

Horizontal Diversification Strategy: a Study in Graphic Companies in the Metropolitan Region of Campinas-SP

Estratégia de Diversificação Horizontal: um Estudo em Empresas Gráficas da Região Metropolitana de Campinas-SP

Estrategia de Diversificación Horizontal: un Estudio en Empresas Gráficas en la Región Metropolitana de Campinas-SP

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ABSTRACT: *This article aimed to identify how the horizontal diversification of printing processes used in printing companies in the Metropolitan Region of Campinas-SP. The empirical study considered a sample of four printing companies belonging to this region. The method used considered exploratory and qualitative, in a multiple case study. The data collected were treated and analyzed with the aid of qualitative data analysis software Atlas.ti 8. The main reason for the diversification of printing processes, found in the research was to compensate for the drop in production of the traditional system. Among the main difficulties encountered by companies is the lack of financial resources, knowledge and qualified labor. It is considered that the main discovery of this research is that a large part of the graphic companies that diversify use outsourcing. Thus, it understood that the digital printing, laser and plotter market are in expanding.*

PRINTING PROCESSES. GRAPHIC INDUSTRY. HORIZONTAL DIVERSIFICATION STRATEGY.

RESUMEN: *Este artículo tuvo como objetivo identificar cómo se utiliza la diversificación horizontal de los procesos de impresión en las empresas de impresión de la Región Metropolitana de Campinas-SP. El estudio empírico consideró una muestra de cuatro imprentas pertenecientes a esta región. El método utilizado se considera exploratorio y cualitativo, en un estudio de caso múltiple. Los datos recopilados fueron tratados y analizados con la ayuda del software de análisis de datos cualitativos Atlas.ti 8. La principal razón para la diversificación de los procesos de impresión, encontrada en la investigación, fue compensar la caída en la producción del sistema tradicional. Entre las principales dificultades que enfrentan las empresas se encuentra la falta de recursos económicos, conocimientos y mano de obra calificada. Se considera que el principal descubrimiento de esta investigación es que gran parte de las empresas gráficas que diversifican utilizan la subcontratación. Así, se entiende que el mercado de la impresión digital, láser y plóter está en expansión.*

PROCESOS DE IMPRESIÓN. INDUSTRIA GRÁFICA. ESTRATEGIA DE DIVERSIFICACIÓN HORIZONTAL

RESUMO: Este artigo teve como objetivo identificar como a diversificação horizontal dos processos de impressão é utilizada em empresas gráficas da Região Metropolitana de Campinas-SP. O estudo empírico considerou uma amostra de quatro empresas gráficas pertencentes a esta região. O método utilizado é considerado exploratório e qualitativo, em um estudo múltiplo de casos. Os dados coletados foram tratados e analisados com o auxílio do software de análise de dados qualitativos Atlas.ti 8. Segundo os achados do estudo, a principal razão para a diversificação dos processos de impressão foi para compensar a queda na produção do sistema tradicional. Entre as principais dificuldades encontradas pelas empresas estão a falta de recursos financeiros, conhecimento e mão de obra qualificada. Considera-se que a principal descoberta dessa pesquisa foi que grande parte das empresas gráficas que diversificam utilizam a terceirização. Dessa forma, compreende-se, que o mercado de impressão digital, laser e plotter, estão em expansão.

PROCESSOS DE IMPRESSÃO. INDÚSTRIA GRÁFICA. ESTRATÉGIA DE DIVERSIFICAÇÃO HORIZONTAL.

Introduction

Currently, huge and rapid changes, in different social and economic aspects, lead companies to seek new possibilities for growth, development or maintenance of their position in the market (Adobor, 2019). Given this scenario, the process of thinking differently and considering other possibilities assumes an important role in the acquisition of a competitive advantage (Lembe, 2018).

According to Dal *et al.* (2017) and Pessoa (2010), one of the strategies that presents greater competitive effectiveness is the diversification of products and / or services.

The theoretical discussion around the aspects of diversification intensified mainly after the work of Penrose (1959). In her work, the author addresses the characteristics common to organizations, whose growth is associated with the expansion of diversification. According to Vallandro (2016), the theme of diversification has been widely studied by different areas of knowledge in the last decades as a central theme in strategic management research.

According to Kretzer (2015), the manufacturing industry was one of the economic activities that most diversified its activities, and the printing industry, belonging to this sector, exhibited the highest levels of diversification.

According to Costa (2018), this result is largely due to technological changes in the sector and conditions of great competitiveness. Also according to Costa (2018), printing companies diversify their printing models in contrast to the aforementioned, thus forming a portfolio of diversified products and services.

For Smith & Coy (2018), the diversification strategy can improve competitive performance when it contains the necessary subsidies to support it. With the same understanding, Freire (2019) argues that by diversifying the mix of products and / or services, the company provides, in the same establishment, products and services capable of serving a wider range of customers.

In this sense, diversification in printing companies is a basic aspect, but not widely understood in the studies of these companies (Caspary, 2016; Justo, 2015; Kretzer, 2015; Vieira; Araújo, 2015).

Thus, it is necessary to investigate whether printing companies in the Metropolitan Region of Campinas-SP, which use diversification strategies, improve competitive performance. Thus, this study aims to answer the following question: how is the horizontal diversification of printing processes used in printing companies in the Metropolitan Region of Campinas-SP?

In this sense, this study is justified by evaluating the implementation of the horizontal diversification strategy, aiming to present the difficulties encountered and the results of the horizontal diversification strategy in each researched company.

2 Diversification

2.1 Diversification Strategy

The diversification strategy approached in different ways in the literature. According to Teece (1982) and Mintzberg *et al.* (2000), diversification comes from the nature and evolution of organizational skills, which involves new knowledge and skills intermediated by endogenous and exogenous forces that are formed during the learning process.

For Porter (1985), diversification occurs through a set of external forces (demand, social trends, economy, clientele, innovations, among others) that are uncontrollable and influence organizational decisions.

For Ansoff (1971), diversification occurs due to market perceptions about the level of product maturity, which allows the creation of new products and markets. In this sense, Silva (2018) adds that the constant evaluation of products and markets provides new opportunities. Ansoff (1971) defined four ways to diversify:

- Horizontal Diversification - development of new products or services that serve the same groups of customers;
- Vertical Diversification - the company moves forward or backwards in stages of its production chain, in the production of its own raw material or in the distribution of products or services;
- Concentric diversification - uses the expertise, the productive potential and the technologies already installed to produce new products or services, and;
- Heterogeneous Diversification - which not related to existing products and services, nor to customers and the market.

Among these four forms of diversification defined by Ansoff (1971), horizontal diversification is the one that most closely resembles the concept of Penrose (1959) for diversification addressed in this research.

Penrose (1959) defines diversification whenever the firm, without completely leaving its old product line, starts to manufacture new products, or intermediate products, but which are substantially different from the products it already produced, affecting a significant difference in the processes productive and distribution areas.

Freire (2019) and Kretzer (2015) point out that success in diversifying related to the creation or exploitation of inefficient markets. For Smith & Coy (2018), the decision to diversify is one of the most difficult decisions faced by companies. Porter (1996) also argues that before diversifying it is essential that the company identify its competitive advantages. This is due to the risky nature of this strategy.

According to Ansoff (1971), the horizontal diversification strategy differs from the others by the internal maneuvers of the economic environment of the company that it diversifies. Normally, there is no flexibility and no contribution to increase the company's stability.

The strong point found in this type of diversification is the synergy that exists between the other sectors, mainly in Marketing, since the company continues to sell through the channels already established.

For Ramanujam & Varadarajan (1989), the organization can enter new markets through acquisitions, alliances or mergers, or even the combination of these strategies. However, the union of two or more companies around a result can initially generate a culture shock that, when poorly managed, tends to fail (Freire, 2019).

Thus, for companies to find synergy, managers must understand cultural differences to maintain a positive organizational climate (Ramanujam & Varadarajan, 1989).

2.2 Motivators to Diversify

Freire (2019) points out those companies adopt diversification in order to maximize their financial return. Grzebieluckas *et al.* (2013) and Lembe (2018) believe that the diversification strategy is influenced by low growth and limited performance.

Vallandro (2016), who shows evidence that companies are motivated to diversify to enhance their growth, corroborates this statement.

Historically, companies choose to diversify to avoid market restrictions, or, because they have advantages, such as human resources, equipment, technical skills, among others (Saracco *et al.*, 2015; Dal *et al.*, 2017; Freire, 2019).

According to Penrose (1979), diversification generally used as a solution to alleviate the unfavorable conditions of demand. For Smith and Coy (2018), the demand for some products is unstable, with periods of inconsistent seasonality. In addition, the company may have impaired demand and retract severely due to successive and sometimes successful incursions by competitors (Silva *et al.*, 2017).

In this line of reasoning, Penrose (1995, p.180) argues that efficient and successful firms are diversified, while “specialized firms are vulnerable”. For the author, companies that are specialized are constantly threatened, first by competition and second by rapid changes in the market.

On the other hand, over time, some organizations acquire skills and can expand their activities (Soltanizadeh *et al.*, 2016). For Mintzberg *et al.* (2000), such opportunities arise due to factors internal or external to the organization. In this sense, the organization can choose to apply or renew its competences, giving rise to new processes capable of serving different markets.

Some established companies, in search of growth, take advantage of market failures to insert new products or services (Martins, 2011). This category of strategy was mentioned by Rumelt (1982), describing this category of diversification as distinctive competencies that can be used by the company to exploit market failures.

According to Rumelt (1982), this diversification strategy produces and sells to markets that do not interact with those other products of the company. In this case, according to the author, the absence of interaction between the markets forces the strategy to prioritize the economy of productive factors and organizational efficiency, as it is observed in this strategy the low sharing of resources and other forms of productive use that are common (Rumelt, 1982).

However, Lembe (2018) warns that, generally, the information is not truly reliable in order to allow a conclusive measurement between diversification and expansion, with generally more information about expansion than diversification.

Grzebieluckas *et al.* (2013) highlight three potential benefits from horizontal diversification and its consequences for increasing competitive advantage: increase and optimization of other productive sectors, with greater synergy in the use of resources; greater opportunity to establish contact and alignment with companies from other markets, and, as a consequence, obtain confidence with a view to reducing the effects of market forces and; the possibility of obtaining the benefits of structured markets, with the interaction and relationships between niche markets within the same industry.

Ramanujam & Varadarajan (1989) state that technology is part of a set of resources that form the basis for formulating the strategy to diversify. Freire (2019) and Martins (2011) suggest that managers check if the resources will make the diversification process viable, bringing the expected return, and if in fact the results are interesting for the organization.

Studies that relate the diversification strategy and competitive performance, for the most part, are analyzed from the perspective of resources (Martins, 2011). In this sense, diversification directly related to the degree of resources and capabilities, in which companies launch their products and services with a return on investment (Penrose, 1959; Teece, 1982).

3 Methodology

To capture in depth the object in question, this research presented as qualitative, as it is the most suitable way to study areas of knowledge still under construction (Flick, 2009).

The strategy used for this research was the study of multiple cases that, following the recommendations of Yin (2015), in addition to providing greater robustness to the research, enables the investigation of the same phenomenon in different environments.

Furthermore, we sought to triangulate the evidence raised in the different cases studied, through semi-structured interviews and observations, comparing them with the framework used in this study.

In this research, observations were made on the same day as the interviews. The elements that were the object of observation by the researcher refer to the printing processes that are used in the researched graphic companies.

3.1 Analysis and Sample Units

The choice of printers had a non-probabilistic character and were defined by the ease and/or availability of access to companies. The researched sample corresponds to four printers belonging to the Metropolitan Region of Campinas-SP.

The total number of printing companies in this region is close to 797 printing companies, this being the number released for 2015, according to the report of the Brazilian Association of the Printing Industry (Abigraf, 2016). Companies and managers preferred to keep their identities confidential. Thus, letters and numbers were used to identify them.

The companies will be represented in this work, therefore, as G1, G2, G3 and G4. Respondents will be introduced as directors or managers.

The analysis units, all located in the Metropolitan Region of Campinas-SP, declared to diversify their printing processes. Table 1 provides an overview of the sample studied.

Company	Interviewee	City	Foundation	Home Diversification	Employees	Occupied zone
G1	Manager	Indaiatuba-SP	1988	2018	14	600m2
G2	Director	Valinhos-SP	1996	2014	15	360m2
G3	Manager	Campinas- sp	1994	2012	18	600m2
G4	Director	Hortolândia-SP	1982	2014	9	300m2

Table 1: Composition of the studied sample

Source: Elaborated by the Author

The four interviews were conducted at their respective headquarters, from December 2019 to February 2020, supporting the work and helping in a deeper understanding of the reality of the graphic universe of the Metropolitan Region of Campinas (SP).

3.2 Data Analysis

The data obtained, through in-depth interviews, were analyzed using the content analysis technique of Bardin (2011).

For the treatment of the data, resources from the Atlas.ti 8.0 software were used, associated and oriented according to the thematic analysis of Bardin (2016), as recommended by Forte *et al.* (2017). The procedures for data treatment were pre-analysis, literal transcription of the interviews and subsequent interpretation.

It is worth mentioning that content analysis allows the use of several analysis strategies in its development (Bardin, 2016). Thus, the search for criteria of reliability and validity constitute a way to overcome the limitations, which are inherent to the content analysis itself.

4 Data Presentation and Analysis

To facilitate the understanding of the work, initially a brief presentation of the interviewees made, to later present the data collected from the four companies in the research sample. The intention is, therefore, to make a clear and detailed description to clarify how the diversification process of each printing company was.

4.1 Presentation of Data from Analysis Units

4.1.1 Company G1

The respondent of the company G1 was the administrative manager, responsible for the management of the company. The professional has worked in the company for 8 years in this same role, having worked as a manager in another printing company for 12 years and, therefore, able to answer the researcher's questions. According to the manager, the main printing process offset, but the company today uses digital laser and plotter processes.

The printer realized that during the time the demand for products printed by the offset printing process fell, and that the printer's customers were looking for other types of printing that the printer did not yet have. Hence the interest in diversifying, but it was a reactive strategy, it was because of the demand (Manager G1).

During the interview, the G1 company manager revealed that the main reason for diversification was to increase demand and improve sales. According to the interviewee, the G1 company was already studying this possibility and that, if it weren't for that - the formation of a group - sooner or later the company would have made that decision.

(...) making it clear that today we offer other categories of printing (digital and plotter) due to the merger we did just over a year ago with another company with experience in this segment. This merger gave rise to a group formed by two companies, the other and ours that has been working with the offset process for 22 years that has worked with the other processes (digital and plotter) for 6 years (Manager G1).

The interviewee said that the group, formed by the two companies, is still in the adaptation phase and that the knowledge still shared. G1 has well-distributed sectors. According to the professional, what

they did was to adapt the equipment coming from the other company, which are not many, in the company's plant. He said that in practice they removed some equipment that was obsolete to accommodate those that came with the other company.

Today the company offers offset, laser and plotter prints. According to the G1 company professional, there was no need for training since the company, which is now part of the group, has experienced workers and equipment, as well as knowledge and skills. For each process, the company uses a finishing category and, according to the interviewee, the processes rarely use the same finishing or pre-press equipment.

When asked what were the challenges encountered, the respondent said that there was a culture shock with the union of two companies.

The first point was the culture shock of the two companies. When we receive new employees, they realize that they were very young, that theoretically they have access to millions of other information very quickly. The second I believe it was in the system, because we have a management system that cannot be parameterized at that moment, the budgets that are entering, in short ... the digital and plotter. The third point, which I see as not the most serious, would be the time part, which we have not yet managed to adjust, or to reach an agreement. Because until then, the other company that is migrating to ours has another process, which also involves culture, in short. But this is not about engagement, it is not the lack of commitment, on the contrary. It is an important issue that we have to solve (Manager G1).

Regarding the results of diversification, the interviewee said that it is still too early to make a statement, since the group was formed just over a year ago. However, he adds that before the other processes were outsourced and today the company provides digital printing, laser and plotter services to other printers.

It is very difficult to point out a differential, but seeing it, I do believe that diversification will be a differential for graphics. I can't measure it now, but I see it as an advantage because the customer who wants offset he also has the option of the digital or plotter, in the same way the client who comes after the digital or plotter has the option of the offset, I will say that we open the fan. But like this, I can't see this to clearly point this out now (Manager G1).

4.1.2 Company G2

The G2 company was represented during the interview by the production manager, who has been in this role since 2016, but has worked at the company since its founding in 2009. The interviewee had no other professional experience in the printing industry, but proved to be knowledgeable about the company and of the graphic segment, with safe and objective answers when questioned.

When asked what the reasons for diversification were, the Manager of the company G2 said it was a necessity, as there was a demand for digital prints and they needed to adapt, since the option of partnerships with other companies for production did not meet the need.

(...) it arose from the identification of new products that our customers were developing. To serve them, we initially had to seek partnerships. Only later, when we had some problems with delivery times, did we rent our first digital press (Manager G2).

According to the manager of the company G2, the option to diversify was to meet demand and due to the need to maintain revenue.

Offset printing, alone is no longer enough, production has fallen a lot in recent years. When we started with printing, the digital system was still new, few printers ventured into this system, even because there was a lot of demand for offset printing. The digital system today is part of the evolution of the sector. Before, there used to be a kind of knowledge about how the digital printing market worked, we knew it differed, another process, anyway, but when we started producing here, we realized its potential. It is a process that you need to be constantly evolving, practically every day new equipment appears. I will say that today we are more technological (Manager G2).

When asked how the interest in diversifying arose, the respondent said that it arose from the identification of his customers' interest in new products. To serve them, the manager said that they initially sought partnerships. Only later, when they had some problems such as deadlines not met by the partners, did they acquire the first digital printer, but still uses partnerships for some jobs, as their printer does not support all types of paper.

According to the professional, its differentials are good quality and good after-sales service. The activities with the greatest changes, according to the respondent, were marketing and people management. Explains the Manager of the company G2:

The printer was rented because it was the best option for us, marketing because we started to advertise more on digital platforms, and people management because it was necessary to hire and relocate some people (Manager G2).

The manager of the company G2 said that it uses almost the same prepress and finishing equipment for offset printing and digital laser. As for the changes, the respondent said that there were few because the equipment takes up little physical space. The manager of the company G2 highlights some difficulties he had to insert new printing processes:

The biggest difficulty was certainly getting the machine. At the time, we did not have the financial capacity to invest, and these machines are very expensive, so we rented them. Another difficulty was finding labor. We tried to relocate some people, but then we had to find those who had experience. We also had a little difficulty to publicize it, so we started using digital platforms (Manager G2).

The company opted to diversify with the digital laser because of its financial capacity because, according to the respondent, in this process, large investments are not necessary.

4.1.3 Company G3

The interviewee was the managing partner, son of the founder of the company, who has followed the growth of the company alongside his father from a very young age, assuming in 2014 the position of commercial director. The interviewee declared to know the company and the sector, mainly the commercial area. When asked what motivated the company to diversify, the director replied that he thinks the future of the printing industry will be digital printing.

The interviewee said that the first digital equipment, purchased in 2012, did not meet his demand. Most of his digital printing jobs were outsourced.

When we started the digital system it was still new, few printers worked with it. Here at the press, until 2018 or so, our focus was offset. We went very slowly with digital, we were very cautious, several printers invested wrongly and lost money. We bought digital in 2012 to do small things, but it didn't answer, it was very problematic and the quality was not good. So much so that the

old digital printer was broken for a while and at that time, we outsourced the digital ones. The second one we only buy after a lot of research (Director G3).

The director of the company G3 said that the company now has two digital printers, purchased in 2017 and 2018 that meet its needs, but 80% of the revenue still comes from offset. When asked if he needed to change any, in the company, the respondent said that in the beginning they did not make many changes and used the same employees.

(...) the processes are quite different, so much so that when we bought the large printer, in 2017, we hired two more employees who already knew the machine and the production activities. We learned that it doesn't work to transfer a printer from offset to digital, they are quite different. Today there are 4 employees exclusively for digital (Director G3).

The company G3 said that it shares very little the other sectors of the company between offset and digital processes. In digital, the four employees work in printing, prepress and finishing. Unlike offset where each employee has a role. Sometimes the digital uses the same guillotine, perforator or drill, but the digital has different tools.

Asked what types of knowledge the diversification brought, the director of the company G3 said that diversification brought more knowledge to the market. He added that for a while they realized that printers are going through an evolutionary process and are trying to keep up with that process. According to the interviewee, most of its competitors use the same equipment as the company G3. Its differential is the commitment it has to its customers and, thanks to this, they manage to keep their customers.

As for the market served, the interviewee said that they usually offer for the same market. In digital, they do some work for individuals, and that this was more rare, but it is usually the same market. He added that it improved the company's revenue.

(...) the digital margin is much greater than the offset. Although the vast majority of printed matter still offset, digital has been increasing. I think the future is digital, we don't have high expectations in the offset process (Director G3).

Regarding the diversification strategy, if the director considers it to be a competitive differential, the respondent replied that he does not consider it so. He said that almost all small, and even medium-sized printers already use this strategy, and concluded by saying: "whoever does not diversify will be left behind". As for the benefits of diversification, the respondent said that with diversification he can continue to provide graphic services.

4.1.4 Company G4

The interviewee is one of the directors who has worked at the company for 12 years. His main activity in the company is budgeting, but the interviewee-demonstrated knowledge of the researched subject when asked by the researcher about pertinent questions of this research.

The director of the company G4 said that the path to the development of new products, initially, happened through partnerships to generate a demand that justified the purchase of the equipment. The expected demand, according to the respondent, gradually increased and took about six months. After this period, the company hired an employee. Regarding the difficulties, the respondent said:

(...) I think it was acquiring knowledge of new materials that we hadn't worked on before, leaving the comfort zone as they say, right? It was also not easy to find someone good to work (Director G4)

The respondent said that even after purchasing the first digital press, he continued to use partnerships to print some digital prints. Only in 2016, after purchasing the second digital press and a plotter, did they become self-sufficient in the printing system. According to the director, the company currently provides printing services to other printers.

(...) we already did some digital work with our partners. At the time there was a lot of work for offset, when something digital appeared, we outsourced it. Only then did it start to increase and we saw that it was time to buy a digital one. The printing market is already decreasing quantities; there are no orders for 100,000, 200,000 pamphlets anymore, so it was necessary for the printing company to adapt to serve our customers (Director G4).

The director said that the company's differentials are quality, knowledge and after-sales. Regarding some difficulty in diversifying, the respondent argued that they were resolved by hiring an experienced employee. The interviewee also said that the changes in the company were minimal, since the space that the printers use had been empty for some time.

(...) different from offset, these equipment's need little space. Here the two prints and the plotter are in a 24 square meter room. We used this room to store scraps of paper and other things. It was just to prepare it with electrical installation and put air conditioning (Director G4).

According to the interviewee, the great return that the company had was the replacement of the offset process demand for digital systems:

Today digital is essential, both for customer maintenance and to get others. Digital printing and other materials with the plotter (Director G4) supplied the offset decrease.

4.2 Analysis of Results

In this section, the strategies used by the four companies studied are analyzed in order to find similarities and/or differences in aspects related to the horizontal diversification strategy in the printing processes.

In this way, a comparative analysis was carried out in order to demonstrate the main reasons and difficulties in the use of the diversification strategy reported by the managers in the interviews.

To this end, the transcribed interviews were inserted into the qualitative data analysis software (Atlas.ti 8.0), and from the analysis of the entire data set obtained, it was subjected to thematic coding to identify key themes and constructs (Forte *et al.*, 2017).

The possibility of coding was kept open to the possibility of the emergence of new themes.

Thus, from the joint analysis of the codes previously created, with the codes that emerged from the data analysis and with the network created between the codes, the themes to be explored in this inter-case analysis were identified:

- Motivators and difficulties to diversify;
- Diversification and types of services / products, and;
- Effects of the diversification strategy.

With the data organized in these themes, a critical analysis of the strategy of diversification of the printing processes of the surveyed companies was elaborated.

4.2.1 Motivators and difficulties to diversify

According to what is presented in the theoretical framework, diversification can be used for different purposes, such as: a solution to alleviate the unfavorable conditions of demand (Penrose, 1979); acquire skills and expand their activities (Soltanizadeh *et al.*, 2016); potentiate growth (Freire, 2019); by internal and / or external forces (Porter, 1996); market opportunities (Ansoff, 1971); increase the financial return (Vallandro, 2016); because of the competition (Silva *et al.*, 2017); achieve better performance (Grzebieluckas *et al.*, 2013) and; increase demand (Smith & Coy, 2018).

In the interviews, much was said about the reasons and difficulties of the printing industry to diversify the printing process. The manager of the company G2 said that the company needed to diversify the printing process to keep the revenue that fell month by month with the offset process "(...) offset printing alone is no longer enough, production has fallen a lot in the last few years old".

Likewise, and with the justification of the drop in production, the manager of the company G1 reported that the printing company diversified the printing process because they realized that their customers demand other types of printing.

The analysis of the responses indicates that there are strategic, marketing and financial motivations in the companies surveyed, on how to expand their operations in the market, meet the demand of their customers and increase their sales.

The director of the company G4 touched on this point, as it is in the transcript of part of his interview: "it was increasingly difficult to depend only on offset services. The costs of offset services are high". The director of the company G3 declared that 80% of its revenue still comes from offset, and the other companies also declared that they have in this process their main source of revenue.

Financial motivation could be seen in the four companies. Although each has diversified at different times, all seek the possibility of increasing revenue, which is in line with the precepts of the literature (Penrose, 1959; Teece, 1982; Grzebieluckas *et al.*, 2013; Vallandro, 2016; Lembe, 2018).

Regarding the difficulties in the diversification process, two leaders indicated that they did not find specialized workers, G2 and G4, from Valinhos-SP and Hortolândia-SP, respectively.

The company G1, from the city of Indaiatuba-SP, did not declare this difficulty because, according to the interviewee, the union was made with another company that already worked with the new processes.

The main difficulties, according to the manager of the company G2, were the purchase of equipment and getting workers to operate. The company G4 also reported these same challenges.

In this sense, the interviews reinforce the difficulties that the graphic sector faces with the drop in the demand for printed materials that use the offset process reported by Costa (2018).

The difficulties pointed out by the G1 manager related to organizational management were discussed in the works of Freire (2019), Ramanujam & Varadarajan (1989). For these authors, company managers must clearly understand cultural differences so that they can work together towards the same objective.

The director of the company G4 also said that he did not find it difficult to buy the equipment, nor to find collaborators with experience, contradicting the report of the company G2. Likewise, the company G3 also said it did not find it difficult to find workers.

The procedures and difficulties of the printing industry in diversifying, identified in the interviews, are summarized in Table 2.

		Motivating	Difficulties
Company G1	Indaiatuba-SP	Meet demand and increase revenue	Organizational management
Company G2	Valinhos-SP	Expanding the market and maintaining revenue	Financial capacity; find workers

Company G3	Campinas-SP	Expanding the market and increasing the profit margin	Lack of demand
Company G4	Hortolândia-SP	Expanding the market and meeting demand	Financial capacity; find workers; knowledge of new materials

Table 2: Motivators and difficulties of the companies surveyed**Source:** Research data

4.2.2 Diversification and categories of services / products

According to Penrose (1959), it is natural for companies to be classified as mono producing or multi-producing, or else, diversified or not diversified. In this sense, the author argues that the meaning of these terms depends on the definition given to the reference product.

Thus, a firm that produces only shoes can be defined as not diversified, while, for other purposes, a firm that produces only shoes, but of various types, can be considered diversified.

Due to this ambiguity and the impossibility of class comparisons, it is not possible to accurately assess the meaning of comparative diversification between different companies, and, in this sense, the following comparative analysis does not refer to identifying whether one company is more diverse than another is. This understanding is based on the statement by Penrose (1959).

Table 3 consolidates the diversification category and the activities of the companies surveyed.

	Diversification	Services / Products Offered
Company G1	Analog Offset, Digital Laser, Digital Plotter	* Printed with offset process on paper between 65 and 350 g., Formats between 16 and 02 * laser printed on paper and polyester from 70 to 400 g., Between formats A8 to A2 * printed plotter on vinyls, stickers, canvas, papers, PVC and other materials, with a maximum width of 1.80 meters.
Company G2	Analog Offset, Digital Laser	* Printed with offset process on paper between 70 and 400 grs., With formats between 08 and 02 - laser printed on paper and polyester from 75 to 300 grs., Between A4 to A3 formats.
Company G3	Analog Offset, Digital Laser	* Printed with offset process on paper between 70 and 350 grs., With formats between 08 and 01 - laser printed on paper and polyester from 70 to 400 grs., Between formats A8 to A2.
Company G4	Analog Offset, Digital Laser, Digital Plotter	* Printed with offset process on paper between 70 and 450 g., Formats between 08 and 02 * laser printed on paper and polyester from 70 to 400 g., Between formats A8 to A2 * printed plotter on vinyls, stickers, canvas, papers, PVC and other materials, with a maximum width of 2.30 meters.

Table 3: Diversification and Types of Services / Products**Source:** Research data.

4.2.3 Impacts of the horizontal diversification strategy

According to the data collected, horizontal diversification in printing companies in the Metropolitan Region of Campinas brought positive results for the surveyed printing companies. In this sense, Freire

(2019) pointed out that the success in diversifying can be related, to a large extent, with the exploration of expanding markets.

All respondents said they were satisfied with the results obtained with the diversification strategy. As the testimony of the company G3 demonstrates: "The digital margin is much greater than the offset. Despite the fact that most of the printed materials are still offset, the digital has been increasing. The statement by the director of the company G2 was illuminating, especially when he says that the strategy "gave us more knowledge of the market".

However, despite declarations of improvement in results, both productive and economic, no manager considered diversification as a competitive advantage.

It should be noted that all statements were timid in this regard, as all professionals said that the processes can be easily copied. The competitive differential statements, combined with the diversification strategy, were focused on the individual qualities of each company, as shown in table 4.

	Competitive Differential
Company G1	Quality, location and service
Company G2	Fair cost benefit, quality and after sales service
Company G3	Commitment to customers and quality
Company G4	Lean graphics, quality and good service

Table 4: Competitive Differential of the Researched Companies

Source: Research data

It is noted that all the statements of competitive differential were timid, all professionals said that the processes can be easily copied. The competitive differential statements were focused on the individual qualities of each company.

An important point mentioned by the interviewees is that digital processes still have little offer, even with studies showing that most graphic companies diversify (Kretzer, 2015; Vieira & Araújo 2015). Another important point that can be concluded in this research is that four of the four companies provide digital printing services to other printers, which justifies the result of the aforementioned research.

Another equally important revelation is that three of the four companies have started to diversify using the digital laser process. The exception is the company G1, which started diversification with two processes already due to the merger with another company. This demonstrates that the laser printing process has a coherent relationship with the offset printing activities.

It is concluded, therefore, that horizontal diversification brought positive results in the companies surveyed, and may indicate a trend for companies in this sector, which would need to be better studied.

5 Final Considerations

This research aimed to identify how the horizontal diversification of printing processes used in printing companies in the Metropolitan Region of Campinas-SP.

The study found that the surveyed printers compete for the same consumer market, and that the diversification strategies used are similar. Despite declarations of improvement in results, both productive and economic, no manager considered diversification as a competitive differential.

The diversification of printing processes was not considered as a competitive differential, but was considered by companies as essential in order to meet demand, corroborating the studies of Coy (2018), Freire (2019), Caspary (2016), Kretzer (2015) and Vieira & Araújo (2015).

The research also demonstrated that the diversification processes, observed in the studied companies, present specific and individual differences, with strategic, market and financial motivations, but do not present substantial differences when confronted with the theoretical framework, as they all seek the possibility of increasing revenue and expand its area of operation through the horizontal diversification strategy.

It is interesting to note that the interviewees stated that the new types of printing still have little supply and greater demand than the offset process. Thus, it concluded in this research that many companies diversify their printing processes by outsourcing. Thus, it can be said that most printing companies diversify their products and services, but not all of them diversify their printing processes.

It is also understood that companies are still dependent on the base product for maintaining the activity, but recognize that in new products and services the profit margins are higher. In addition, there are clearly two important aspects mentioned in the literature: learning and relationships between members of the organization (Mintzberg *et al.*, 2000; Vallandro, 2016).

In relation to the difficulties arising from the diversification process, the data collected in the companies coincide with the theoretical framework. The main challenges reported were lack of financial resources, little knowledge about new products, processes and difficulty in finding qualified labor, similarly to the reference presented (Penrose, 1979; Mintzberg *et al.*, 2000; Vallandro, 2016; Silva *et al.*, 2017; Smith & Coy, 2018).

These results are considered to be relevant, in addition to academia, for graphic organizations in general. The idea is that, based on the results presented, companies that diversify or intend to diversify their printing processes can understand which elements can bring better results and also what are the main barriers or difficulties that can limit the application of this strategy, since such elements can directly influence the results.

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