



ORGANIZATIONAL LEARNING: A FUNCTIONAL TRAJECTORY PERSPECTIVE IN RELATED ACQUISITIONS¹

APRENDIZAGEM ORGANIZACIONAL: A PERSPECTIVA DA TRAJETÓRIA FUNCIONAL EM AQUISIÇÕES RELACIONADAS

APRENDIZAJE ORGANIZACIONAL: UNA PERSPECTIVA FUNCIONAL DEL CAMINO EN LAS ADQUISICIONES RELACIONADAS

Daniel Jardim Pardini, Dr.

Universidade Fumec/Brazil
pardinidaniel@hotmail.com

Renata Veloso Santos, MSc.

Universidade Federal de Minas Gerais/Brazil
enataveloso_adm@yahoo.com.br

Denise Campos Machado, Dra.

Universidade Fumec/Brazil
denisecamposch@hotmail.com

Ana Cláudia Azevedo, Dra.

Universidade Fumec/Brazil
anaklaudians@hotmail.com

RESUMO

São vários os estudos teóricos e empíricos presentes na literatura de cultura em fusões e aquisições de empresas que sugerem que as diferenças sociais podem criar obstáculos para se alcançar benefícios no processo de integração. Neste artigo propomos a perspectiva da aprendizagem para analisar o processo de integração em aquisições relacionadas. O objetivo do artigo é investigar as trajetórias de aprendizagem percebidas pelos sujeitos organizacionais envolvidos em três aquisições relacionadas da Vale, a maior companhia mundial na extração de minério de ferro. Os resultados indicam que a aprendizagem não está somente associada as experiências incorporadas nas trajetórias das organizações, mas também na integração do conhecimento obtido nos processos de integração.

Palavras-chave: Fusões e Aquisições; Aprendizagem Organizacional; Perspectiva Funcional.

ABSTRACT

A substantive body of theory and research on the studies of culture in mergers and acquisitions (M&A) proposes that social differences can create obstacles to achieving integration benefits. In this paper we proposed a learning perspective to analyze the integration process in related acquisitions. The main objective of the paper is investigate the learning trajectories perceived by the social agents involved in three related acquisitions made by Vale, the first largest iron mining company in the world. The results indicate that learning not only requires the experience embodied in each organizations' trajectories, but integration of the knowledge contained in each of them.

Keywords: Mergers and Acquisitions; Organizational Learning; Functional Perspective.

RESUMEN

Hay varios datos teóricos y empíricos de la literatura presentes en la cultura de las fusiones y adquisiciones de empresas que sugieren que las diferencias sociales pueden crear barreras para lograr beneficios en el proceso de integración. En este trabajo se propone una perspectiva de aprendizaje para analizar el proceso de integración relacionado con las adquisiciones. El objetivo de este trabajo es investigar las trayectorias del aprendizaje percibidas por los sujetos de la organización que participan en tres adquisiciones relacionadas. Uno de ellos es

Vale, la mayor empresa del mundo en la extracción de minerales de hierro. Los resultados indican que el aprendizaje no son sólo experiencias asociadas incrustadas en las trayectorias de las organizaciones, sino que también son conocimientos obtenidos en los procesos de integración.

Palabras clave: Fusiones y Adquisiciones; Aprendizaje Organizacional; Perspectiva funcional.

1 INTRODUCTION

One of the biggest challenges in the merger and acquisitions (M&A) of companies is to decide the management policies which will be applied to the acquired company. Issues that arise include the changes that should be made, how to make them and the future identity of the new enterprise. Other challenges involve integration of the organizations' learning systems and how to foster loyalty among members who used to be fierce competitors and may have cultural differences standing in the way of adaptation. These are recurring issues in the formation, evolution and transmission of organizational learning, which can result in inter-organizational friction and can create impediments to the introduction of human resources strategies.

Most of the available literature in acquisitions focuses on financial aspects (Child et al., 2001; Nardi & Silva, 2012; Baldacchino & Vella, 2014), strategy issues (Haspeslagh & Jemison, 1991; Barbosa et. al. 2011; Motta et. al. 2013); organizational processes (Cyert & March, 1992) and cultural and behavioural approaches (Buono & Bowditch, 1989; Brandão et. al. 2012). While various M&A studies discuss these aspects from different point of views, little effort has been devoted to examining how transformations occur in the learning process during post-acquisition integration (Vermeulen & Barkema, 2001; Chekkar-Mansouri & Onnee, 2013).

In this paper, we analyze the implications of the organizational learning trajectory during post-M&A-integration. The organizational learning trajectory is defined as the investment spent by organizations to implement past experience as well as new knowledge which may help to improve organizational performance (Henderson & Clark, 1990; Ali et. al., 2012; Amorim & Fischer, 2013). When a company acquires another, it brings with it a history built on a learning system that certainly differs from the one that has been acquired. The changes introduced in the acquired company could be aimed at altering the identity of the people involved. During the post-acquisition period, members of the acquired company may accept such changes only to a varying extent. We argue that a knowledge of organizational characteristics which have developed over time helps to understand how learning systems have also developed and how this contrasts with their restructuring after the conclusion of the deal.

Guided by this orientation, we investigate the learning trajectories perceived by the social agents involved in three related acquisitions made by Vale, the first largest mining company in the world. In order to understand how organizational learning trajectories influence post acquisition integration process among these three studied companies, we used in-depth case studies and applied oral history analysis of interviews and documentaries. Our analyses of intra and inter-organizational learning include the consequences of change for leadership performance and the incremental learning that took place among individuals and organizational functions in both the acquiring and acquired companies. This research enlarges our understanding of how different layers of the company perceive the dynamics of the learning process as they unfolded. The focus of the study covers both the ideology of top management and the ambiguities and contradictions of different individuals and groups.

So, in the first part of the paper we studied about some discussions and challenges that organizational learning studies have to face when dealing with post-acquisition integrations. Secondly we analyzed several intra and inter-organizational learning concepts, trajectories and manifestations in acquisitions, assuming that both learning phenomena are related with each other. Thirdly we applied a methodology based on in-depth case studies and on several oral history analyses of interviews and documents. Four companies were studied: Vale, the acquiring company and, three acquired ones: Samitri, Ferteco and MBR (Minerações Brasileiras Reunidas). All of them operated within the same sector. Fourthly, applying the research methodology, we identified and analyzed five intra and interorganizational learning functions: a) human resources activities; b) mine planning and operation; c) equipment and truck maintenance; d) mineral quality; e) technology systems and automation. Finally we present the result analyses of the three case studies. The next topic describes the proposal of organization learning perspective in acquisition studies.

2 ORGANIZATIONAL LEARNING STUDIES IN ACQUISITIONS

Post-acquisition management challenges constitute a significant theme in discussions of post-acquisition integration. One such challenge is to understand how companies deal with new knowledge introduced after the acquisition. Such knowledge may have long-term consequences, often resulting in changes in managerial procedures and patterns of interaction in both companies. New knowledge is incorporated into the new capabilities received from the acquiring or partner company and these are intended to improve levels of organizational competitiveness and performance (Avellar & Araújo, 2009; Aksoy1 et. al., 2014). Good performance will depend on how the personnel see their jobs, their perception of what is demanded from them in terms of the tasks they will perform and their willingness to perform them (Haspeslagh & Jemison, 1991; Ali et. al., 2012).

While the number of acquisitions is growing, there have not been sufficient successful cases to give rise to a confirmed body of knowledge concerning the sources of their success or failure. Apart from the tendency for acquired company owners to benefit financially, only around a half of all mergers and acquisitions have really brought some benefit (UNCTAD, 2004). Unsatisfactory results are usually attributed to an inflated buying price, managerial incompetence in achieving projected economies, and the strategic position of the company (Krug et. al., 2014; Child, Faulkner, & Pitkethly, 2001; Risberg, 2001). Only on rare occasions has attention been given to the incompatibility between the sets of organizational knowledge involved.

A review of research points to many reasons that can stimulate one company to take control of another. These motivations can be categorized into four principal perspectives, suggested by Haspeslagh and Jemison (1991), namely the financial, strategic, process and behavioral. They all have implications for human resource managements which deal with acquisition processes.

The financial perspective focuses on the business opportunity coming from the organization's external environment which creates wealth for its stockholders. Financial and economic theories focus on improvements in a company's efficiency due to an improved market performance and/or use of resources following an acquisition (Motta et. al, 2013; Nardi & Silva, 2012). Taking the control of other corporations is an important asset because it gives the right to administrate another company's financial resource. (Fama & Jensen, 1983; Jensen & Ruback, 1983).

The strategic perspective refers to the assets created because of the acquisition at an organization-specific level. It focuses on the synergy formed through a consolidation of strategic action (Camargos & Barbosa, 2009). According to the strategic view, the reasons to acquire other organization are related to several options of growth or diversification brought by a new entrepreneurship (Wright, Kroll & Parnel, 1998). The incorporation of a company with similar operational activities offers several sources of synergy. It improves the acquiring company's performance and its efficiency. (Lubatkin, 1983; Chatterjee, 1986; Motta et. al, 2013).

The third perspective in acquisition studies is the process one, which emphasizes the management actions that deal with integration after the transaction had been consolidated. In this view organizational adaptation, shaped by the strategy, enables synergies to be achieved since efficiency and managerial abilities are retained (Kitching, 1967; Howell, 1970; Shrivastava, 1986; Jemison; Sitkin, 1986; Jemison; Sitkin, 1986b; Haspeslagh; Jemison, 1989, 1991; Hunt, 1990; Child *et al.*, 2001). The top management structures and legitimates the cultural and tactical model using operational procedures which meet the needs of all organizations evolved in acquisition (Krug et. al., 2014; Pardini, 2004).

The fourth school is the behavioral which analyses the implications of acquisitions for behavior at the individual and organizational levels. Researchers adopting this perspective claim that the human aspect is often neglected in the acquisition process. According to them, long term success could only be attained through a managerial process of sensible and effective communication which considers the interests and expectations of the people from both parties (Sales; Mirvis, 1984; Blake; Mouton, 1985; Bastein, 1987; Buono; Bowditch, 1989; Mirvis; Maks, 1991; Catwright; Cooper, 1993; Zamboni et. al, 2013).

We suggest a new approach in mergers and acquisitions studies – intra and inter-organizational learning – that will be discuss subsequently.

2 INTRA AND INTER-ORGANIZATIONAL LEARNING: CONCEPTS, TRAJECTORIES AND MANIFESTATIONS IN ACQUISITIONS

Organizational learning is the process of acquisition, dissemination, retention and use of knowledge to improve an organization's capabilities and actions (Fiol & Lyles, 1985; Levitt & March, 1988; Ali et. al., 2012). It can be manifested by the reproduction of organizational rules resulting from discourses, conversations and activities relating to the experiences of potential and existing organizational members (Levinthal & March, 1993; Holmqvist, 2004). An organization has the potential to accumulate and codify knowledge arising from its experiences with practices and organizational life (Levinthal & March, 1993; Amorim & Fischer, 2013). We are interested in understanding how organizational learning trajectories, as previously defined, influence the post acquisition integration process. It is assumed that both past experiences and surviving mechanisms are used to adjust present routines (March, 2006).

Crossan et al. (1999) argue that when embedded organizational knowledge is revealed it can help to understand how organizational processes and changes are structured. Newly acquired competences are part of an organizational knowledge trajectory, and are expressed by mental models that guide strategic actions and decisions. Therefore the ability of an organization to assimilate and spread old and new information will depend on how organizational knowledge is structured, developed and applied (Lubatkin, Florin & Lane, 2001; Aksoyl et. al., 2014).

The intra-organizational learning trajectory also provides an insight into the knowledge which could be transferred among organizations, such as collective learning created through strategic alliances and other inter-organizational forms (Powell et al., 1996). Some authors assume that intra and inter-organizational learning processes can be analyzed separately (Larsson et al. 1998). However, it is important to consider that the organization needs to learn through both internal knowledge development and sharing experiences with other organizations (Levinthal & March, 1993; Holmqvist, 2003).

In the study reported here, we assume that intra and inter-organizational learning are related and that, in order to understand the one, account has to be taken of the other. Inter-organizational learning is a result of a confrontation and combination of available external knowledge with an organization's own experiences gained over time (Larsson, 1998). Therefore, when an organization identifies the necessary knowledge to be acquired, it searches and internalizes a demand that eventually could be reproduced as a source of organizational experience.

Levinson and Asahi (1995) suggest some actions to consolidate inter-organizational learning. The manager could: i) identify the new knowledge that will be used by the company, ii) facilitate the transference and exchange knowledge, iii) use explored knowledge to reach the expected results and, iv) formalize the acquired or adjusted knowledge and give to the organizations feedbacks concerning evaluations. Effective inter-organizational learning could be achieved through formal cooperation among companies.

We are interested in extending the comprehension of intra and inter-organizational learning in the acquisition process. Research into the possible transfer of learning in acquisitions has been neglected (Chekkar-Mansouri & Onnee, 2013). We assume there is a more substantial interaction among similar inter-organizational sets of knowledge in related than in unrelated acquisitions. This is also motivated by the interest of companies from the same sector in securing benefits from potential synergies.

In summary, we identify four possibilities in the process of post-acquisition knowledge integration: (1) transfer of knowledge from the acquiring to the acquired company, (2) maintenance of the acquiring organization's knowledge, (3) maintenance of the acquired company's knowledge and (4) joint development of new knowledge. The methods of the research are showed in the sequence.

3 METHODOLOGY

This research draws on in-depth case studies and employs an oral history analysis of interviews and documentary materials. The advantage of using a methodology focused on multiple sources resides in the ability to secure information on a specific process from different organizational levels and perspectives. Instead of drawing a trivial and single picture of the organizational learning process, the interpretation is sensitive to the variations and contradictions of the attitudes and practices of the actors involved in the acquisitions.

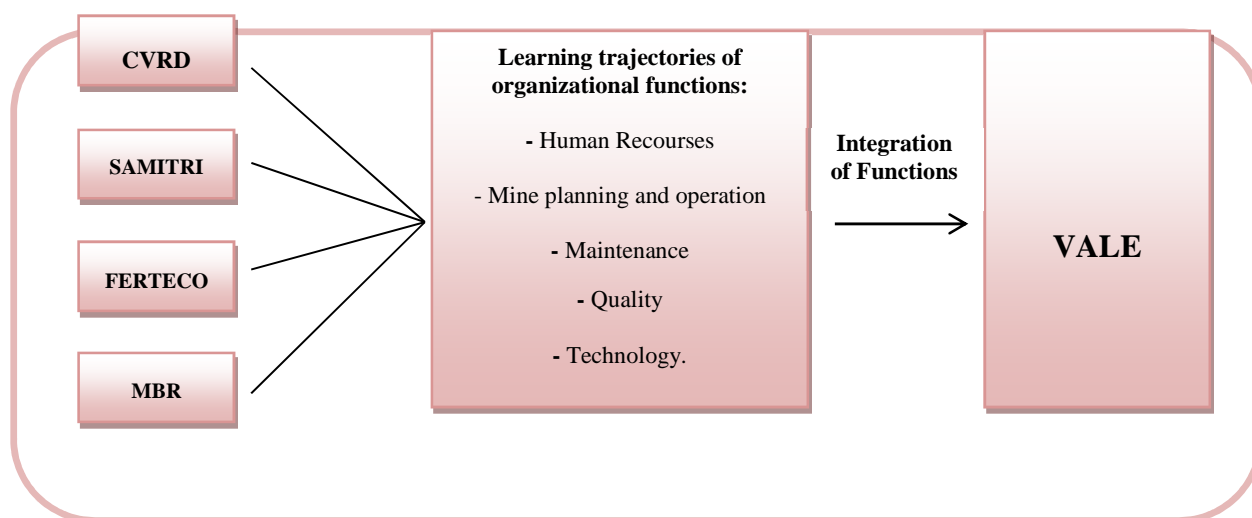
In order to explore the implications of learning trajectories in related acquisitions we studied three carried out by Vale, the world's first largest iron mining company. The decision to study these acquisitions was encouraged by the abundance of information on them. Moreover, the companies – Vale, the acquiring company, and Samitri, Ferteco and MBR (Minerações Brasileiras Reunidas), the acquired companies – operate within the same sector. This which means that there is likely to be comparability in what is relevant knowledge for these companies, plus the potential for a more effective relationship after the acquisition has been consolidated.

The companies were for a long time competitors in the iron mining market. Following a period of state

ownership, Vale was structured with an integrated logistics system including railways and ports that gave the company a competitive advantage comparing with other iron mine companies. Although Samitri and Ferteco historically belonged to private iron and steel business groups, the organizations have different learning trajectories. The same was true of MBR, the third acquired company, which differs from the others in focusing exclusively on the mining of hematite, an ore with high content of iron.

Before commencing data collection, we interviewed two HR managers. Through these interviews, we identified five organizational functions having a strong learning interaction between the acquiring and acquired organizations: human resources, mine planning and operation, maintenance, quality, and technology. For each one of these five functions, we analyzed the learning trajectory and how the integration process influenced the development of inter-organizational learning. Figure 1 below depicts the context of our data analysis.

Picture 1 – Intra and inter-organizational learning trajectory at Vale’s related acquisitions



To understand the intra and inter-organizational learning dynamic between the organizations, the interviews were open-ended. To begin with, we encouraged the organizational actors to describe their involvement in the organizational learning trajectory. Later in the interview, their perceptions of the acquisition process were explored in depth. Presidents, directors, managers, engineers and technicians were interviewed. As Table 1 indicates, there were 86 interviewees: 32 from Vale, 17 from Samitri, 16 from Ferteco and 21 from MBR. In addition to the oral accounts of those who had been working in the companies since 2000, we also accessed historical written materials.

Table 1 - Sample of interviewees by functional category

CATEGORIES	SAMPLE			
	VALE	SAMITRI	FERTECO	MBR
Directors	2	-	-	2
Área and general managers	15	2	6	11
Engineers and non managers technicians	10	11	9	8
Former –presidentes	1	1	1	-
Former-diretors	3	1	-	-
Former – Managers	1	2	-	-
Total	32	17	16	21
Total	86			

Source: Research data

We use oral history to comprehend and analyze the organizational context. Recent history, the rationale for oral history, is mistakenly left as a second choice by some organizations researchers. Recent history permits an analysis of how the past is reflected in organizations and in the lives of people within them. It reveals perceptions not found in the organizations' official documents and it permits a deeper reflection about the relationship between memory and history. This guides the researchers through essential theoretical and methodological thinking.

Oral history is understood as methodological and it is narrated by persons who have experienced relatively recent events. Therefore when we use historical narratives, the subjects focus their discourses on familiar areas; for instance their lives and professional experiences. This historically organized trajectory happens according to a chronological order, which follows a logical objective of principle and rationale. This means when the interviewee narrates his biography, he tends to organize events in sequences showing aspects he considered intelligible and significant (Bourdieu, 1991).

Over 1,300 pages of interviews were selected and grouped from the oral texts. Initially we structured the trajectories of intra-organizational learning of the acquiring company according to its functions. Then a study was done retrieving the functional learning trajectories of the acquired company. Subsequently we addressed the trajectory of learning between the two companies. The following section presents the results.

4 TRAJECTORIES OF INTRA AND INTERORGANIZATIONAL LEARNING IN VALE'S ACQUISITIONS

From the analyses of the oral statements, we identified five intra and interorganizational learning functions: 1) human resources activities; 2) mine planning and operation; 3) equipment and truck maintenance; 4) mineral quality; 5) technology systems and automation.

4.1 Human resources intra and inter-organizational trajectories

Vale adopted the following human resource policies that influenced the organizational learning process: it concentrated learning activities into the iron mine plants of Itabira city creating "the Vale Faculty"; it made large investments in staff training; provided incentives for the geographical and functional mobility of employees; and introduced an early retirement scheme.

The places where Vale began their iron mine activities – Conceição and Cauê plants – were selected to train operational staff in the acquired companies. In the light of Vale’s aims to become a global company, the newly acquired members were socialized to work in the different sites around the world. Movement to another site could represent a major and difficult change for employees who had previously worked in organizations operating within limited markets (Samitri and Ferteco’s cases). The following oral statement confirms the reference of the mine sector units in the region concerning the structure and another corporation’s sites.

Cauê and Conceição iron mines are not a knowledge center. It’s Vale’s faculty. All principal workforces were born and formed there. You learn a lot. You have an opportunity to grow with the company and all its knowhow is shared. Then it is spread through other iron mines. Because of that you see people from Itabira working in other mines. Why is that? Because the school, Vale’s Faculty, the system to extract, treat and load the iron ore are in Itabira. I’ve gone around a large part of Vale getting to know and solving problems but it couldn’t be compared with what you see in Itabira (Vale’s Technician 40).

Another human resource practice widely spread within the corporation and valued in the integration stage was the early retirement policy. Intra-organizational learning trajectories help to throw light on how it was applied in the acquired companies. One, Samitri, retired workers early, facilitating personnel restructuring after the acquisition. Yet, the same did not happen at Ferteco. This company influenced by a “Germany organizational culture” retained older people, which was at variance with alternative strategies to replace those workforces. Two statements below indicate this trajectory

I’ve taken many courses, including some abroad, because you need to stay ahead. There wasn’t another company in Brazil to follow. This has happened since Eliezer’s time [Former Vale President]. One time he saw me working there and asked me: ‘how is your English?’ I answered: ‘so, so’. Then he sent me to the US to take a course for six months, visiting the digger maintenance area, and so on. We used to send a lot of people abroad to take courses. (Former President of Vale 74).

This is an interesting aspect of Vale: you share what you know. When I participate in an event, I bring what I know, and take away with me a lot of things that I also learnt there. So, this movement, this turnover allows knowledge sharing and helps to equalize more Vale’s culture of knowledge and management practices. In the past, I remember, there was a big difference because there was a competition among people, [to go abroad to participate to learning events] then the company started to do a job rotation and people began to get closer, travelling around and sharing [knowledge] (Vale’s Manager 22).

Another HR strategy is to identify the best practices to be applied in similar sectors of acquiring and acquired companies. Again, the historical traces of learning are shown in the interorganizational relationships. German discipline and hierarchy were dominant in Ferteco’s management and they helped the imposition of Vale’s practices and reduction of worker resistance. On the other hand, rivalry and differences in the learning trajectory in the production and hematite areas made it more difficult to implement the synergy project and search for the best practices between MBR and Vale do Rio Doce.

In the next item we describe the mine planning and operation trajectories of the acquiring and acquired companies.

4.2 Mine planning and operation intra and inter-organizational trajectories

Mineral and logistics assets are a key factor in the planning and operation of mines. Vale had developed competences in managing sea and railway transportation systems. Vale’s logistics structure had constrained the

flow of competitors' outputs, especially in Samitri, which depended for a long time on Vale's railways and ports. To compensate for the higher transport cost paid to Vale, Samitri learned and introduced technologies of iron ore enrichment. Its planning and operation were structured according to shareholders' directions at Samitri and Ferteco. By contrast MBR, aiming to retain a simple organizational structure, had developed an operational competence based on cost management.

After the acquisitions, inter-organizational learning trajectories had suggested changes in planning and operation in the acquired mines. Management models centered on quality and control of costs were replaced by a system based on scale economies. These changes required that the acquired companies' workers understand new guidelines in order to introduce the logistics and productive interactions generated by the incorporation of the new sites.

Inter-organizational learning trajectories from Vale to Samitri and Ferteco had indicated changes concerning planning and operation of mines, mainly during the transition from a model centered on requiring quality, demanded by the shareholders or the market, to another system strongly based on the volume of production. A Vale's worker pointed out that it was necessary to change the culture in order to understand the acquiring company's *modus operandi* of production:

When Ferteco's acquisition happened, I came with the acquisition. I had the aim of spreading Vale's production culture, helping to reduce this space of one reserved company coordinated by a Germany group, which had a very different culture from anything we have seen so far in Brazil. There was a very strong Germany characteristic here inside. They were very competent, but their processes were very different. (Vale's Technician 51)

Cultural change is a necessary condition for changes in learning-related behavior. Changing the old habits and values and being able to adapt to a new context are more difficult than learn a new way to do a task (Vechio, 1995). The acquired company's workers have been expected to understand new guidelines in order to create logistics and productive interactions generated by their unit's incorporation into the acquiring company. Vale has chosen a strategy of functional mobility for the acquired company's workers and this has led to the circulation of staff, intense knowledge sharing, and several behavioral reactions.

Concerning Vale's interaction with MBR, its tradition created some technical challenges for Vale's employees. These have concerned cost administration and the best model of management (costs versus production) to be used in the operation activities:

Vale's focus is on quantity; it is scale independent of cost. It produces in a fast rhythm. Everything it does, it sells. But nowadays, because of the crisis, I see they are taking on board MBR's way of working with low costs and great performance. I think there has been two-way copying, but if you ask me, I see a trend to copy more from MBR. (MBR's Technician 84)

Acquiring company non-observance of an organizational knowledge that is valued in the acquired one could create resistance and conflict over the best practices to be followed. At the time this research was conducted, a strong drop in mineral prices due to the international financial crisis helped the choice of models that focus on costs management.

Maintenance, other industrial mine function is analyzed in the sequence.

4.3 Mine maintenance intra and inter-organizational trajectories

Vale's trajectory of maintenance knowledge shows a strong interaction with the operations function, always oriented towards production targets. In order to achieve these targets, management was split between concentration and pelletization areas, as well as maintenance. Unlike Samitri, which outsourced several activities, maintenance was very present in MBR and Ferteco's trajectories.

MBR's maintenance trajectory valued prevention and correction actions. After the mines' integration, Vale implemented the MBR maintenance model for its equipments and machines. Vale's former President recalled MBR competence in this area:

We had diggers operating for 120 thousand hours and that did not happen anywhere else in the world. We were the champions. The big trucks also were champion. Generally you change the trucks after 80 thousand hours, you throw them away, but we used to fix them and they lasted extra 40 thousand hours. The secret was the maintenance. Then we've had a guy here, who had also a sixth sense too. He used to go around taking a look at everything and at the time to set up the equipment. He had a precise touch, accurate tightened bolts, and everything was clean. In the pelletizing we had a spectacular availability which was equal to the European. (Ferteco Ex-president 72)

If on one hand, the recognition of Ferteco's maintenance abilities prevented greater interference from Vale concerning the way to maintain equipment and machines, on the other hand the acquiring company's mode of operation has prevailed in the mine's restructuring. It was therefore necessary to transfer knowledge about the need of operation activities to sustain maintenance activities during high productive periods. An acquired technician described the inter-organizational trajectory that commanded new operational practices at the Congonhas' plant:

Nowadays maintenance is not looked at the same way as it was at Ferteco, because today we work a lot with productivity. We are focused on the productivity tasks. I mean, if before we had a certain barrier with the mine staff, it was because these people wanted to produce and we were resistant to do the maintenance due to a lack of knowledge and participation in the productive system. Vale's business is all about steel ore with low cost, you have to produce and deliver, this is Vale's business. So it doesn't help if I – the maintenance guy – create problems or make it hard to achieve the targets. I have to work together with others to achieve this goal. Sometimes you sacrifice somethings, so the goal can be achieved. (Ferteco Technichian 18)

The Ferteco workers' learning was to comprehend the best way to serve the operation. In the past, they focused on the productive capacity calculations of the machines and vehicles used in the mines, but in the new context the maintenance had to be done bearing the established production targets in mind. Like operation and maintenance functions, mineral quality is one of distinct learning trajectory identify in the research.

4.4 Mineral quality intra and interorganizational trajectories

Learning processes with respect to mineral quality relate directly to the kind of ore extracted. Samitri had focused on the European market and this led the company to invest in quality procedures. The company was certificated in the ISO system, which covered the process from mine until port. In the case of Ferteco, the quality area was restructured followed the product specificities demanded by its principal shareholder, Thyssen Krupp. In MBR, hematite production requires quite simple refining quality procedures compared with other iron mineral processes.

In the sphere of quality oriented inter-organizational learning activities, the mine's laboratory was merged, and the technical practices of collecting and testing ore samples were standardized. The acquiring company also chose to eliminate some certifications and to introduce others that were part of Vale's quality management model.

As related by a Vale's manager, the interorganizational consequences of the acquisition for the quality function were the unification of management of the mine's laboratory, standardization of collecting and test practices of ore samples, and an attempt to bring together the concepts used before by the companies.

At the time the management who was responsible for that was very scared with the differences and thought: "well, now we had a company that is growing, a company that is merged, so we have to have only one market language, a language that explains what we have been selling". And then it has decided to create a laboratory unified management, where we would take care not only of the lab but of the product sample, of collecting to be sure this was a standard procedure for mineral measurement. So, they appointed a manager to get the mine's laboratory involved in this. (Vale's manager 05)

Because of the companies' amalgamation, it was decided to eliminate some certifications and to implement others that were part of Vale management quality model. The same think happens with the technology systems in the integration process.

4.5 Technology systems and automation: intra and inter-organizational trajectories.

There are two principal technologies in mining: information technology (IT) and automation (AT). Practices concern the development, implantation, coordination use of management information systems and network infrastructure. AT involves the use of robotics and tools for efficient mining procedures.

On the one hand, Vale has created, developed and structured computer technology in the mining area. On the other hand, most of its IT is outsourced. The knowledge that was a reference for computerized industrial procedures came from universities and research centers. In the IT sector the company prefers a management model that outsources most of development, implementation and project control.

Regarding computer technology, none of the acquired companies invested in computer-controlled production. But the IT inter-organizational learning trajectories of these mines demonstrate the presence of integrated management systems, with the prominence of the following IT models: maintenance at Samitri and Ferteco, quality and human resources at MBR. On one hand, Vale's trajectory has made the option to outsource a major factor in these activities. On the other hand, Samitri and MBR valued the development of internal technological solutions. As a consequence of the incorporation of these three organizations, ERP systems were closed and investment made instead in Oracle learning, a data management tool that integrated all the units in Vale. This decision created unease among employees who were used to the old systems.

5 CONCLUSION

The aim of this research was to comprehend how the learning trajectory influences inter-organizational learning in related acquisitions. It also sought to offer insights that can improve and support management decisions in acquisitions and meet the need to explore further the transfer, configuration and absorption of inter-

organizational learning. Despite the high rates of post-acquisition failure, little attention has been given to how the integration of teams contributes to learning (Avellar & Araújo, 2009; Aksoyl et. al., 2014). This paper seeks to contribute to the literature on acquisitions when it suggests the importance of understanding inter-organizational learning processes by observing the existing elements throughout their trajectories of intra-organizational learning. In this regard, the knowledge formation, structuring and systematization at an organization may justify possible manifestations of either, acceptance or rejection adopting, transferring or sharing practices in the inter-organizational relations after the acquisition.

In the acquisition process the accumulated knowledge from acquiring and acquired companies could be translated into a relevant information source to provide guidelines for the management of inter-organizational learning. In this way the present study contributes to the literature of acquisitions in observing the elements present in intra-organizational learning trajectories. The cases of acquisition studied lead us to support Holqvist's (2003) statement that we should consider the interrelation among inter and intra-organizational learning constructs.

A new acquisition normally involves dismissals, together with a revision of functions and processes. This sets a premium on the acquiring organization trying to know the limits and potentialities of the knowledge found in both its trajectories in relation to those of the acquired companies. As confirmed also in Chekkar-Mansouri & Onnee (2013) study, in the same hostile environment, it is necessary to create mechanisms permitting people to interact with their co-workers to share information and knowledge transferences. This way learning not only requires the experience embodied in each organizations' trajectories, but integration of the knowledge contained in each of them.

The use of oral history method has allowed us to reconstruct the learning trajectories from both, the acquiring and the acquired company as well as several events which permeated the activities of absorption, transfer and exchange of knowledge after acquisitions. One of the challenges dealing with this type of methodology is the great volume of data generated from interviews. Around a thousand pages of transcriptions were reproduced in this study. Meanwhile, the technique of structuring narratives combined with bricolage tools had made it possible to contextualize in the past and in the present, the organizational functions of both the acquired and acquiring company. Indeed we consider that acquisitions' studies, due to their own specific nature, are characterized as highly complex. By choosing to conduct this research rescuing the organizational functions of learning trajectories and analyzing the acquisitions' implications, as well, have accentuated this complexity even more.

Finally, this research leads to some thoughts that surround the learning processes during business integrations. One of the biggest challenges in managing acquiring organizations is to enable their members to have some insights of the advantages they could get with the companies' growth. In general, a new acquisition is still a matter towards restructuring operations involving layoffs and reviews of processes and positions. Organizations should seek to know the knowledge's limitations and potentials of the companies involved in those trajectories in order to know how to better take advantage of them. In this sense, both the formation and the consolidation of knowledge takes place when two organizations are willing to share their experiences. In order to happen learning collectivization it is necessary to create an enabling environment for individuals to interact among themselves and their peers in a way that they could exchange information and transfer their knowledge.

Thus, learning is not restricted to consolidated experience in the trajectory of organizations, but it happens through the interaction between the structured knowledge from both.

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