Developing Acquisition IS Integration Capabilities: The Learning Processes of Novice Acquirers

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Abstract

An under researched, yet critical challenge of Mergers and Acquisitions (M&A), is what to do with the two organisations' information systems (IS) post-acquisition. Commonly referred to as acquisition IS integration, existing theory suggests that to integrate the information systems successfully, an acquiring company must leverage two high level capabilities: diagnosis and integration execution. Through a case study, this paper identifies how a novice acquirer develops these capabilities in anticipation of an acquisition by examining its use of learning processes. The study finds the novice acquirer applies trial and error, experimental, and vicarious learning processes, while actively avoiding improvisational learning. The results of the study contribute to the acquisition IS integration literature specifically by exploring it from a new perspective: the learning processes used by novice acquirers. Furthermore, the findings contribute several important implications for practice.

Keywords (acquisition IS integration, mergers and acquisitions, learning processes, novice acquirer)

1   Introduction

After retreating considerably in the wake of the Global Financial Crisis, Mergers and Acquisitions (M&As) in 2015 had reached new heights in terms of both dollars spent and deals done (Rehm and West 2015). In 2015 over 42,300 M&A deals were entered into worldwide; worth over US $4.5 trillion – the highest ever annual M&A spend (Massoudi and Fontanella-Khan 2015; Rehm and West 2015; Thomson Reuters 2016). However, despite their growing popularity as a tool by which to generate corporate growth, over 70% of M&As reportedly failed to deliver expected value (Cartwright 2002; Cartwright and McCarthy 2005; Christensen, et al. 2011; Harding and Rouse 2007; King et al. 2004; Marks and Mirvis 2011). This failure to deliver value can be caused by a variety of reasons, including: paying too much for the acquired company, over estimating synergy benefits, or failing to integrate the acquired company effectively (Marks and Mirvis 2011; Toppenberg et al. 2015; Vaniya et al. 2013). Successful information systems (IS) integration is a significant contributor to the realisation of M&A value, with up to 60% of a deal's anticipated benefits being directly dependent on this process (Curtis and Chanmugam 2005; Lin et al. 2010; Sarrazin and West 2011; Tanriverdi and Uysal 2011). Yet, despite its importance, acquisition IS integration is cited as one of the most difficult challenges and a common cause for M&A failure (Curtis and Chanmugam 2005; Posnick and Schoenborn 2007).

Extant literature on the acquisition IS integration challenge has identified two high level tasks the acquiring IT organisation must complete. Each task focuses on a specific challenge of the integration, and requires different capabilities to complete. First, the IT organisation must be able to diagnose the purpose of the deal and select the integration strategy most appropriate to realise the anticipated business benefits (Giacomazzi et al. 1997; Henningsson and Carlsson 2011; Johnston and Yetton 1996; Mehta and Hirschheim 2007; Tanriverdi and Uysal 2015; Wijnhoven et al. 2006). This is known as the diagnosis capability. Following that, the IT organisation must be able to execute the IS integration as per the intended integration strategy (known as the integration execution capability). Collectively, what a company requires to complete these high level tasks are referred to as the acquisition IS integration capabilities. This term encompasses all of the skills, resources, capabilities, and processes that when used correctly result in the acquiring company successfully integrating the acquired. Research has shown that companies with better IS integration capabilities create more value from M&A transactions than those who do not (Tanriverdi and Uysal 2011). However, it has also found these capabilities take a long time (many months or years) to develop, and must be developed prior to an acquisition (Yetton et al. 2013).

While much is known about the two high level acquisition IS integration capabilities, much less is known about how they are developed. The major exceptions to this being Henningsson (2015), who researched how serial acquirers build organisational knowledge from multiple acquisitions, and Henningsson and Øhrgaard (2016) who studied how acquirers learn from the experiences of temporary agency workers. Furthermore, the literature describing these acquisition IS integration capabilities has largely been derived from studying very experienced acquirers (known as serial acquirers) who buy more than three companies every three years (Henningsson 2015; Kengelbach et al. 2011; Toppenberg et al. 2015).

In focusing almost exclusively on serial acquirers, and overlooking how organisations learn these capabilities, a knowledge gap has opened around understanding how the 40% of acquirers who are not serial acquirers learn these important acquisition IS integration capabilities (Henningsson 2015). This paper focuses on novice acquirers, those who have either never acquired a company or acquire them so infrequently, that the company must re-establish the acquisition IS integration capabilities each time they undertake an acquisition.

Building on the existing IS integration literature, this paper investigates the learning processes of a novice acquirer as they develop the acquisition IS integration capabilities of diagnoses and integration execution. Specifically, this paper asks:

How does a novice acquirer develop the critical capabilities for acquisition IS integration in anticipation of an acquisition?

To answer this question, this paper reports the findings of a case study that investigated a novice acquirer as they develop these critical acquisition IS integration capabilities. The case is analysed from an organisational learning perspective, using four learning processes (trial and error, experimental, improvisational, and vicarious) as a broad frame through which to understand how the acquirer learns the capabilities (Bingham and Davis 2012). A broad framework was intentionally selected as it will enable this exploratory research to more freely explore the under researched topic.

2 Literature and Theoretical Positioning

2.1 Acquisition IS integration

The consensus among scholars is IT creates value in an acquisition by enabling anticipated business benefits (Henningsson 2015; Johnston and Yetton 1996; Mehta and Hirschheim 2007; Wijnhoven 2006). Therefore, the issues of what to do with the two IT organisations in an M&A, and how to do it, are at the core of the acquisition IS integration challenge. A challenge that must be solved by the acquiring company. Extant literature has identified two high level but critical capabilities an IT organisation must possess to effectively integrate the acquired company: the capability to diagnose the acquisition benefits and identify the most useful integration strategy, and the capability to execute the integration (Giacomazzi et al. 1997; Henningsson and Carlsson 2011; Johnston and Yetton 1996; Mehta and Hirschheim 2007; Tanriverdi and Uysal 2015; Wijnhoven et al. 2006).

The diagnosis challenge lies in the fact that the IT organisation must enable the realisation of the expected business benefits, yet there are a variety of ways to integrate the acquired company's IT. As such, it is critical that the IT organisation understands the rationale behind the deal and applies the correct mix of IS integration strategies. There are four strategies for IS integration which promote different business outcomes. Table 1 describes the four integration strategies.

IS Integration Strategy	Description
Absorption	The newly acquired company is migrated to the acquiring company's IS platform, and their IS is retired (Johnston and Yetton 1996).
Co-existence	Some or all of the IS of the acquired company are kept, and operated alongside the acquirer's. The remainder of the IS is retired (Johnston and Yetton 1996).
Best of Breed	The two companies' systems that perform the same function are compared, and the best system is chosen to be retained (Johnston and Yetton 1996).
Renewal	After the acquisition, the company moves onto a new IT platform, retiring the IS of both companies (Giacomazzi et al. 1997).

Table 1. IS Integration Strategies

As each IS integration strategy will result in a different post-acquisition IS landscape, it is vital that the IT organisation select the appropriate strategy to realise the anticipated acquisition business benefits. The need for the diagnosis capability has been shown time and time again in the acquisition IS integration literature. It was demonstrated by Johnston and Yetton (1996) in their paper that described how the wrong choice of integration strategy led to anticipated business benefits failing to be realised. This resulted in the need to change integration strategy after the integration had begun. Similarly, Alaranta and Henningsson (2008) report how an incorrect integration strategy selection led to a failed integration.

Following the diagnosis of the acquisition IS integration strategy, the IT organisation must also be able to execute the integration. Past research has recommended resources to use during the IS integration execution. For example, Yetton et al. (2013) recommend, based on the experiences of Danisco (a serial acquirer), IT resources such as a scalable IT platform and an internally staffed acquisition integration team. Complementing that, Toppenberg et al. (2015) demonstrate how CISCO, another prominent serial acquirer, uses its enterprise architecture function to manage the integration execution of newly acquired companies. These studies point to the configurations of successful serial acquirers that enable the integration execution to realise the expected business benefits.

However, while knowing the finely tuned resource configurations of serial acquirers is useful, knowing what is needed doesn't tell one how to build them. Furthermore, it is well known that the process of developing the IS integration capabilities takes a significant amount of time (Yetton et al. 2013). Therefore, it is important that literature on IS integration not only studies what the successful serial acquirer looks like, but also helps to guide novice acquirers to get there. One way of doing this is to study the processes a novice acquirer goes through to learn the acquisition IS integration capabilities.

2.2   Learning to Integrate

There has been much research into the field of organisational learning (for a summary review refer to Dodgson 1993; Levitt and March 1988; Tynjälä 2013). Consequently, many different theoretical perspectives of organisational learning have been embraced by academia. Cangelosi and Dill (1965) identified a holistic learning process made up of four broad phases: initial, searching, comprehending, and consolidating. Over the decades since their paper, additional explanations of how organisations learn have been proposed; however, the literature is divided between those seeking to explain discrete learning processes versus those seeking to craft holistic organisational learning frameworks.

Gnyawali and Stewart (2003) applied a contingency perspective to organisational learning, grouping over 30 different learning processes together under one of four key types of organisational learning: reinventive, formative, adjustive, and operative. This approach sought to provide a holistic answer to the question of how organisations learn. Similarly, Tynjälä (2013) presented their model of workplace learning to explain holistically the variety of factors, contexts, interpretations, activities, and outcomes within the organisational learning process.

Instead of seeking holistic learning frameworks, many scholars have researched discrete learning processes to understand, in detail, the ways organisations learn. Some examples include Weick et al. (2005) who discussed learning through sensemaking, Senge (1990) who identified learning through adaptive and generative approaches, and Bandura (1965) who wrote extensively on the process of vicarious learning. These discrete learning processes represent only a subset of the multitude of them studied in academia.

Despite much of the research into organisational learning and its subsequent discrete learning processes, only two studies have specifically addressed how organisations learn to perform IS integration. Henningsson (2015) observed how serial acquirers honed their IS integration skills over a series of successive acquisitions. He developed a knowledge-based model of IS integration underlined by five learning processes and he highlighted potential risks organisations faced when deviating from experienced integration strategies. However, in his paper he focused exclusively on the learning of serial acquirers, over an extended period of time, and across multiple acquisitions. In researching this niche, his findings do not address the challenges faced by novice acquirers as they learn the acquisition IS integration capabilities necessary to undertake an initial acquisition. Henningsson and Øhrgaard (2016) identify consultants as a source of a specific type of organisational learning: vicarious learning. They found that consultants bring with them the knowledge from their experiences of acquisition IS integration gained from other firms. Their paper makes a significant contribution to the acquisition IS integration learning literature; however, this contribution is narrow as the paper focuses on a small niche. The paper specifically discusses one learning process, vicarious learning, via consultants, and again, exclusively about serial acquirers. Such a narrow focus leaves much still to be studied in this area.

Although they do not specifically research IS Integration, Bingham and Davis (2012) studied how organisations learn via a combination of learning processes when internationalising (which included acquisitions) for the first time. They use four learning processes, trial and error, experimental, improvisational, and vicarious (see table 2 for a full description), as a frame through which to study how novice firms learn to internationalise.

Learning process	Description
Trial and error	Learning based on the outcomes of previous actions (Baum and Dahlin 2007; Bingham and Davis 2012)
Experimental	Learning based on the outcomes of small purposeful tests (Bingham and Davis 2012; Cook and Campbell 1979)
Improvisational	Learning from the results of changing behaviour 'on the fly to' overcome new challenges (Bingham and Davis 2012; Miner et al. 2001)
Vicarious	Learning via the experiences of others (Bandura 1965; Bingham and Davis 2012)

Table 2. Learning Processes

Acknowledging that they are only a subset of the known discrete learning processes, Bingham and Davis (2012) elect to conduct their study using the learning processes listed above as the processes have

recognised importance and prevalence within literature. Based on their findings, their selection proved suitable for understanding the ways that firms learn to internationalise for the first time. Similarly, this paper explores the notion of how firms learn to do something for the first time – acquisition IS integration. As such, the same learning processes should be a suitable frame through which to study this phenomenon. Using the four learning processes as a theoretical lens, this study seeks to understand how a novice acquirer can build the acquisition IS integration capabilities in anticipation of an acquisition.

3   Methodology

This research is exploratory, as it seeks to understand a topic that has, to date, been under researched (Yin 2013). As such, this research follows the case study methodology, which is a suitable methodological choice when conducting exploratory research or seeking to answer a "how" research question (Yin 2013).

3.1   Case Selection

This research follows the single-case study design, observing one organisation as it learnt the critical acquisition IS integration capabilities. This research design was selected for two reasons. First, the case company can be considered representative or typical of others like it, therefore the single-case study is an acceptable approach (Yin 2013). Additionally, focusing on a single case meant the researcher was able to spend more time at the one company, studying it in more depth. The specific case was selected for several reasons. First, the case company's IT organisation would be considered an average factory IT organisation, setup to support a range of operationally vital IT systems that hold low strategic importance (McFarlane 1984). Second, although they had executed M&As in the past, the case company is considered a novice acquirer. Their most recent acquisition had been over a decade earlier, and there was very little residual knowledge still remaining within the company about M&As. Finally, they had taken the initiative to begin preparing for an acquisition, before one was announced. Specifically, within IT, the management had recognised the need to learn the required acquisition IS integration capabilities, and that this would take a considerable amount of time. As such, an IT M&A team was setup within the IT department to begin learning the acquisition IS integration capabilities. Their unique situation, and their willingness to be involved in the research, made them ideal subjects for this case study.

3.2   Data Collection

Twelve interviews were conducted with staff members that were selected due to their direct involvement in IT M&A preparation activities. They held a variety of roles, including the head of the IT M&A team, the IT M&A program leader, members of the IT M&A team, and staff of the broader IT organisation. Semi-structured interviews, following an interview guide, were used as they are considered the most appropriate for conducting exploratory investigations and they are one of the preferred methods of data collection when undertaking case studies (Saunders et al. 2009; Yin 2013). The twelve interviews were conducted either in person or over the phone and lasted approximately 1 hour each. Each interview was transcribed and reviewed by the author to ensure the transcription's accuracy.

Additionally, the author observed the work done by the IT M&A team over a period of nine months including: the development of plans and tools, workshops and meetings that were held with key stakeholders, and presentations to the organisation. During this time, they recorded observations in a research diary as is recommended during a research project (Nadin and Cassell 2006). As such, their recorded observations, and the raw data accessible through this relationship (such as PowerPoint presentations, consultant reports, and emails), were also used as data for analysis. For example, reflections of how decisions were deferred in meetings was seen as supporting evidence of how the company did not use improvisational learning (this is explained further in section 4.3). Additionally, these data sources were useful for increasing the accuracy and efficiency of the interviews. For example, due to the history that had been recorded in the diary, the author was able to challenge the timeline reported by an interviewee. After being challenged, the interviewee corrected their recollection (which was further verified by other interviews).

3.3   Data Analysis

The collected data was analysed so as to identify instances when the novice acquirer used the four learning types (trial and error, experimental, improvisational, or vicarious) to develop their acquisition IS integration capabilities. To do so, the data was read and coded using the incident to incident variation of Glaser and Strauss' Constant Comparison Method (Glaser and Strauss 1967; Charmaz 2006; Corbin and Strauss 2008). However, as opposed to coding for the purpose of discovering information and then

developing grounded theory, this process was used as a means by which to identify occurrences of the four learning types (Charmaz 2006).

To accomplish this, a data source was read by the author, and upon identifying an incident they considered whether or not it aligned with the definition of one of the learning types. In the majority of cases, the incident did not, and no code was assigned. However, when an identified incident could be categorised as one of the four learning types, it was coded as such. This process continued, analysing all incidents from all data sources, constantly comparing them to both the definitions of the four learning types, and other coded incidents. This ensured consistency in the coding. After coding an incident, it was then categorised as either a part of learning the diagnosis capability or a part of learning the integration execution capability. This was done by considering how the learnt skill contributed to the success of the overall acquisition IS integration.

Analysing the data revealed how the case company developed their acquisition IS integration capabilities by using a combination of the learning types. The result of the data analysis was a series of incidents that were each coded as one of the four learning types and categorised as contributing to the development of either the diagnosis or the integration execution capabilities. The following section presents the findings of the analysis.

4   Case Description and Analysis

The case study researches a large European shipping company, ShippingCo, as its IT department learns the two critical capabilities required for acquisition IS integration in anticipation of an acquisition.

The year 2015 saw the beginning of a major round of consolidation throughout the shipping industry. In the nine months prior to June 2016 three major shipping M&A deals had been entered into, redefining who the top players in global shipping were. Foreseeing the pending industry wide consolidation, ShippingCo's CIO, in early 2015, made a conscious decision to prepare for a possible acquisition. Although ShippingCo had been through M&As before, their latest one was more than a decade prior and they had not retained the acquisition IS integration capabilities.

Concerned about acquisition readiness, the CIO tasked one of his senior IT managers with heading up a new IT M&A team. The selected senior manager had extensive M&A experience from many companies and industries prior to joining ShippingCo. From here the new head of IT M&A oversaw the creation of a team specifically tasked with developing the critical acquisition IS integration capabilities at ShippingCo. Some of the activities undertaken to achieve this were the hiring of new personnel, developing integration plans and tools, creating an IT M&A playbook, and building relationships throughout the IT organisation. In addition to those activities the IT M&A team executed a mock acquisition of an internal subsidiary to test their IS integration techniques. During this time, ShippingCo's IT organisation, most of whom had never been involved in an acquisition, began learning about acquisition IS integration.

The following sections discuss how ShippingCo learned the two acquisition IS integration capabilities by analysing their actions through the four learning processes of trial and error, experimental, improvisational, and vicarious.

4.1   Trial and Error Learning

Organisations learn through trial and error by applying knowledge gained from previous experiences to new circumstances (Bingham and Davis 2012). During their preparation, ShippingCo used trial and error learning as a means to develop both their diagnoses and integration execution capabilities. ShippingCo learned through previous M&A experience, and applied this to their preparations. Despite their most recent acquisition occurring over a decade prior, through questionnaires, interviews, and a documentation review, lessons learned were obtained that provided an initial learning experience.

One of the main pieces of knowledge from this exercise was an understanding of how the choice of integration strategy negatively affected a previous acquisition. That is, how a poorly performing diagnosis capability can negatively impact the acquisition. During this previous acquisition, the renewal strategy had been applied, however, problems with the new system meant the company's IS platform was not able to handle the combined business volume and significant problems ensued. These included the issuing of bad invoices and lost cargo. From this experience, ShippingCo learned not to follow a renewal strategy when undertaking an acquisition. For systems not included in the renewal, ShippingCo spent a considerable amount of resources investigating which IS systems were better and should be retained and used by the company. In the end though, the process of making a decision consumed too many resources, and the choice was made to just go with the systems of the larger company. In both

examples, to realise the expected business benefits, the combined company had to get onto one stable IT platform as soon as possible. Instead, a prolonged period was experienced where more IT than necessary was operating, resulting in IT preventing ShippingCo from realising the deal's expected value. ShippingCo already knew that any upcoming acquisition would be of a smaller shipping company, and the purpose of the deal would be to increase their existing operations. Therefore, based on this knowledge, and combined with the knowledge from their previous experiences, ShippingCo decided to follow an absorption strategy, and therefore began preparing exclusively for that. Trial and error learning helped ShippingCo develop its diagnosis capability, so it could select the most useful integration strategy based on the deal rationale.

In addition to learning the diagnosis capability, ShippingCo also used trial and error learning to develop their execution integration capability. Prior to the CIO's decision to setup an M&A team, a group within IT had been responsible for a project to carve out a regional brand from the parent, ShippingCo, and configure it as a separate company. The act of carving out a brand was seen as somewhat similar to that of integrating an acquired company (albeit the other way around). Their experiences with this process gave them a good understanding of the IS landscape at ShippingCo, the people responsible for the IS, and how the IS correlated with business processes. With that knowledge in hand, the IT M&A team was setup with the same staff who had previously worked on the brand carve out. The knowledge gained from the carve out contributed significantly to their understanding of integration execution and the types of challenges they may encounter.

4.2 Experimental Learning

Experimental learning occurs when organisations specifically execute small tests to experience outcomes and learn from them (Bingham and Davis 2012; Cook and Campbell 1979). ShippingCo used experimental learning to refine both of their diagnosis and integration execution capabilities when they did a mock acquisition of one of their subsidiaries. From an IS perspective, the subsidiary operated independently of the parent company, and as such, was a fairly realistic integration experiment. One of the tools tested was a framework to compare the acquiring and target companies' IS landscapes. The tool mapped, at a high level, the companies' core business processes and aligned them to their enabling IS. By comparing the tool's output of one company against the other, it was possible to easily identify which of the target's systems would be absorbed by the acquirer's. Furthermore, using this tool in the experiment revealed the subsidiary was operating business processes not operated by ShippingCo, and that ShippingCo's IS could not support. Learning about this unique business operated by the subsidiary resulted in further development of both the diagnosis and integration capabilities.

ShippingCo learned that their previous plan to absorb the acquired company would not be possible, if they identify unique business processes that their IS could not support. In an acquisition, this unique business process could be a key value driver of the acquisition. In this instance, the IT organisation's diagnosis capability must identify this requirement and elect to perform a partial co-existence integration instead of a pure absorption. The learnings from the experiment also impacted the integration capability, as it reframed the scope of their work. Prior to this discovery, based on the assumption that an acquired company would be absorbed, the IT M&A team's area of focus was ensuring that the existing IS was scalable, and that they had plans for migrating the acquired company to their systems. However, with this new learning, they also had to consider, as part of the IS integration, how they would transition and on-board newly acquired systems that support newly acquired business processes.

4.3 Improvisational Learning

Improvisational learning occurs when, during live events, the organisation changes its behaviour in response to external influence (Bingham and Davis 2012; Miner et al. 2001). The results of this 'on the fly' change in behaviour go on to have lasting effects on how the organisation operates. In the case of ShippingCo, there was no evidence of improvisational learning in the development of the diagnosis, or the integration execution capabilities. When asked about this, interviewees cited the lack of urgency as the main reason for actively avoiding improvisational learning. Due to the preparation being in anticipation of a non-existent acquisition, when an issue came up that had not been considered previously, there was the opportunity to pause and find the best solution. If finding the best solution required consulting more stakeholders or escalating the problem to management, it was possible in this situation to defer a decision until after that had been done. Essentially, there was no need to alter behaviour 'on the fly'.

Two observations can be made from this. First, ShippingCo considers improvisational learning as a suboptimal process. It shows when a new problem is encountered, ShippingCo has a preferred method

to resolve it that does not favour improvisational learning. Second, if this preparation process was happening during the lead up to an actual acquisition, that one might expect improvisational learning to occur. This would be due to the element of urgency being introduced.

4.4   Vicarious Learning

Vicarious learning occurs when an organisation learns via the experiences of other firms (Bingham and Davis 2012; Haunschild and Miner 1997). In the case of ShippingCo, as they learned the two IS integration capabilities, vicarious learning played a substantial role. What is notable about how ShippingCo used vicarious learning was its use as a means to quickly learn generic integration knowledge. However, it then needed to be further developed by people with company and industry specific knowledge to make the information useful for ShippingCo. Examples of this follow below.

One of the first sources of vicarious learning was the head of the M&A team. He was chosen due to his many years of experience overseeing M&As in different industries, and he brought that external knowledge to ShippingCo. His previous experience had proven to him that when acquiring a smaller, similar company, IT's role was to enable the realisation of scale based benefits, and therefore an absorption strategy was the right choice. Therefore, he directed his team to prepare for absorption and shared his knowledge of how to prepare for that. However, after conducting an experiment, and gaining a deeper understanding of the company and the industry, it became clear that an acquired company could quite likely be carrying out business that could not be supported by ShippingCo's existing IS. In this case, a co-existence strategy would need to be applied. As this demonstrates, the vicarious learning had initially contributed to the direction of ShippingCo's diagnosis capability. However, once they began to apply that knowledge to their specific industry, they discovered the need to tailor the approach towards a co-existence strategy that could accommodate exceptions to ShippingCo's business processes.

Another instance of vicarious learning came from the hiring of a project manager with significant M&A experience from outside of ShippingCo. This person brought with them decades of M&A experience, which quickly elevated ShippingCo's knowledge of IS integration. However, again the vicarious knowledge had to be tailored to work within ShippingCo. An example of this is the development of an IT M&A playbook, which described the activities to be executed by the IT organisation in the event of an acquisition. Had it not been for the hiring of the project manager, ShippingCo would have had to learn to make an IT M&A playbook from scratch. Instead, he bought to ShippingCo the knowledge of how to build it, and the rest of the IT team built on that vicarious knowledge to tailor it to the needs of ShippingCo.

A final example of vicarious learning occurred when ShippingCo hired consultants for advice on how to develop the acquisition IS integration capabilities. The vicarious learning from the consultants was useful for building a generic understanding of IS integration activities such as generic system scalability assessments, or generic data migration principles. However, when it came to tailoring the generic approaches into specific actions, the vicarious learning needed to be supplemented with industry and company knowledge from ShippingCo's experienced IT staff. At which point, the IT M&A team, with their experiences in ShippingCo and the vicarious learnings from the consultants, took over the development of ShippingCo specific acquisition IS integration capabilities from the consultants.

The examples above show how vicarious learning played a crucial role in teaching both the diagnosis and integration execution capabilities. However, it also reveals a major limitation of vicarious learning. It shows its usefulness at teaching generic acquisition IS integration knowledge, however it also shows its limitation at developing company or industry specific capabilities.

5   Discussion and Conclusion

This paper sought to explain how a novice acquirer learns the two broad acquisition IS integration capabilities of diagnosis and integration execution in anticipation of an acquisition. To do this, an exploratory case study of a novice acquirer, ShippingCo, was conducted studying their IT organisation's development of a dedicated IT M&A team. To understand how they learned, four discrete learning processes (trial and error, experimental, improvisational, and vicarious) were used as a framework for analysis.

The study found that ShippingCo used three of the four learning processes to develop their IS integration capabilities. Of particular interest was the identification of the way in which vicarious learning seemed to have a limit to its usefulness. In this case, vicarious learning enabled ShippingCo to learn a generic approach to solving a problem; however, the solution had to then be further developed by knowledge specific to the company and industry before it was useful. Another interesting finding was ShippingCo's

avoidance of improvisational learning. Due to the lack of a pending acquisition, they considered it more beneficial to make decisions after an appropriate amount of consideration and consultation as opposed to 'on the fly'.

The main theoretical contribution of this paper is its extension of the understanding of acquisition IS integration by approaching it from a learning perspective. To date, very little research into how organisations learn the acquisition IS integration capabilities exists, and none have studied novice organisations learning them in anticipation of an acquisition.

Several important implications for practice can also be concluded on from this study. First, it gives examples of some of the key activities novice acquirers should undertake when developing their IS integration capabilities. Activities such as developing a playbook, executing tests, or hiring M&A experts were considered by ShippingCo to be absolutely critical. Without them, the IT team would not have had the knowledge and experience necessary to build the acquisition IS integration capabilities, nor the mechanism to coordinate their efforts throughout the IT department. Second, when developing the acquisition IS integration capabilities in anticipation of an acquisition, considering how a team can learn is an important decision for managers to make. The findings of this paper help to guide them by identifying good sources of learning for novice acquirers (such as internal experiences or conducting experiments) and acknowledges the practical limitations of vicarious learning. Finally, identifying ShippingCo's avoidance of improvisational learning reinforces the existing understanding that the critical IS integration capabilities must be built in advance and cannot be effectively developed 'on the fly' during an acquisition (Yetton et al. 2013). If the capabilities could be built effectively on the fly, then one would expect to see some evidence of it occurring. Instead, the evidence shows that it is actively avoided. Therefore, this case should be seen as yet another call to action for CIOs to begin developing their acquisition IS integration capabilities, well before an acquisition is announced.

The limitations of this study provide opportunities for others to continue this stream of research. First, although ShippingCo is representative of a novice acquirer, this research has only studied one company, therefore the findings cannot be generalised. Continuing this study with multiple organisations, within and outside of the shipping industry, and on different continents may further develop this paper's preliminary understanding in new ways. Furthermore, a longitudinal study to research how the learning types used by novice acquirers change as they evolve into serial acquirers would contribute significantly to closing the current knowledge gap.

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