies, or through enabling future growth options. Increasingly, the integration of the acquirer's and target's information technology (IT) resources (henceforth referred to as acquisition IT integration) is seen as being important for explaining value creating acquisitions (Henningson, 2014; Tanriverdi & Uysal, 2011; Tanriverdi & Uysal, 2013). The role of IT integration in acquisitions is generally attributed to IT integration being a prerequisite for operational integration (e.g. Mehta & Hirschheim, 2007; Toppenberg & Henningson, 2014; Wijnhoven et al., 2006; Yetton et al., 2013). 45-60% of the expected benefits from acquisitions are said to be directly dependent on the integration of IT systems (Accenture 2005, Sarrazin & West 2011). Since IT integration has been reported as the third most cited reason for acquisition failures (Rodgers, 2005), problems associated with acquisition IT integration constitute an important part of the explanation of performance variance.

Consequently an emerging literature investigates what makes an acquirer able to manage the acquisition IT integration challenge. In this stream of research Henningson and Yetton (2011) investigated how the acquirer's and acquisition's initial IT conditions affected the challenge. Tanriverdi and Uysal (2011) found that acquirers that are more successful in cross-business IT integration in general are also more successful in acquisition IT integration. Tanriverdi and Uysal (2013) concluded that not all of the acquirer's IT resources could easily be extended to support the target acquisition, limiting synergy re-

alization. Finally, Henningsson (2014) investigated how a successful acquirer built knowledge for IT integration through accumulation of experiences to design and implement the IT integration project.

However, this literature exclusively search for an explanation to effective acquisition IT integration in the *internal* capabilities of the acquirer. Indicative evidence suggest that a large proportion of all acquirers are heavily dependent on temporary agency workers (primarily sourced as consultants) in the planning and/or execution of IT integration (Accenture, 2002; Freitag et al., 2010; Wirz & Lusti, 2004). It is proposed that external workers may contribute essential knowledge through the processes of vicarious learning by transferring experience from one acquirer to the next as best practice (Ko et al., 2005). It has, however, also been proposed that such workers are badly suited for acquisition IT integration, as they lack a deep understanding of neither the acquirer's nor the target's IT (Henningsson, 2014).

Complementing the extant literature, this article investigates the use of temporary agency workers as an explanation to effective acquisition IT integration grounded in the *external* capabilities of the acquirer. Our specific outset is two-fold: (a) to develop a descriptive framework that captures the different ways temporary agency workers can contribute to acquisition IT integration, and (b) explain how the appropriation of temporary agency workers relates to the acquisition strategy.

To develop our descriptive framework, we adopt the Resource Based View of the firm (RBV) as a general theoretical perspective. The RBV (Grant, 2002; Peteraf, 1993) has a proven track record in the IT literature to explain how IT resources contribute to business value (Wade & Hulland, 2004) and to explain how acquisitions create value for the acquirer (e.g. Capron et al., 1998). Resources are the assets that a business owns or controls, including agency workers that can be sourced (Capron et al., 1998; Grant, 2002). An organizational capability is a particular type of resource, representing the ability to perform an action, using the available resources, to achieve a particular end result (Grant, 2002).

Combining the literatures of acquisition IT integration and the use of agency workers in IT projects from a RBV, we derive four distinct roles that agency workers can assume in acquisition IT integration projects. Through a study of three acquirers (BeerCo, FoodCo and PumpCo), we investigate the extent of empirical support for the identified roles. Then, following an inductive analysis, we re-analyse the case data to uncover additional insights on how clients include agency workers in their acquisition strategy. The deductive and inductive analyses together yield an explanation of how the resources in the external of the acquirer contribute to the acquirer's ability for IT integration.

2 Related literature and framework development

With the argument that the distinction between “mergers” and “acquisitions” is only juridical, prior literature has frequently used the combined terms “merger and acquisition” (M&A) to refer to organizational combinations (Henningsson & Carlsson, 2011; Mehta & Hirschheim, 2007; Wijnhoven et al., 2006). However, there is a growing awareness that the transactions studied in the domain of M&As are different from an IT perspective (e.g. Yetton et al., 2013; Henningsson, 2014). The many acquisitions undertaken yearly by organizations such as Siemens or Cisco are fundamentally different integration projects than the merger of two multi-business organizations (Henningsson & Yetton, 2011). In this paper, we use the term “acquisition IT integration” to stress that we are principally interested in the type of organizational transaction where one major organization acquires a minor organization.

In the following, we develop a descriptive framework for the roles of agency workers in acquisition IT integration. We start with briefly reviewing the literature on acquisition IT integration. This review identifies two main tasks of acquisition IT integration: *design* and *implementation*. We thereafter integrate the reviewed literature with the limited literature on the use of agency workers in IT projects. Previous research on the use of agency workers identifies the *complementary* and *supplementary* use of agency workers. By combining the results of these reviews, we derive a framework defining four possible roles of agency workers in acquisition IT integration: *Brain*, *Expert*, *Craft* and *Muscle*.

2.1 Acquisition IT integration

The broad conclusion of previous research on acquisition IT integration is that the principal role of IT rests in the realization of business benefits (Böhm et al., 2011; Giacomazzi et al., 1997; Johnston & Yetton, 1996; Mehta & Hirschheim, 2007; Wijnhoven et al., 2006). To this end, the IT function needs to be successful in two interrelated tasks: the design and implementation of IT integration. “Design” refers here to the assessment of the acquisition’s starting conditions and to-be scenario: what resources exist, what is the dependence on the target’s IT and what should the eventual solutions look like (Alaranta & Henningsson, 2008; Böhm et al., 2011; Mehta & Hirschheim, 2007; Merali & McKiernan, 1993). “Implementation” refers to the mostly technical work of the IT integration implementation (Stylianou et al., 1996; Wijnhoven et al., 2006).

Alaranta and Henningsson (2007; 2008) contend that the design of an IT integration strategy should follow a thorough analysis of the synergistic effects expected from the acquisition. The analysis frames the IT integration project, suggesting a path to acquisition IT integration with specific decisions needed to be made based on the initial conditions. Along similar lines, IT integration strategy and acquisition benefits have been described as an alignment process (Giacomazzi et al., 1997; Henningsson & Yetton, 2011; Johnston & Yetton, 1996; Mehta & Hirschheim, 2007; Wijnhoven et al., 2006).

Henningsson and Yetton (2013) outline four strategies for acquisition IT integration, which may be appropriate in different situations:

- In *IT absorption*, data from the target’s IT systems are migrated to the acquirer’s IT systems, whereupon the target’s IT systems are retired. The strategy is useful when the targets can operate with the acquirers IT systems without damaging the business and enable business process standardization and cost reduction (Giacomazzi et al., 1997; Johnston & Yetton, 1996; Wijnhoven et al., 2006).
- In *IT co-existence*, IT systems that do not correspond to any system of the acquirer are retained. In full co-existence, all of the target’s systems are kept. In partial co-existence, only the target’s unique IT systems are retained (Johnston & Yetton, 1996).
- *IT best of breed* is a strategy in which a careful evaluation is made for each of the acquirer’s and target’s systems to select common systems for the combined organization. This is necessary when the target has some IT systems or IT-based business processes that are superior to the acquirer’s systems and processes (Giacomazzi et al., 1997; Johnston & Yetton, 1996; Wijnhoven et al., 2006).
- *IT renewal* is necessary if neither the acquirer’s nor the target’s IT systems can support the combined organization. This can be the case if the acquisition is made to fundamentally change the acquirer’s business strategy. In IT renewal, new IT systems have to be developed (Mehta & Hirschheim, 2007; Wijnhoven et al., 2006).

Effective delivery of acquisition IT integration is contingent on the acquirer being able to design and implement an IT integration project with a mixture of IT integration strategies (Henningsson & Yetton, 2013). Henningsson (2014) investigates how an acquirer develops design and implementation capabilities. His conclusion is that these abilities have to be built during a series of heterogeneous acquisitions. Repeating the same type of acquisition over and over again may teach the acquirer how to implement IT integration that suits this particular type of acquisition, but variation in experiences is required to gain the expertise to appropriately design IT integration for a range of different scenarios. According to Henningsson (2014), the knowledge necessary to do so is highly tacit and requires in-depth knowledge of the acquirer’s IT resources and organizational context. The relevant knowledge therefore has to be built up from experience, rather than sourced from the external of an organization.

2.2 Temporary agency workers

Temporary agency workers are employed as agents, but perform their work tasks for a client organization (Håkansson & Isidorsson, 2012). Since Atkinson's studies of the flexible firm (Atkinson, 1985; Atkinson et al., 1986), agency workers are generally conceived of as a means of achieving flexibility. Atkinson identified agency workers as a secondary group of workers who contributed to numerical flexibility. Using employees on temporary contracts, employers found it easy to adapt staffing levels. The same conception of temporary agency workers appears in subsequent studies (Houseman, 2003; Kalleberg et al., 2003). Numerical flexibility is presented as the opposite to functional flexibility (Kalleberg et al., 2003). Functional flexibility refers to internal flexibility through the design of the organization so that employees can vary their work tasks and participate in decision-making. According to the model of the flexible firm, the combination of functional and numerical flexibility results in core and periphery segmentation (Atkinson, 1984, Atkinson & Meager, 1986). The core is associated with functional flexibility, upskilling and high-performance work systems. The periphery, on the other hand, is associated with numerical flexibility, deskilling and routine work (Kalleberg, 2001)

However, the division into core and periphery has been called into question (Ackroyd, 2002; Håkansson & Isidorsson, 2012). According to this critique, there is no evident core and periphery segmentation. Thus, when defining agency work, we make no distinction as to whether the agency worker contributes towards the periphery or the core of the client organization. Instead, following RBV, we define temporary agency workers as human resources (Grant, 1991) that can be added from the external resources of the company when needed. Consequently, while some definitions of agency worker would exclude consultants giving advice or performing highly skilled tasks, our definition includes consultancy in these functions.

In relation to IT and companies' IT functions, two generic roles of agency workers can be found: the complementary and the supplementary roles (e.g. Ko et al., 2005; Sedera & Gable, 2010). Complementary roles tend to be associated with the use of best practice within organizations, and with introducing new knowledge to clients (Davenport, 1998; Sedera & Gable, 2010). The supplementary role delivers resources similar to those the client already possesses, but answers to the need for flexible staffing in times of high demands on the organization (Siakas & Balstrup, 2006).

In an ERP context, most companies rely on agency workers to help in developing and implementing systems (Finney & Corbett, 2007; Ko et al., 2005). High-quality external expertise is often seen as the most critical factor in effective ERP implementation (Thong et al., 1994) and the most significant determinant of ERP systems success (Ifinedo, 2008). Studies have also found a correlation between the level of external expertise and ERP adoption success (Wang & Chen, 2006).

In these studies, the explicit or implicit role assumed by agency workers is the one of the external expert, who contributes with expertise not possessed by the client organization. It is expected (with some variations) that external parties bring new knowledge to the software and to "best-practice" business processes (Davenport, 1998). The expert agency worker complements the capabilities of the client. The complementary knowledge is gained from experiences in other companies that have faced similar problems. Agency workers thus present the possibility of vicarious learning from others.

Around the mid-1990s, researchers interested in organizational learning began to question the assumption in learning research that firms only learn from their own experiences. Based on the theory of imitation (DiMaggio & Powell, 1983) and vicarious learning (Bandura & McClelland, 1977), researchers started to explore the possibility that organizations learned from each other. Vicarious learning enables an organization to explore a variety of ways of performing tasks without incurring any costs and risks that might be associated with experimenting with alternative actions (Haunschild & Miner, 1995). Beckman and Haunschild (2002) use institutional theory from sociology and social learning theory from psychology to argue that organizations can learn to acquire more successfully by tapping into the

experience of their network partners, suggesting that vicarious learning from the experiences of partners helps firms to increase the success of their own acquisitions.

When it comes to agency workers and acquisitions, the role of financial advisors and transactional advisors from investment banks has been the center of attention (see for example Allen et al., 2004), primarily focusing on the impact they have on the price tag of the target. La Joux (1998) recognizes the opportunity to utilize agency workers in integration, stating that “Managers should consider using services of outsiders to compensate for their deficiencies” (p. 50), pointing to expertise and objectivity as benefits that companies can gain from using external resources in planning their integration.

While the presence of vicarious learning effects among acquirers seems well established, research into the mechanisms of vicarious learning is still in an early stage (Barkema & Scheijven, 2008). Essentially, for vicarious learning to take place there must be a flow of information from one acquirer to another. We argue that, because of the common use of agency workers in acquisitions, agency workers can form an ‘information bridge’ that allows for transfer of experiences between acquirers.

The other use of agency workers in IT organizations is in supplementary roles. Frequently, agency workers increase staffing in times of great demand for services. In large-scale IT projects, such as ERP implementation, the challenge facing an IT organization is two-fold. As well as the project being exploratory, its sheer scale presents a challenge. Retaining an IT organization that could handle peak demand during ‘normal’ operation may not be possible. Hence, many IT organizations opt for flexible staffing solutions that include employing agency workers to cope with peak demand. It has been argued that agency workers frequently do contribute with more of the same capabilities that the client already possess, rather than providing the client with new knowledge (see, for example, Wang & Chen, 2006; Westrup & Knight, 2000).

This role of agency workers is also discussed in the outsourcing literature in what is sometimes called “insourcing”, here referring to the bringing people into the organization in order to meet certain requirements and activities within a specific deadline (Siakas & Balstrup, 2006). Quélin and Duhamel (2003) find that one of the key motives for clients to outsource a part of their business is the opportunity to use external resources that will help them overcome a peak demand for services.

The needs and consequences of flexible staffing are associated with being adaptable to a changing business environment (Bouncken et al., 2012; Kalleberg et al., 2003). The consequences of flexible staffing involve important human aspects of work security for the individual worker (Houseman, 2003), but there are also consequences for the client organization (Kalleberg et al., 2003). The common norm is to use temporary workers for well-defined tasks that requires little independent thinking (Håkansson & Isidorsson, 2012). Temporary workers are normally not seen as being equally knowledgeable about the client organization that they are expected to develop and design strategies for. Instead, they are seen as better suited to the execution of plans (Bouncken et al., 2012). The difficulty of the tasks to be performed by external workers influences their performance, making general agency workers better suited to simple tasks with low qualification requirements (Bouncken et al., 2013).

Knowledge retention is seen as a problem with the use of agency workers. The knowledge gained by temporary workers is not retained in the organization (Bouncken et al., 2013). If combined with Henningsson’s (2014) conclusion that acquisition of IT integration has to be experienced to be learnt, this seems a reasonable consequence of high dependence on agency workers for acquisition IT integration.

2.3 Four roles of agency workers in acquisition IT integration

Combining the literature of acquisition IT integration and agency work, we can identify four roles for agency workers in acquisition IT integration (Table 1). Within the acquisition IT integration design, the agency worker can assume the complimentary role of Brain or the supplementary role of Expert:

- When companies hire agency workers to act as Brains, they hire them to help the company develop integration strategies or high-level synergy assessment and integration plans that the company could not carry out on its own (LaJoux, 1998).
- Agency workers can be used as Experts when used for high-level task, that the acquirer already has staff to carry out. This is a response to a need to complete acquisition IT integration within a given time frame, with limited internal resources available to complete the tasks.

Within the acquisition IT integration implementation, agency workers can assume the complementary role of Craft and the supplementary role of Muscle:

- The work of external workers can be considered as Craft when it requires know-how that is not present in the IT organization of the acquirer or the target. When agency workers are hired for specific SAP implementation tasks that are not standard to the corporation, they are used as Craft.
- Agency workers assuming the Muscle-role are used to perform implementation tasks that the company can do, but need extra people for due to the integration. This can, for example, involve the operation of existing platforms while the people normally performing the operation tasks are allocated to other tasks during the merger integration (Freitag, Matthes, & Schulz, 2010).

	<i>Supplement</i>	<i>Complement</i>
Implement	Muscle	Craft
Design	Expert	Brain

Table 1. Four uses of agency workers in acquisition IT integration

3 Method

The research presented in this paper follows an approach similar to analytic induction (Patton, 2002), with the purpose of developing theory for how the use of external resources in the form of agency workers contribute to the acquirer’s IT integration ability. Our analytic induction approach was based on a positivist multiple case study (Dubé & Paré, 2003). Although we accept that the contribution of agency workers can ultimately be seen as socially constructed, this study frames the roles of agency workers from a simplified, modest foundationalist (Feldman, 2002) view of unmediated experiences of a real world. In modest foundationalism, assumptions are made about the existence of certain key elements that allows for theory building until reasons to challenge these assumptions are found. For this study, we are assuming that the agency workers’ influence on IT integration abilities can be captured by regarding them as real world objects.

The multiple case approach was chosen to combine the case settings suitability for rich exploration of acquisition IT integration (Henningsson *et al.*, 2010; Carlsson *et al.*, 2011) with the possibility of perceiving converging and diverging patterns across cases to increase research validity (Eisenhardt, 1998). The rich data of the case study presented the prospect that additional insights about the relationship between the acquirer’s acquisition strategy and the use of agency workers might be gleaned. In line with the study’s exploratory outset, we search for variance in acquirer attributes, regarding acquisition experience, types of acquisitions made, IT integration strategies employed, industry, and importance of IT integration for overall acquisition outcome in selecting cases.

In total three cases were selected to match the need for empirical data in the deductive and inductive phases of the study. The selected cases conformed to three criteria: First, they presented extensive use of agency workers. A varied pool of use we expected to meet the deductive part of the study. Second, agency workers were used in distinct ways within the cases. Third, the acquirers in the cases presented variance in their acquisition strategies. The latter two conditions we expected to make the case match the needs of the inductive part of the study.

Interviews were the primary method of data collection. Initial interviews were based on a broad framework, but with a particular focus on concepts related to composition of the IT integration team. Interviews were semi-structured to facilitate the collection of data for both the deductive and inductive analyses (c.f. Eisenhardt, 1989). They were recorded and transcribed. Additional data sources were used to complement the interviews and to triangulate findings.

Consistent with the analytic induction process, data was analysed deductively and inductively. First, following a deductive approach, we analysed the data to determine the support for the roles identified. A priori categories (Saldaña, 2009) representing the roles were used to code the empirical material. Second, following an inductive analysis strategy, we revisited the case data to identify additional insights regarding the use of agency workers in relation to the acquirers' acquisition strategy. Coding to discover the drivers for different uses was done with selective coding (Strauss and Corbin, 1998). Categories of roles were held as core categories. Initial coding of passages containing information relating to the core categories was followed by coding clustering to find more generic themes (c.f. Strauss and Corbin, 1998; Saldana, 2009). Clustering was made with a constant comparison method (Strauss & Corbin, 1990). The emerging themes spurred a new literature search directed towards theoretical arguments in support of the empirical findings. Based on empirically induced findings and supportive theoretical arguments, the antecedents of use of agency workers were derived.

4 Results: Role validation and drivers

Details about the case companies, their acquisition strategies and use of agency workers can be found in Table 2. All acquirers in the study have a strong reliance on agency workers as part of their IT integration teams. However, their use varies notably among acquirers. In the following, we analyse the converging and diverging themes in two sections. First, we analyse how the four roles are being used. Second, we analyse why the acquirers use the agency workers the way they do. The positions taken are directly related to the acquirers' acquisition strategies, as described below.

BeerCo		Acquisition strategy
Business	Brewery	BeerCo's growth by acquisition strategy has involved 60 acquisitions since 1997, including that of a European competitor in 2008 for \$15.3bn. More recently, acquisition-based growth has been focused on Asia and developing markets in India and Eastern Europe. All the acquired companies are breweries, complete with production and sales organizations. The acquisition motives are to gain market leader positions within already operating markets, as well as new market entry.
Empl.	42 000	
Sales (€)	8900 M	Following the acquisition, excellence programs are typically executed in the new business units to optimize the acquired business. Acquisitions are usually integrated as independent business units in the first phase. This has been the approach since BeerCo started its acquisition program in the 1990s.
Acquisitions	60	In 2008 BeerCo initiated a business process integration project. In 2011 it was rolled out in the first country. The purpose of program is to integrate the business processes across the business area. With this project, BeerCo is aiming at performing a pooled integration of all the targets acquired in Europe since the late 1990s. The pooled IT integration project followed an IT renewal strategy.
Interviews	CIO1, CIO2, IT man.	Use of agency workers
		BeerCo used agency workers for a wide variety of tasks during the pooled integration project. Initially it used strategic management agency workers, from McKinsey and Boston Consulting Group, for high-level business cases for the project and for identifying synergies. For IT projects within the different business functions, other agent workers were used to identify synergies, assist in IT strategy definition for the area as well as managing projects. This is for example the case with HR application integration and implementation of shared service centers of accounting.
		All implementation tasks that can be specified are outsourced to externals based in low-cost countries, where Accenture accounts for the largest share of these tasks. More than 100 agency workers have been making system configurations, and more than 200 Accenture agency workers have been assigned to the project, where Accenture also participates with project management resources. Externals are not given the economic responsibility of projects, but are however involved in the strategic and tactic IS decisions.

FoodCo		Acquisition strategy FoodCo has made 21 acquisitions since 1997 to transform itself from a local industry conglomerate to a global food ingredients producer. Most targets were small, accounting for 50-70 people per acquisition. Two targets stand out as large, path-breaking acquisitions. A California-based biotech producer with 1,300 employees added a new business area to FoodCo, and a French food additives manufacturer, with 900 employees brought scale to the food ingredients business. Together, these two acquisitions account for 1/3 of FoodCo's business in terms of revenue and employees.
Business	Food ingredients	All acquisitions have been integrated into FoodCo following an absorption strategy based on the view that FoodCo is a "true global company". Business processes are not dependent on geographical location or business area, but are streamlined throughout the business units on a global scale resulting.
Empl.	6 800	
Sales (€)	1 800 M	FoodCo's IT infrastructure is rolled out at the targets sites within the first weeks. Before the end of the first quarter, financial data is fed into the corporate data warehouse solution. The business processes, change management activities and ERP integration is finished within 6-12 months. In cases where the new business does not fit into the existing SAP platform due to special requirements, the global template is updated and rolled out all across the business.
Acquisitions	21	
Interviews	CIO, CFO, ERP man.	Use of agency workers During acquisition projects, other projects are down prioritized to allocate resources for the integration. Despite this, about half of all project resources are agency workers. Within many functionality areas, FoodCo have chosen two different partners; one for specialized tasks and another one for volume tasks, with agency workers located in the same areas as FoodCo's IT functions, and in low-cost areas, including Brazil, India and China. Specialized agency workers are normally sourced from small, independent suppliers. While agency workers are used for routine and specialized tasks, the company never transfers the final responsibility, and do not outsource project management tasks. Agency workers are not used for more strategic tasks related to the integration strategy either, as the strategy is tested, performed and non-negotiable and the approach is that integration capabilities should be located in-house in FoodCo.
PumpCo		Acquisition strategy PumpCo has made 25 acquisitions since 1997. All acquisitions fit into the corporate strategy focusing on the pump segment. Acquisitions are usually small compared to PumpCo, typically with 70-100 employees. This is because the industry is fragmented and characterized by many small players. The larger acquisitions have been of firms of 200-400 employees. PumpCo has two integration strategies, the use of which depends on the acquisition rationale. Targets that are acquired to become a part of the PumpCo's brand and global organization are referred to as <i>integration businesses</i> . Companies that are acquired for other strategic reasons, such as a market position in low-cost segments, are referred to as <i>separation businesses</i> . Integration businesses follow an absorption strategy, while separation businesses follow a preservation strategy. Separation businesses are kept intact with their own IT organizations in order to operate and support their own systems. Separation businesses can utilize the group's resources if relevant, but PumpCo's IT organization is not responsible for their IT. Integration businesses are integrated with an absorption strategy. Most often, the acquired companies have local pockets of IT after the integration process, including both hardware and software that are phased out as the company shifts to PumpCo platforms.
Business	Pump manufacturer	Approximately 10-15% of the resources in the IT function are agency workers. External agency workers are used both to deal with peak demand and to bring specific knowledge to the integration team. PumpCo utilizes agency workers when no internal IT employees with the same competence are available in-house. This is often the case with project managers and SAP module developers and project managers. Strategic consultants are included in strategic IT projects that have a notable impact on the business or business processes. Recently, this has been the case with the design of a new IT architecture and an on-going demand-planning project. PumpCo has the responsibility of delivering the projects in their portfolio, and generally keeps the responsibility in-house. Following acquisitions, resource demand is high, and it is prioritized to allocate internal IT resources for the integration tasks, when meeting the new business unit to send a signal of an integrated company as well as appreciation of the acquired business. The internal resources need to be reallocated from their ongoing projects, and mostly agency workers fill these.
Empl.	17 900	
Sales (€)	3 000 M	Use of agency workers
Acquisitions	25	
Interviews	CIO, ERP man.	

Table 2. Cross case comparison of agency worker use

4.1 The use of agency workers

Table 3 presents an overview of how the investigated acquirers use agency workers in IT integration. When an agency worker performs a task for one acquirer, this might be in a supplementary role, while performing the same task in another company, might be in complementary role. This perspective helps describing how agency workers are used across companies beyond the specific task performed.

	BeerCo	FoodCo	PumpCo
Muscle	<u>High</u> Large base of externals working with system configurations and defined implementation tasks.	<u>High</u> Widely used in integration projects for standardized tasks. Especially in low-cost markets.	<u>High</u> Frequently performing operational or predefined tasks.
Expertise	<u>High</u> For project management, IT strategy advice.	<u>Low</u> No use due to no-responsibility outsourcing policy.	<u>Medium</u> Limited use of agency workers in an expertise role.
Craft	<u>High</u> For support of legacy systems, for less defined implementation tasks, and for project planning.	<u>High</u> Agency workers with specialist knowledge work within a specific business process area of the IT.	<u>Medium</u> Use project managers or specialists where similar resources are not internal in the organization.
Brain	<u>High</u> Used to develop IT strategy, for IT strategy development in functional areas, for sparring, for synergy validation.	<u>Low</u> No use due to no-responsibility outsourcing policy.	<u>Low</u> Used for strategic IT project with business impact. This is not the case for acquisition IT integration.

Table 3. Cross case comparison of agency worker use

4.1.1 Muscle

In all three cases, agency workers were involved in performing tasks that the company already had competencies to perform in-house. The use for agency workers as muscle is driven by the high, temporary resource demands during the integration project. None of the companies have in-house resources dedicated to acquisition integration projects, who are not dedicated to other tasks in between the acquisitions. Therefore most of the companies use supplementary resources in the integration process to meet the resource demand on the rather standardized, predefined and well documented tasks. In most acquisitions, agency workers are used for different ERP integration tasks within business process areas, including finance, HR or production or for migration tasks. Furthermore, they are being used for system configurations on large-scale projects where the resource demand is exceptionally high for a limited period of time, or operational tasks.

I assume that my people are engaged; they should be occupied 110% of the time. So there is a limitation to what new tasks we can assign them. (PumpCo, CIO)

Agency workers in the Muscle role are used in two different ways. Either they are allocated to the specific IT integration project, forming part of the integration team or external workers are used to free up internal resources for the integration project. The argument behind substituting internal resources with agency workers to allocate them on IT integration projects is that the acquirer can then meet the target with its own resources, which can reduce resistance towards change.

The choice between the two approaches is related to the predefinition of an IT integration strategy; i.e. the degree to which the IT strategy differs from one acquisition to another. In the acquisition cases where the IT integration strategy was predictable and not up for discussion, the acquirer used externals for sub-projects of the integration, thus allocating externals directly to the integration team. In the cases where the IT integration strategy was not predefined, the acquirer preferred to send internal staff to

perform the integration, consequently allocating temporary agency workers to perform operational tasks.

4.1.2 Expertise

The use of agency workers for added expertise occurs when agency workers are hired in supplementary roles to perform integration design. Agency workers are being used for expertise tasks to less extent, than as muscle or as craft resources. Expertise is utilized as the company uses agency workers to assist in or facilitate the integration planning or to do project management tasks where the project plans are not predefined, but where the company already has capabilities within the same area.

In the beginning, you need to specify and transform your strategic business case to an operational business case. That requires a great amount of [company] knowledge and it requires some [company] people and some consultants who know [the company]. (CIO, BeerCo)

The tasks performed in the expertise role include high-level project management, project planning sparring where extensive knowledge of the company is required, and objective assessments of business processes or information systems (IS). Large-scale integration subprojects, whose participants mainly consist of agency workers, are often assigned project managers from the same agency to facilitate the process, despite the fact that the company has capabilities to manage the project with external participants. In some projects related to the acquisition integration of information systems, agency workers are used for sparring during the design work of the project where they work closely together with the company. Finally, agency workers are used to perform objective assessments of the integration plans or business processes in the company, i.e. to validate the internal assessments made by the company.

4.1.3 Craft

All three case companies use agency workers as craft in their acquisition IT integration projects. These resources are utilized to perform implementation tasks that the acquirer and the target do not have competencies to perform themselves.

We have used consultants on those areas where we have made some kind of customization because there was a special need, or when we have made modifications to the system. (CIO, FoodCo)

The tasks are often well defined and the project managers are able to specify the work or output that the craft resources are to perform or deliver to a fairly detailed level. Agency workers, in these cases, are used due to their highly specialized knowledge with which they can execute the IT integration strategy of the given acquisition. Companies mostly use craft resources for ERP implementation tasks, within the different processes of the ERP implementation or for the customization or integration of small scope applications that are locally anchored or heavily modified to fit specific business requirements.

Agency workers as Craft are often sourced locally, being based where they perform the tasks. In many acquisition cases, the targets have legacy applications that cannot be out phased initially, and where integration with a corporate platform, or data integration through interfaces, requires work on the legacy applications. These applications are often local solutions with little or no documentation and are written in local languages. Therefore local agency workers are used for support or customization tasks. Furthermore, agency workers with specialist knowledge within a specific sector, with extensive knowledge of the acquirer or with specialist knowledge within a specific non-standard business process are more difficult to find and are typically located closer to the business.

4.1.4 Brain

The investigated acquirers use agency workers in the Brain role as to facilitate strategy definition related to the integration or to the future IT landscape of the company. Agency workers are given the

task to plan the realization of the expected synergies related to the acquisition or to outline opportunities for the newly integrated company.

There are a lot of situations, where nobody in the company has tried to do this before. In these cases we have been through a lot of brain drains with externals to get things rolling. (CIO, BeerCo)

Agency workers in the brain role are used for large projects where the outcome may have an impact on a corporate level, through the redesign of existing business processes or the adoption of a new system. Brain capabilities are used both globally and locally. Local agency workers are used because of their knowledge of the company, typically from other projects. In cases where specific strategic capabilities are needed for the integration, but are not available in the local environment, internationally sourced brain capabilities are typically used.

4.2 Antecedents of agency worker use

Having identified and validated the four theoretically derived roles of agency workers in acquisition IT integration, we inductively re-coded the empirical material to find reasons for the divergence in use. The emerging explanations pointed towards two tradeoffs in the decision of agency worker use: knowledge induction vs. knowledge retention, and experience variance vs. in-depth understanding.

4.2.1 Induction vs. retention

For BeerCo and PumpCo acquisition IT integration was perceived as a challenge where they needed knowledge induction from the outside. It has previously been proposed that using agency workers as a mechanism of vicarious learning is most relevant for the novice acquirer that faces a problem for the first time (Barkema & Schijven, 2008). Both BeerCo and PumpCo were experienced acquirers, but still perceived the need for knowledge induction. On the other hand, FoodCo explicitly tried to avoid using agency workers in any task that had to do directly with the acquisition IT integration. Instead agency workers were largely used to staff up day-to-day tasks, freeing up internal staff to do the acquisition IT integration.

We never used externals to do the thinking. When we use our own staff in integration, they learn and develop over time. (CIO, FoodCo)

In practice, the need for knowledge induction and knowledge retention becomes at least partially excluding. The learning processes of vicarious learning (Bandura & McClelland, 1977) and learning from experience accumulation (Henningsson, 2014; Zollo & Singh, 2004) have to balance. For the acquirers in the study, the deciding factor seems to be to what extent the event is expected to be a repeated action. Despite the fact that BeerCo had made a large amount of acquisitions, the pooled integration project was a one-off time project. Hence, for BeerCo, the need for knowledge induction to overcome the specific challenge at hand was greater than the need for knowledge retention to be able to overcome similar challenges in the future. For FoodCo, acquisitions had become an integrated part of the operation and something that would be repeated also in the future. Therefore, the need to retain knowledge was more important than the need for knowledge induction. For PumpCo, every acquisition seemed to present new challenges to the acquirer. PumpCo needed both knowledge induction and knowledge retention, to improve and to solve similar problems in the future. Hence, PumpCo aspired to work with mixed teams that could allow for knowledge transfer.

4.2.2 Experience variation vs. deep understanding

Henningsson (2014) concluded that a range of heterogeneous experiences is a prerequisite for the acquirer to be able to accurately design the acquisition IT integration project. With a small or homogeneous set of acquisition experiences, the acquirer runs the risk of making errors in the design. Agency workers may have a wide range of acquisition experience and therefore the ability to spot inaccuracies in the IT integration design.

I would like that we had some people here to assist in setting the stage and laying out the strategies. They probably don't have to be there all the way through, but be there to make the strategy for how we integrate this company. People who have tried it before, who have tried it 100 times before. That would be super. (CIO, PumpCo)

On the other hand, there is also a great need to understand the acquirer's IT resources in-depth to be able to understand the limitations of the resources and to be able to predict how the acquisition will be affected by using the acquirer's IT resources (Mehta & Hirshheim, 2007, Yetton et al., 2013).

Every IT setup is unique. If you come in from the outside, you first have to learn what is unique with this company and how we do business. ... For us, it is incredibly important that we don't make any exceptions to our standardization approach. It will hurt our agility. For other companies, it will not be such a big deal. Those nuances I think are very hard for an outsider to get. (CIO, FoodCo)

Ideally, the acquirer has a knowledge base that is both broad and deep when designing and implementing integration. Frequently, however, that is not the case. Acquirers, including experienced acquirers such as PumpCo, express the need for the increased experience variation that comes with agency workers.

5 Discussion and conclusions

5.1 Findings and contributions

When selecting the case companies, we did not know whether they used agency workers in their acquisition IT integration project. With that background, we were surprised to hear from the acquirers about how extensive their use of agency workers was. All three acquirers estimated that at least half of all resources used during the projects were externally sourced. They also expected that this was common industry practice. Based on this finding, our initial assumption that to understand the acquirer's abilities to cope with acquisition IT integration challenges it is essential to understand how the acquirer uses resources external to the company, is reinforced.

Combining the literature of acquisition IT integration and agency workers in IT projects, we identified two complementary and two supplementary roles that agency workers can assume in acquisition IT integration. The complementary roles of Brain and Craft are associated with the carrying out of best practice between organizations, bringing new knowledge to the client organization. The supplementary roles of Expert and Muscle delivers more resources similar to ones the client already possess, but addresses a need for flexible staffing in times of high demand on the organization. The four roles are combined in a descriptive framework for agency worker use. Empirical investigation of three acquirers found support for all four forms of use.

In this study, we also start the process of explaining the antecedents and effects of agency worker use. We identify two drivers of use: knowledge induction and flexible staffing. The need for knowledge induction drives the complementary use of agency workers, and the need for flexible staffing drives supplementary use. We, however, can also identify that these drivers are associated with trade-offs that may have a negative influence on the acquirer acquisition IT integration ability. First, the use of agency workers may limit knowledge retention and thereby essential knowledge accumulation across acquisitions. Second, externally sourced agency workers frequently lack the in-depth knowledge of the acquirer and its IT system necessary to be work independently with design tasks.

Addressing these dilemmas, the acquirers in the study used agency workers indirectly to free up internal resources for use in the integration project in combination with direct use in the integration project. This strategy enabled the acquirer to balance the need for flexible staffing with an in-depth understanding of the acquirers' IT and business strategy.

5.2 Implications for practice

Acquiring organizations can use our framework for agency worker roles in developing strategies for use of agency workers. This includes new uses to reinforce the acquisition IT integration ability, as well as identifying and understanding the consequences of current use. Balancing the drivers and the possible negative impacts of agency workers requires a careful management of the IT integration team. Kolb and Frohman (1970) suggest that the consultant's intervention in the organization should be "directed not only at solving the immediate problem, but also at improving the organization's ability to anticipate and solve similar problems". For this to happen, agency worker use has to be managed in this direction. The investigating acquirers who saw this as a desirable benefit made sure that the agency workers were engaged in teams, together with employees of the acquirer.

Finally, it has previously been proposed that the use of agency workers as a mechanism of vicarious learning is most relevant for the novice acquirer who faces a problem for the first time (Barkema & Schijven, 2008). Both BeerCo and PumpCo were experienced acquirers, but still perceived the need for knowledge induction. This makes us suggest that also experienced acquirers should assess the possibilities of using agency workers for knowledge induction.

5.3 Limitations and future research

Together, the acquisitions performed by the companies in the study represent a diverse base of acquisitions, but it does not provide a sufficient basis to make general statements about the effects of agency workers. Furthermore, all the participating companies are private sector manufacturing companies. Future research should investigate other industries, public agencies, NGO's and use data analysis enabling statistical generalizations.

In this study we have investigated agency workers in acquisitions with one clearly dominant part, not covering the topic in relation to mergers of equals. The more complex merger of equals lies outside the boundaries of the conclusions derived. It is likely that mergers present additional or augmented needs for use of agency workers. A merger would be notably larger and likely require more supplementary agency workers. In addition, a merger is a unique event in the life of an organization. There would be little use to retain knowledge for a subsequent merger. Both of these factors favour extensive use of agency workers. Investigating the use of agency workers in a merger is one of the future avenues for research into agency worker use.

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