



Revista Base (Administração e Contabilidade) da UNISINOS

ISSN: 1984-8196

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Universidade do Vale do Rio dos Sinos

Brasil

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MALDANER, LUIS FELIPE; FIORIN, FLÁVIA SIQUEIRA

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Revista Base (Administração e Contabilidade) da UNISINOS, vol. 15, no. 1, 2018

Universidade do Vale do Rio dos Sinos, Brasil

Available in: <https://www.redalyc.org/articulo.oa?id=337258164006>

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MODELO DE ANÁLISE DA CRIAÇÃO DE SPIN-OFF
CORPORATIVA FOCADO NA ORGANIZAÇÃO
DE ORIGEM: ESTUDO DE CASO DE INDÚSTRIA
TRADICIONAL DO ESTADO DO RIO GRANDE DO
SUL, SUL DO BRAZIL

LUIS FELIPE MALDANER * fmaldaner@unisinis.br

Universidade do Vale do Rio do Sinos, Brasil

FLÁVIA SIQUEIRA FIORIN * flaviafiorin@gmail.com

Universidade do Vale do Rio do Sinos, Brasil

Revista Base (Administração e
Contabilidade) da UNISINOS, vol. 15,
no. 1, 2018

Universidade do Vale do Rio dos Sinos,
Brasil

Received: 05 July 2017
Accepted: 23 January 2018

Redalyc: [https://www.redalyc.org/
articulo.oa?id=337258164006](https://www.redalyc.org/articulo.oa?id=337258164006)

Abstract: Emerging countries have been focusing their development strategy on entrepreneurship along with innovation and technology diffusion. In the context of a traditional industry located in the South of Brazil, this study has analyzed the factors that led a company to invest in creating a corporate spin-off. An analysis framework was developed and turned out the following factor of analysis: (i) Characterization (parent company and spin-off); (ii) Relevant Factors of Spin-off Decision; and (iii) Process (external and internal environment). The framework was applied to a case study and the results show that spin-off creation is an alternative to explore stagnated resources in a parent company upon a market opportunity. Separating the spin-off and integrating it into an innovation environment is a strategy to mitigate the market barriers; while factors such as public policies have limited impact on decision-making, they affect the process of the spin-off creation. The study points out that the creation of a spin-off occurs in a context guided primarily by the opportunity, due to strategic orientation of the parent company.

Keywords: spin off, entrepreneurship, innovation, traditional economy, tech based.

Resumo: Países emergentes têm centrado sua estratégia de desenvolvimento no empreendedorismo aliado à inovação e à difusão tecnológica. Este estudo se propôs a analisar os fatores que conduziram a empresa gaúcha inserida na economia tradicional a investir na criação de uma spin-off corporativa. Para tanto, foi realizado um estudo de caso, a partir de framework de análise estruturado pela literatura revisada, do qual derivaram os fatores de análise: (i) caracterização (empresa-mãe e spin-off); (ii) fatores relevantes à decisão e (iii) processo de spin-off (contexto externo, interno e motivadores). Os resultados demonstram que a criação da spin-off pode ser uma alternativa de mercado e apontam que a decisão de separar o novo negócio e integrá-lo a um ambiente de tecnologia e inovação guarda relação com a estratégia de atenuar barreiras de entrada no mercado. Considerando o contexto externo, os resultados evidenciam que fatores como políticas públicas permeiam e impactam o processo de criação da spin-off,

embora de forma restrita. O estudo aponta que a criação da spin-off acontece em um contexto principalmente guiado pela oportunidade, em razão de orientação estratégica da empresa-mãe.

Palavras-chave: spin-off, empreendedorismo, inovação, economia tradicional, base tecnológica.

INTRODUCTION

The traditional economic paradigm, in which the market was dominated by companies with great physical assets and a large number of employees, has been changing (Dornelas, 2008). For decades, the research and development of a company were considered valuable and strategic assets that were protected, in order to create an entry barrier to competitors entering into their markets. This conduct ensured the market leadership of many industries in 20th century. However, this scenario has been changing as knowledge flow has taken a new dimension (Chesbrough, 2003).

The knowledge-based economy has minimized or extinguished entry barriers in many markets. In this context, many companies have left the market due to the inability to understand the dynamics of innovation. However, companies with entrepreneurial culture have been pursuing new opportunities to maintain their competitive advantage by using such dynamic. In this case, whether a company identifies an innovative strategic project, which is far from its core business, an alternative for its operation is the creation of a new business, a corporate spin-off (Vanhaverbeke et al., 2008 e Hashimoto, 2006). Considering the availability to share experiences and resources, corporate spin-offs are a key instrument of industrial change to a knowledge-based economy (Tübke, 2004).

Porter (1990) points out that the competitiveness of a nation depends on the capacity of its industry to upgrade and innovate. Public policies that promote entrepreneurship combined with technological innovation have been identified as the core of industrial strategy in emerging countries that have growth rate.

Though the Brazilian government has established guidelines emphasizing science, technology and innovation as a structural axis for the country's development (Ministério da Ciência, Tecnologia e Inovação, 2011), positive impact on the development of the country's economy are still expected. Recently, in 2016, the Legal Framework for Science and Technology was established, through Law N. 13243/16, which regulate incentives for scientific development, research and technological training and innovation and changes other nine laws related to the theme. The law is expected to simplify and reduce the process bureaucracy and bring public and private, business and academic initiatives closer to technological development.

Even with the existence of legislation aimed at fostering initiatives of entrepreneurship and innovation, Brazil is a country with a low tradition of investing in corporate spin-off processes. Considering the traditional

companies difficulties to innovate, technological park are an alternative location for companies to develop their spin-off.

Tecnosinos is a technological park located in south of Brazil in a region internationally known for its leather and footwear industry. Recently, the Park has been sought by local traditional industries that seek support to innovate in technology-based businesses, considering a spin-off creation as an alternative.

Taking as a positive impact that a spin-off is able to provide to society, Tecnosinos invested in analyzing one select parent company context that led to the decision of creating a spin-off. The internal motivation to disclose the study is the opportunity to explore the experience in order to support other companies that may trace similar process.

This study deals with the case of a chemical company mainly dedicated to the footwear market that recently invested in creating a spin-off dedicated to industrial automation in the same market. The parent company object of this study has its core business on chemical products, and has identified an opportunity to innovate through the client production process, based on the optimization of shoes adhesive application.

In this context, the research aims to contribute to the corporate innovation entrepreneurship under follow research question: in which business conditions a Brazilian traditional industry decided to invest in new technology-based business?

In order to achieve this purpose, four specific objectives were structured:

- (i) to characterize the organizational context of the parent company and spin-off;
- (ii) to identify motivations that guides the investment decision on a corporate spin-off;
- (iii) to identify resources involved, shared and transferred from the parent company in the spin-off creation process;
- (iv) to describe the process of spin-off creation regarding the development environments for innovation entrepreneurship.

To support this study, based on previous literature collected mainly from Ebsco database and from other sources mentioned in articles provided through this database, in the next section it will be describe a review about spin-off creation in order to provide the basis for the theoretical framework proposed.

THEORETICAL REVIEW

Even if an organization has an entrepreneurial culture based on innovation, this may not guarantee business sustainability. Many companies with that characteristic collapse before technological breakthrough changes and market structures, when they do not align properly the innovation possibilities with internal competencies of the organization (Christensen, 2001).

Innovations that are distant in scope of organizational core business are more likely to have difficulty in management, because their previous experiences do not apply to the challenges and potential risks that arise (Chesbrough e Rosenbloom, 2002).

Managing an organization strategically imposes the need of effort allocation in priorities. Unexploited projects, by reason of being away from the company core business, can be market opportunities. The creation of a spin-off is considered one of the external corporate venturing opportunities, in which a company is able to capitalize effectively internal projects (Luc et al., 2002).

The creation of spin-offs, from different types of existing institutions, is considered one of the most effective strategies to foster entrepreneurship. A spin-off is an agile alternative to the need of exploring ideas, able to introduce products to the market, with aggregate and rapid growth value, considering key factors such as having a smaller structure than the parent organization, experience and inherited knowledge, and specific focus (Hashimoto, 2006 e Holloman et al., 2013). This research seeks to contribute with the literature on the creation of spin-off from existing companies.

Historically, the spin-offs phenomenon gained notoriety in the 80s, mainly due to the frequency of this practice in the United States Silicon Valley region. The US semiconductor industry is the most obvious example of the creating of new businesses through spin-offs Uzunca (2011) presents the formation of Silicon Valley, in US, as an example of the process of spin-offs that emerged from existing companies and, in many cases, the spin-off itself generated others companies in a continuous process.

In the 80's spin-offs were defined as an entrance mode of an industry by creating new companies, when an employee left an existing organization to exploit an opportunity of the same segment (Garvin, 1983). Currently, the term "spin-off" has been extended to new companies that emerge from existing organizations, characterized by the transfer of assets, related to technology that represents a market opportunity (Tübke, 2004; Cozzi et al., 2007 e Nikolowa, 2014).

Regarding typology, the origin of the new company states whether it is a case of corporate or academic spin-off (Tübke 2004). Considering its purpose, spin-offs can be entrepreneurial (when it emerges from an opportunity) or restructuring driven (when it occurs from a top-down process that has the origin in a parent crises environment). In case of the spin-off, creation depends on the support of the parent, it is considered as a friendly spin-off.

SPIN-OFF PROCESS AND INFLUENTIAL ASPECTS

The spin-off creation process was studied from different point of view. The theoretical review indicates that this process is based on a stage selection, in which ideas, projects and models are being eliminated from factor analysis integration (Tübke, 2004 and Ndonzuau et al., 2002).

Tübke (2004) proposes a model in three phases: pre-separation, the moment of separation, and post-separation. The stage of pre-separation covers the aspects related to “spin-off decision” that triggers the process of creating spin-off itself until the moment of separation, which characterizes the beginning of the spin-off independent operation.

Regarding the influential factors, existing research suggests some of the main influent aspects of the process. Luc et al. (2002) set three broad approaches: characterization of parent companies and spin-off, triggers, and success and failure factors of development. Tübke (2004) evaluates the analysis of factors considering decision and success of spin-offs. Those authors consider structural dimensions of analysis fundamentals to entrepreneurship and restructuring, sustainability involving intra and inter-institutional relations and strategy in an integrated analysis approach. They also converge that the influence comes from the external and internal environments of the organization and are related to the own characteristic of the parent organization and spin-off.

Considering factors analysis related to the characterization of the parent organization and spin-off, the process is more likely to occur in environments where skilled human capital is the critical factor of production. Positive entrepreneurial attitudes are seen as being common in parent organizations that decided by the corporate spin-offs creation (Luc et al., 2002 and Tübke, 2004).

Regarding internal environment, the creation of a spin-off is associated with advantages that a new company can represent for members of the parent company, as to the feasibility of technology transfer (Garvin, 1983). The assignment of rights to intellectual property of technology transfer is highlighted as relevant in the processes of spin-off creation. The motivation for the creation of a spin-off type may be associated to the strategic objective of the parent company (Tübke, 2004).

Clarysse et al. (2005) summarizes six factor that potentially influence the creation of a spin-off: (i) human resources (people involved and their skills); (ii) social (networks of contacts and entrepreneurial environment); (iii) financial (capital and financing); (iv) physical (infrastructure); (v) technology: R & D, patents and systems; (vi) organizational (management, autonomy and control).

Personal motivators are consider critical to the mobilization of entrepreneurs to create new businesses. Luc et al. (2002) associate entrepreneurial vision and management style motivators related to directors involved in the creation of spin-off. At the same time those authors associate to employees the desire for their independence, industry knowledge, background of entrepreneurs and self-realization.

From the perspective of the external environment, market opportunity is considered one of the main reasons for the spin-off creation. Spin-offs with high growth rates tend to be associated with growing sectors and are likely to emerge from mature sectors. The authors also converge that public policies and incentives foster the creation of new companies in the corporate spin-off type (Clarysse et al., 2005; Luc et al., 2002 and Tübke, 2004).

Customers and suppliers are often related to motivation to undertake a spin-off. Although external motivators influence the process, they are not critical for the decision of creating a new company (Ferraz e Teixeira, 2014).

In the follow section, it will be formulated an attempt to formulate an analysis framework of the spin-off creation process.

ANALYSIS FRAMEWORK

Since the analysis models found in the existing literature are mainly focused to understand the spin-off factors of success and failure (Ndonzuau et al., 2002; Tübke, 2004; Clarysse et al., 2005), it was considered the need to draw up a new framework for this research. Thus, in phase 1 of the development method, it was defined a framework of analysis based on the alignment between theoretical and research objectives, considering the spin-off creation process; categories and analysis of factors, focusing on aspects related to spin-off decision-making and development. Figure 1 illustrates a simplified representation of the process of developing a spin-off and shows the aspects addressed in this study. The literature that based the construction of the framework is presented at Table 1.

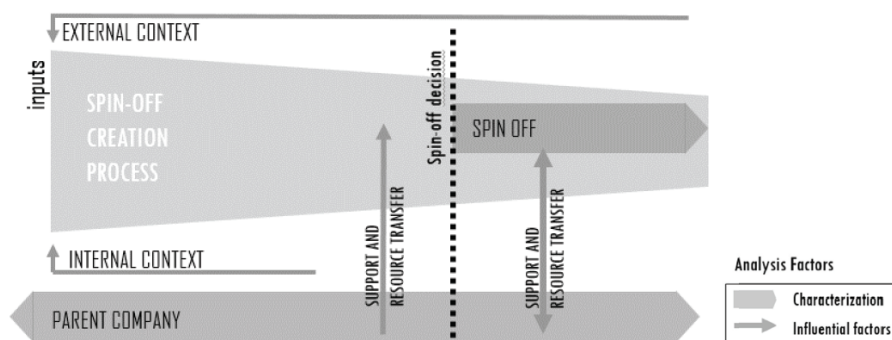


Figure 1.
Analysis Framework .

Source: authors compilation based on Ndonzuau et al. (2002), Tübke (2004), Clarysse et al. (2005).

The conception of the framework resulted into two categories that guide the inferential analysis of the information gathered, characterization and influence factors. The characterization of the parent company and spin-off is considered relevant since the theory indicates that the points of divergence between the companies are critical to the process. The second category explores the influences of relationships into the investment decision and their impact on the creation process. Internal and external context are analyzed from the motivators perspective.

The categories were outspread into analysis factors identified by previous research that addressed the process of creating spin-off, focusing on those related to pre-separation period, which regards the identification of opportunity, decision to invest in a new company and the process. Table 1 presents the analysis factors and the relationship

between categories, related objectives of the research and the theoretical background that supports the study.

Table 1.
Categories, Analysis factors, Related Objectives, and Theory.

Categories		Analysis Factors	Related Objective	Theory
CHARACTERIZATION	PARENT COMPANY	Business aspects: Business Sector; Core business; Portfolio. Entrepreneurship and innovation: R & D process external actors; Culture conducive to the creation and sharing of ideas; resource sharing policy; spin-off policy in the parent organization.	(i) to characterize the organizational context of the parent company and spin-off,	Drucker (1987), Chesbrough (2003), Dornelas (2008), Teece (2010)
	SPIN-OFF	Business aspects: Business Sector; Core business; Portfolio. Type of spin-off. Regarding motivation and support of the parent.	(i) to characterize the organizational context of the parent company and spin-off,	Luc et al. (2002), Tubke (2004), Clarysse et al. (2005), Clarysse et al. (2011)
INFLUENTIAL FACTORS	INTERNAL ENVIRONMENT	Relationship and Support: Relationship Network (ability to establish alliances); HR and infrastructure; financial support or access to credit and investments; operational freedom. Resource transfer: Technology, intellectual and human capital.	(ii) to identify the motivation that guides the investment decision on a corporate spin-off, 3 - identify resources involved, shared and transferred from the parent company in the spin-off creation process	Luc et al. (2002), Clarysse et al. (2005), Tubke (2004) Garvin (1983), Ferraz and Teixeira (2014)
	EXTERNAL ENVIRONMENT	Public policy Market dynamics Industry maturity	(ii) to identify the motivation that guides the investment decision on a corporate spin-off, 4 - describe the process of spin-off creating regarding the development environments for innovation entrepreneurship.	Garvin (1983), Luc et al. (2002), Tubke (2004), Ferraz and Teixeira (2014)

Source: compiled by the Authors.

In the next section, it will be describe the Methodology that was taken to develop this study, focusing on the explanation of the case selection, data collection and case analysis.

METHODOLOGY

Considering the general objective of analyzing the factors that led a traditional industry to invest in creating a new tech based business, a case study method was considered the most appropriated research strategy, combining a descriptive and exploratory approach. Focused on identifying the “hows” and “whys” of the phenomenon, this method enables the retention of holistic and meaningful characteristics of complex event within a real context, where there is no control by the researcher over the events and variables (Yin, 2015).

The case study is also justified in this case since the empirical character of the research, which aims to analyze a specific internal process of an organization, as well as its relationship with the external environment in which it operates (Eisenhardt, 1989).

The sources gathered for the case study were documentaries and in-depth interviews. The documentary sources were collected and analyzed in order to contextualize the case, add information and validate the evidence (Yin 2015). The interviews were based in a semi-structured questionnaire considering that this method enables the interviewee the necessary spontaneity to enrich the research, promoting full description of social phenomena as well as their explanation and understanding (Triviños, 1987) Content analysis was adopted to understand the problem investigated against the theoretical approach, in order to establish consistency in the interpretation of data (Bardin, 2011).

The methodological procedures of this research were based on three macro stages:

- (i) theoretical development, conception project and selection;
- (ii) gathering and description;
- (iii) analysis and conclusion.

This research analyzes the context related to the pre-separation period of the spin-off. Thus, the focus of analysis is the parent company aspects related to the spin-off are addressed when they keep relevance to the understanding of the triggering environment in the parent company.

CASE SELECTION

By linking the research objectives and theoretical framework, it was identified that potentially companies that supported the creation of technology-based spin-off had intense investment in R&D and entrepreneurial profile. Thus, to achieve a consistent study, it was defined as criteria for case selection: (i) company based in South of Brazil; (ii) framed as traditional economy (Rio Grande do Sul, 2013); (iii) mid-size

or large industry; which has supported the creation of a technology-based spin-off; recognized as the entrepreneurship and innovation actions. Therefore, the company was intentionally non-probabilistic chosen, considering the compatibility of the company characteristics to the purpose of this research study.

DATA COLLECTION

From prior document analysis, two in-depth interviews were taken with key people in parent company and spin-off. Based on the redundancy criteria, four other interviews were conducted, using the approach of open questions, relating the connection that the respondent guards with the case study. Table 2 presents the summary of the respondent's characteristics.

Table 2.
Characterization Interviewees.

	Education	Position	Case connection
I1	Business administrator	President	Member of parent company
I2	Chemical Industrial, Master in Production Engineering	Manager of Projects and Business	Member of parent company and spin-off
I3	Business administrator	Director	Tech partner of parent company and spin-off
I4	Economist	Director	Business consultant of spin-off
I5	Electrical engineer	Engineering and Maintenance Coordinator	Member of parent company and spin-off
I6	Business administrator	HR Supervisor	Member of parent company

Source: compiled by the authors.

In addition to the interviews, data were collected from documents assigned by the company and information available on the web, through institutional company website, materials in magazines for industry and online partners journals. Besides that, as secondary data used to support the triangulation of data, more than 30 minutes of interviews from company members to the local press, from 2009 to 2016, were analyzed.

CASE ANALYSES

From the data collected, in the follow section, it will be describe the case study, focusing on the case description, especially detailing the parent company and the spin-off. An inferential content analysis is deployed focused on verification of adherence of the information to the theoretical basis based on factors that influencing the decision and the spin-off

process. At the end of the section, there is a summary of the spin-off process.

CASE STUDY

This study deals with the case of a chemical company mainly dedicated to the footwear market that recently invested in creating a spin-off dedicated to industrial automation. A brief description of facts related directly to the creation of the spin-off is presented as an introduction to the analysis of the factors related to the theoretical framework.

CASE DESCRIPTION

Investing in technological development has been an established practice in the company as a competitive strategy. The portfolio diversification and expansion of markets were paths followed by the company over the years.

The first fact assigned to the spin-off creation is the challenge identified by the company to maintain its competitiveness through innovation that produces impact on its growth. The challenge is considered as a consequence of the established market in which the company operates and a high level of technical maturity of the portfolio. Besides that, external factors affect the company competitiveness. The impacts emerge from the competitive strategy of the Brazilian footwear market in reducing production cost and increasing productivity.

Even though the company core business is chemical products, and its strategy focus on differentiation by technical support. That means the company is close to customers production line, a position that allows access to critical technical information on the production process. In this context, based on internal skills, the company identified an opportunity to innovate through the client production process, based on the optimization of shoes adhesive application. This opportunity made progress in the organization to establish a strategic guideline in the 2010 planning aiming to capture value from optimization of client production process.

From the focus in process guideline, a set of actions was triggered. The application processes of adhesive were reviewed and technical skills were enhanced. This action resulted in a training program in which the client's employees were trained. The first result proved positive, however for a short period, due to the high turnover of employees in the footwear industry. Although necessary, the training showed a short-term alternative and highly cost.

Seeking to add technology to the manual process, another area explored by the company was the import of equipment for applying adhesives. In this case, the import of equipment was confirmed as an alternative of greater scalability to the optimization of the production process and technical performance. From the import experience, the company reports a need of significant technical and financial investment because

of the need to adapt the imported equipment due to: (i) Brazilian labor legislation on the safety of the operator; (ii) instability of energy supply; and (iii) to change mental model production consolidated in the Brazilian footwear industry. From this initiative, the company also reported concerns about the risk associated with the company image in case of technical failure.

However, the strategy of import equipment was highly impacted by the instability of the Brazilian economy. The return of investment had been compromised by the devaluation of the Brazilian currency that resulted in the doubling of imports cost. In this scenario, the company reviewed its strategy based on its internal skills and ability to establish alliances. Thus, raised the opportunity of self-development solutions focused on automation of industrial processes.

This strategy found support for development in the company expertise in industrial engineering, experience in innovation projects, solid international network of technology partners and high entrepreneurial orientation. On the other hand, the strategy found external and internal resistance. Internally, resistance was associated with the divergence of the company core business, whereas the company advantage in technical service may be compromised in the event of failure of the proposed technology. Externally, the perceived strength was linked to perception of value assigned by the client.

From the set of factors raised, the company has validated the strategy as a potential market opportunity and found the possibility of reducing risk and assigning value to the customer by creating a spin-off.

ANALYSIS OF PARENT AND SPIN-OFF CHARACTERIZATION

The parent company, object of this study, is a family business, dedicated to the chemical industry, inserted in the traditional economy in South of Brazil, with branches in other states and in Argentina. Founded in the 60s, the company began its activities motivated by the expansion of the footwear industry. In the following decade, the company expanded its market through the acquisition of a paint industry dedicated to real estate, and then through the metal-mechanic and furniture sectors. Currently the company has about 500 employees, with revenues of approximately US \$ 250 million, and a portfolio of over 2,500 products.

The spin-off is a tech-based company located at Tecnosinos São Leopoldo Tech Park created in 2014 from an opportunity in industrial automation. Its portfolio is made up of special projects and consulting in industrial processes focused on the footwear industry. The business model of a new company was initially designed and proposed by the project manager of the parent company, as an alternative to explore a business opportunity identified in footwear industry, with a view of future expansion to other company of that sector. Since the decision of spin-off creation, in addition to the position in the parent company, the project manager also took over the position of executive manager of the spin-off. The parent company is part of the spin-off structure, and plays

an important managerial role in the new business, but low impact in technical decisions, where the spin-off has broad autonomy in operation. The spin-off has two technical employees, covering engineering and chemistry areas, and shares human resources with the parent company for financial, marketing, controlling, and commercial issues.

The spin-off emerged in a context of entrepreneurial parent company, which is critical to triggering the new company creation process, aligned with Luc et al. (2002) and Tübke (2004) point of view. It was possible to identify an environment conducive of sharing and proposing ideas. It was observed that the company structure influences individual behavior, encouraging them to the cooperation, initiative and risk taking.

Specific programs aimed at the dissemination of cooperation and engagement culture were identified. Besides that, converging with the company values, the relationship guided by the enthusiasm, trust, availability, and respect was spontaneously noticed during the interviews by the enthusiasm of collaborators to cooperate beyond their routine activities, with the consolidation of the new company project conceived by the entrepreneur spin-off.

It was possible to identify an institutional context oriented by innovation that seeks, systematically, changes through analysis of opportunities. Employees are challenged to think critically beyond their position, seeking to understand why something is done, the impact of its operations and the identifying opportunities for improvement, guided by simplifying processes.

The orientation to the challenge has been identified at different levels of the organization, corroborating that a high valuation of individual entrepreneurship in companies contribute to arise of spin-offs.

As proposed by Clarysse et al. (2005), interviewees reported that raised ideas undergo a critical analysis as to their complexity and impact of implementation, also considering adherence to organizational strategy and especially the organization investment capacity and expected return. The process refers to a logic funnel, where a selection process occurs from the deepening and integration of organization analysis for both internal and external factors.

Besides the entrepreneurial characteristic, as pointed out by Luc et al. (2002) and Tübke (2004), it is possible to identify the influence of an intensive RD&I activity in the parent company. The company continuously invests in the development of new products, either by market pressure or by customer demand. Historically the company develops projects in partnership with its suppliers supported by client participation. Recently, partnerships development have been enhanced with research centers, which contribute to strengthen its relationship with suppliers of raw materials and positively affect the quality and performance of their products. Thus, it is possible to observe that sharing of technical information and the establishment of alliances with external actors is in high maturity level.

In this organizational context, the visionary leader, founder entrepreneur of the spin-off, challenged by a strategic direction, found

the entrepreneurial culture of the parent context necessary to market opportunity identification from the different combination of resources available in the organization (Schumpeter, 1942).

Even without a specific internal policy aimed to create new business, nor another company created history before, it is possible to characterize the parent company as an investor organization (Hashimoto, 2006) considering the availability in allocating resources and sharing risks to allow identified opportunity to move forward.

Although the parent company has a historical background of portfolio diversification and new markets, the company faced a situation where the opportunity presented barriers to the exploitation, mainly by extrapolating the core business (Dornelas, 2008). Besides that, the traditional market in which the company operates and the maturity of the product portfolio were also pointed as factors related to the difficulty to innovate.

As a determining factor to the decision of a spin-off process (Dornelas, 2008), an analysis of marketing feasibility was carried out, confirming the prospect of opportunity envisioned. Thus, as predicted by Dornelas (2008) and Hashimoto (2006), the creation of a spin-off was the alternative chosen by the company to facilitate the exploitation of opportunity, optimizing available resources and minimizing risks.

ANALYSIS OF FACTORS INFLUENCING THE DECISION AND THE SPIN-OFF PROCESS

The internal context has been identified as crucial to the emergence of spin-off, according to the expected in the literature (Luc et al., 2002). The interrelationship of factors, present in the parent company, guided the creation process as well as the type of spin-off generated, taking into account the willingness to support the initiative and to invest in the process.

Considering the support provided by the parent company as infrastructure and human resources, physical capital was less relevant than human resources allocated. The design of the spin-off and its initial operation, required minimal infrastructure. The test demand, trials and pilots were allocated into the parent company without significant impact to the operational routine.

From financial support or access to credit point of view, Clarysse et al. (2005) point out the financial resources as influencing the decision process. In fact, in this case, the resource availability in the parent company was crucial to the process of creating spin-off, but the ease of access to credit was not identified as relevant.

The creation of the spin-off occurred, like predicted by Tübke (2004), considering the critical impact of experience transfer. The market and management experience had a positive impact on the process, but the technical expertise was identified as the driver of the actions that resulted in the spin-off creation.

The external environment had a strong influence in the creation process of the spin-off, but regarding the decision to invest in the creation of spin-off, it was noticed that external environment had less relevance, as predicted by Luc et al. (2002) and Tübke (2004).

Considering as an external influence factor the dynamics of the markets, it could be identified, according to the proposed by Luc et al. (2002) the creation of spin-off was related to the industrial context in which it operates.

The common market between the parent company and the spin-off is aimed at reducing costs, especially production costs, as a competitive strategy. The aggressiveness of the competitive dynamics, as reported by interviewees, resulted in destabilization of the relationship with some regular customers. On the other hand, initiatives that result in increased industrial productivity gain attention in the market.

Thus, it is clear that market pressure, combined with aspects such as entrepreneurial vocation of the company, supported by strategic direction to focus on process, led to the triggering of a series of actions that led the company to identify opportunities for industrial process automation and, later, the consolidation of a spin-off.

Considering the influence of public policy, it was noticed that actions that influenced or triggered the creation of spin-off were contiguous to the actions and initiatives of the parent company supported by public policies. Thus, it was possible to identify that public policies permeated, influenced and supported recent actions of RD&I parent company by the celebration of technological cooperation with research centers for joint development of technologies, and by the tax benefit granted to the company by legislation geared to organizations that invest in RD&I.

In addition, it was mentioned by interviewees I1 e I2 the influence of startup and the tech park regional movement, supported by public policies, on the conception of the spin-off design. Besides that, it was reported that the possibility of raising public funds, through the spin-off, was one of the factors considered during the stage of decision to invest in the creation of a new company. Therefore, it is possible to state that public policies influence the process of creating a spin-off.

Regarding the maturity of the parent company and spin-off industries the case analyzed corroborates the influence of this factor. From the data analysis, it was identified that the parent company operates in a context of mature industry in which the market is characterized by high competitiveness, based on few big customers, where demand for products, the current model, is practically constant with a tendency to decrease. In contrast, the automation industry of the spin-off is young, dynamic and characterized by a wide possibility of customer base, not facing an intense competitive environment.

In summary, the analysis of the case of the content under study reveals that a number of external factors permeated the stages of identification of opportunities and the development of the process, however, carrying less influence in decision-making on investment when compared to the internal context.

SUMMARY OF THE SPIN-OFF PROCESS

Although immersed in a context of hard competition and low prospect of new growth curves it is evident the entrepreneurial nature of the initiative by the analysis of organizational aspects, personal and external triggering of the spin-off process.

From the perspective of drivers the process of spin-off creation presents as initial inputs, the maturity of the portfolio of the parent company products, the strategic guideline that indicates the need to capture value through processes, unused internal assets and an identification of a technology nationalization opportunity.

Considering the internal parent company context, they are seen as key factors of the triggering process: entrepreneurial corporate profile (appreciation and support for individual initiative), maturity in RD&I, availability to share and transfer resources.

The difficulty for developing disruptive innovation was identified as arising from three aspects: high maturity of the portfolio of products, market conservatism, and lack of resources allocated exclusively to the development of innovation projects.

Regarding the external context, it was observed that public policy, market dynamics, and industry maturity affected the process of a spin-off creation. Regarding the influence of public policy, it was possible to identify direct and indirect relation to the spin-off process. Whereas important RD&I processes of the parent company were supported by public policies, they assigned indirect relation to the process of creation of the new company.

At the same time, public policies that have highlighted incubators and technology parks in the region had a direct relationship to the creation of the new company. The establishment of the spin-off in a technology park considered mainly two positive impacts: (i) the potential development of strategic technologic alliances; (ii) the association of corporate image to a business environment recognized for developing innovative technologies. In addition, public policies to support start-ups affected the decision to invest in new businesses, especially the expected grant resource funding for the new business leverage.

Regarding the market dynamics, the conservatism of the footwear market was also pointed out as a key factor to invest in the new company, as it is attributed to this factor the challenge of capturing customer value with technological solutions proposed by the parent company. Besides that, the footwear market in Brazil is nowadays highly oriented to costs reduction, which have been resulting in a deep process review in many industries, but also in a negative pressure related to price competition.

The maturity of the industry also emerges as a difference between the two companies. While the parent company navigates in a mature and traditional industry, where growth is slow and predictable, the spin-off emerges in a recent and dynamic context, where uncertainties and potential opportunities are numerous. The mature market of the parent company is characterized by the chemical sector, where the company

has a solid relationship with the main players in the chemical sector, having reached a broad and high quality portfolio that represents a high dependence on technological advancement of the chemical industry suppliers. The challenge in advancing new technologies in this sector are also related to the manufacturing park of the shoe market where the company operates. In this case, the advance of the chemical industry depends on the update of the industrial park where its products are applied, context in which emerges the opportunity to create the spin-off reported in this research.

The Table 3 summaries the main aspects identified in the Case analyzed based on the Analysis Factors addressed by the framework proposed.

Table 3.
Summary of Case Analysis.

Categories	Analysis Factors	Case analysis
CHARACTERIZATION	PARENT COMPANY	Foundation: 60s, Company headquarters in South of Brazil and 2 branches, 500 employees, Main markets: real state, footwear, furniture in Latin America, Corebusiness: chemicals, 2.500 products: real state paint, industrial paint and adhesive, Import raw material since the begging of operations and exports since 80s, Internationalization to Argentina 2014, Corporate governance established between 2011 - 2012, RD&I - Suppliers, Clients and CTI.
	SPIN-OFF	Headquarter in South of Brazil, located in a Technological Park, 02 direct employees, Market: footwear in Brazil
	Type of spin-off	Entrepreneurial driven, Friendly processes
INFLUENTIAL FACTORS	INTERNAL ENVIRONMENT	Social networking and ability to establish alliances. Sharing network providers, technology partners, customers, partnerships with institutions and commercial coverage. Human Resources. Technical, operational and managerial HR sharing, dissemination of innovation culture, Infrastructure low initial need for strategic stability, Financial support or access to credit and investment. Investment in the creation of spin-off and support the operation. Expected of raising fund for development, Operational freedom. High influence in management decisions. High degree of freedom technical management.
	Resource transfer	Technological, capital intellectual and human. strategic factor - core business of spin-off is a based on technical skills of the parent organization, including technical knowledge in the production process, chemical and industrial engineering.
	EXTERNAL ENVIRONMENT	Expansion and projection of Technological Parks in the region of the industry, Fostering innovative entrepreneurship - start-ups ecosystem, Expected raising fund for development.
	Market dynamics	Footwear pressure on cost reduction - triggered the process focus approach.
	Industry maturity	Parent company mature - high dependence on technological advancement of the chemical industry suppliers.

Figure 2 illustrates the synthesis of the analyzed factors represented in the form of stream in accordance with the proposed framework. The linear representation is only illustrative, not limiting its occurrence in a timeline. On the contrary, many factors overlap and interrelate.

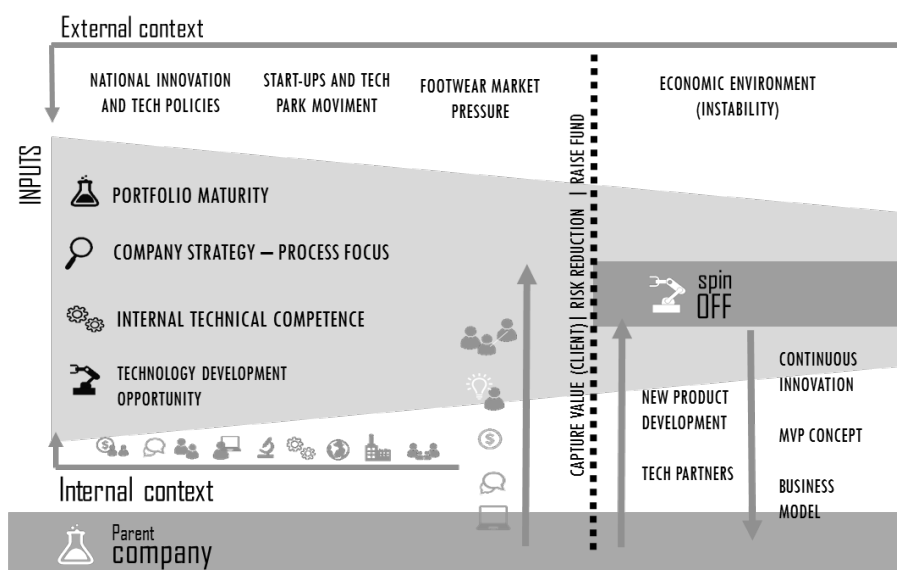


Figure 2.
Spin-off Process applied to the Framework (based on Figure 1).

Source: authors' compilation based on Tübke (2004).

Thus, Figure 2 is a summary of the process, taking the Framework (Figure 1) from the literature review. From the original theoretical framework, this study insert in the same model, all phases of the spin-off creation. From the external context, some important issues were considered such as National innovation and Tech Policies, Startups and Tech Park Movement, Footwear market and industry. On the other hand, internal technical competence, company strategy, portfolio maturity and technology development opportunity are the main aspects considered by the parent company to the spin-off creation. At the end, spin-off is a result of this process that makes possible new product development as a minimum value product (MVP). Also, it is possible to say that this process offered an opportunity to the company' continuous innovation.

Although it was not the object of analysis of this study, after the separation of the spin-off there were evident impacts of the relation between the new and the parent companies. Even in early development stage, by providing automation solution focused on the applying of adhesive for the footwear market, the spin-off is already able to deliver to the parent company relevant learnings, such as the agile dynamic of the start-up business model, where testing and validating products under development is indispensable to follow the speed of the market and enable its alignment, when necessary.

FINAL REMARKS

There are many barriers faced by a traditional industry to generate new growth cycles. Exploring market opportunities by the creating of a spin-off is an alternative with a high potential of success.

Once a technological park is able to carry out a solid analysis of the context of the parent company, the support that can be provided tend to be more assertive and effective.

The purpose of this study was to understand the factors that led a traditional company to invest in the creation of a new tech-based company, a corporate spin-off. To meet the objective, an analytical framework was proposed to analyze aspects related to the creation of a corporate spin-off in a systematic way.

From the case study analyzed, the entrepreneurial vocation of the initiative is highlighted among the factors that influence, since the identification of opportunity until the creation of the new company.

The internal context played the main role in the decision-making process. On the other hand, regarding the creation process of the spin-off, a balance was identified considering internal and external influential factors. The study points out that the creation of a spin-off occurs in a context guided primarily by the opportunity, due to strategic orientation of the parent company, coupled with entrepreneurial initiative of collaborator, associated with the possibility of valuing and monetizing internal assets of the company.

The creation of spin-off was considered an opportunity to value assets and expertise of the parent company. In addition to an opportunity of future earnings to the parent company, the creation of a spin-off is considered as a strategy to strengthen the company position by valuing its image.

This case study shows that the proposed framework provides elements that indicate consistency. In the same manner, the proposed factor analysis seems to be appropriated in order to observe aspects in the studied case. Thus, as a theoretical contribution, the model tends to be suitable for the analysis of other cases of companies involved in the creation of corporate spin-offs.

As an empirical contribution, although the methodology used in this study does not allow generalization, a series of analysis grants to support the decision making of companies seeking alternatives to exploitation of the identified market opportunities. Still, the study findings indicate subsidies for players outside the company devise or improve programs to support companies seeking to exploit market opportunities through new business.

As demonstrated throughout this research, spin-off success factors have been investigated in the existing literature. This research focused on the aspects that potentially lead a traditional industry to generate a technology-based spin-off, but does not address the main factors that have negatively impacted the process. The results presented in this study suggest future research opportunities focused on exploration analysis

factors not addressed, such as the main barriers to trigger the process of corporate spin-off, since only aspects that benefited from the creation of the new company were investigated. Yet, considering the analyzed case, both companies have intention to act in the common market. Another suggestion would be to analyze the factors related to the parent company context that interrupts the start of a spin-off with the intention of acting in a diverse market.

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Author notes

- * Universidade do Vale do Rio do Sinos. Av. Unisinos, 950, Cristo Rei, 93020-190, São Leopoldo, RS, Brazil.
- * Universidade do Vale do Rio do Sinos. Av. Unisinos, 950, Cristo Rei, 93020-190, São Leopoldo, RS, Brazil.