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GROWTH OF THE OPERATION OF AN INFORMATION TECHNOLOGY SERVICES COMPANY: PATHWAYS AND TROUBLES IN ITS IMPLEMENTATION

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Abstract

Study objective: In view of the decision to adopt a growth strategy for a multinational Information Technology services company in Brazil, the objective of this study is to demonstrate how it was planned and implemented the expansion of its operation, considering the context and characteristics of the industry in Brazil.
Method: This study is a technological article with a qualitative, descriptive, and analytical approach, applying a single case study. For data collection, documentary research associated with participant observation was used.
Originality/Relevance: The company is a multinational organization that aimed to define the objectives for its growth in Brazilian territory and subsequently had to choose the best strategy and implementation alternatives in national context, outlining stages over a period of time. The reported case shows the implementation of a service hub structure.
Main Results: Based on the decision for organic growth, it was identified factors related to the external environment that were relevant in decision-making regarding the location of a new company unit such as the city's infrastructure and job market. The process of analyzing and defining the growth strategy preceded the pandemic and was subsequently adjusted due to its effects and other factors.
Theoretical/methodological contributions: This study contributes to the identification of factors, particularities of the industry and the dynamics of IT companies in Brazilian context and how they require perspectives and research approaches that consider different variables that drive change and growth, their capacity and speed of adaptation, including big companies.

Keywords: Strategy. Growth. Information Technology. Case Study.

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CAMINHOS E PERCALÇOS NA IMPLEMENTAÇÃO DAS ESTRATÉGIAS DE CRESCIMENTO DA OPERAÇÃO DE UMA EMPRESA DO SETOR DE TECNOLOGIA DE INFORMAÇÃO: UM ESTUDO DE CASO

Resumo

Objetivo do estudo: Diante da decisão pela estratégia de crescimento de uma empresa multinacional de serviços de Tecnologia de Informação no Brasil, o objetivo é demonstrar como foi o planejamento e a implementação do aumento da sua operação, levando-se em conta o contexto e as características do setor no país.
Método: Com o formato de artigo tecnológico, a pesquisa é de abordagem qualitativa, descritiva e analítica, com aplicação de estudo de caso único. Para a coleta de dados foi utilizada a pesquisa documental associada à observação participante.
Originalidade/Relevância: A empresa é uma organização multinacional que precisou definir os objetivos para o seu crescimento em território brasileiro para, em seguida, escolher qual a melhor estratégia e forma de implementação do crescimento de sua operação, delineando etapas ao longo do tempo. Com isso, o caso relatado mostra a implementação de uma estrutura de hub de serviços.
Principais Resultados: A partir da decisão pela estratégia de crescimento orgânico, foram identificados os fatores relacionados ao ambiente externo relevantes na tomada de decisão quanto à localização de nova unidade da empresa, como infraestrutura da cidade e mercado de trabalho. O processo de análise e definição da estratégia de crescimento antecedeu à pandemia e foi, posteriormente, sendo ajustado por causa dela e de outros fatores.
Contribuições teóricas/metodológicas: Este estudo contribui com a identificação de fatores impulsionadores e limitantes, particularidades do setor e da dinâmica de empresas de TI no contexto brasileiro e como requerem perspectivas e abordagens de pesquisa que contemplem diferentes variáveis impulsionadoras de mudanças e de crescimento, sua capacidade e velocidade de adaptação, incluindo as empresas de grande porte.

Palavras-Chaves: Estratégia. Crescimento. Tecnologia da Informação. Estudo de Caso.

CRECIMIENTO DE LA OPERACIÓN DE UNA EMPRESA DE SERVICIOS DE TECNOLOGÍA DE LA INFORMACIÓN: VÍAS Y DIFICULTADES EN SU IMPLEMENTACIÓN

Resumen
Objetivo: Ante la decisión estratégica de crecimiento de una empresa multinacional de servicios de Tecnologías de la Información, el objetivo es demostrar cómo se realizó la planificación e implementación del crecimiento de su operación, tomando en cuenta el contexto y características del sector de actividad en Brasil.
Método: Con el formato de artículo tecnológico, esta investigación tiene un enfoque cualitativo, descriptivo y analítico, aplicando un estudio de caso único. Para la recolección de datos se utilizó investigación documental asociada a la observación participante.
Originalidad/Relevancia: La empresa es una organización multinacional que necesitaba definir los objetivos de su crecimiento en territorio brasileño y luego elegir la mejor estrategia y forma de implementación, delineando etapas en el tiempo. El caso reportado muestra la implementación de una estructura de centro de servicios.
Principales Resultados: A partir de la decisión de crecimiento orgánico, se identificaron factores relacionados con el entorno externo que fueron relevantes en la toma de decisiones sobre la ubicación de una nueva unidad de la empresa, como la infraestructura de la ciudad y el mercado laboral. El proceso de análisis y definición de la estrategia de crecimiento fue previo a la pandemia y posteriormente fue ajustado por ella y otros factores.
Contribuciones teórico/metodológicas: Contribuye a la identificación de factores, las particularidades del sector de actividad y la dinámica de las empresas de TI en el contexto brasileño y cómo requieren perspectivas y enfoques de investigación que consideren diferentes variables que impulsan el cambio y el crecimiento, su capacidad y velocidad de adaptación, incluyendo las grandes empresas.

Palabras clave: Estrategia. Crecimiento. Tecnología de la información. Estudio de Caso.

Introduction

The Information Technology (IT) sector has been growing rapidly since the turn of the twenty-first century, even during the COVID-19 pandemic (Connell & Lemyze, 2021). IT companies have played a leading role in digital transformation across different market sectors, and their growth is a challenge for business managers, as it is constant, fast and global, and their main input consists of professionals (Connell & Lemyze, 2021; Biryukov et al., 2022). According to a study conducted by the Brazilian Association of Software Companies – ABES (2022), global IT production grew by 11%, with growth of 17.4% in Brazil during 2021, with an investment of US$ 46.2 billion dollars worldwide among the markets of software, services, hardware and exports in the segment. According to this report, Brazil occupies 10th place in the global IT ranking.

Given the importance and dynamism of the IT sector for world economies, specifically the Brazilian economy, as well as the opportunities for generating new business and meeting the demands of companies in other sectors (Connel & Lemyze, 2021; Abes, 2022), it is relevant to analyze the growth alternatives for companies in this sector. In addition, they are often the first to confront changes in their business models and strategies, serving as an example for other branches of business and their sectors of activity (Biryukov et al., 2022). It should be noted that it is not always easy to analyze the dynamics of a company's growth, but it is more common to observe its antecedent and consequent aspects (Machado, 2016).

Growth can take place organically, by increasing production and service provision capacity (Hess, 2007), using the strategy of cost leadership, differentiation or diversification (Hitt et al., 2019), done in an increasing way (Belderbos, Tong & Wu, 2019). Alternatively, inorganic growth can be achieved through company mergers (Calil et al., 2020), operating and financial synergies (Capron & Pistre, 2002), strategic alliances (Tower, Hewett & Saboo, 2021) and internationalization (Dunning, 1980; Porter, 1992; Kotler, Manrai, Lascu & Manrai, 2019, Luo, 2021). Despite the different individual or combined strategic alternatives for a company's growth, identifying the most effective options is an arduous task for many managers due to the information overload associated with the complex process of evaluating alternatives in the competitive environment (Bruni-Bossio, Sheehan & Willness, 2018).

Therefore, the following question arises: "How can we determine and implement the most appropriate growth strategies for an IT services company, given the specific characteristics of this sector in the Brazilian context?". In response to this research question, the aim of this technological article is to demonstrate how the growth of an IT company's

operations was planned and implemented, while considering the sector's context and characteristics in Brazil. The company is a multinational organization that had to define the objectives for its growth in Brazil and then decide on the best strategy and form of implementation, in structured stages over time.

This study intends to contribute to knowledge and discussion about growth strategies in the sector and their impact on operations of different companies, as well as on creation of competitive advantages, as in Bruni-Bossio et al. (2018), which can jeopardize the company's sustainability (Andriani, Samadhi, Siswanto, & Suryadi, 2019), if decisions or actions are not correct, wasting time and resources that may not be recoverable. Specifically, since IT companies are the first to face environmental and contextual changes, they end up finding individual solutions intuitively or accidentally, which can help companies in this sector and others to learn to deal with an uncertain environment and management difficulties (Biryukov et al., 2022). Furthermore, it is an opportunity to demonstrate the dynamics of a company's growth, which has been difficult to do in studies involving this subject (Machado, 2016).

Theoretical Reference

Motivations and Challenges for Company Growth

There are different models for analyzing the internal and external environment, and that can help to visualize growth opportunities for a company. These models describe the different factors that influence the analysis, the motivations that drive companies to pursue growth and the inherent challenges (Bruni-Bossio et al., 2018, Belderbos et al., 2019) depending on their business process and life cycle stages (Andriani et al., 2019). Being able to evaluate strategic options requires effort and knowledge to find the best information and establish appropriate selection criteria for the organizational reality and the competitive environment (Bruni-Bossio et al., 2018).

Some factors linked to a company's growth strategy are financial, while others can be related to market dynamics. Linked to the financial perspective is the search for better **profitability**, understood by Iyer and Miller (2008) as strategic changes to boost results that can come from internal actions or mergers and acquisitions. According to Belderbos et al. (2019), analyzing current investment options can generate future opportunities for growth and a higher return on investment.

The search for **increased revenue** can be one of the main motivators in the quest for growth, and achieving this using an organic growth strategy, for example, is a major challenge

in mature markets, and many organizations rely on international expansion for this (Hitt et al., 2019). Growth can derive from expanding the domestic market or from new markets that are more promising or less competitive (Kotler et al., 2019).

Risk management is another factor that can stimulate or limit growth. According to Gitman (2017), it is the way to administrate the possibility of financial loss or uncertainty given the variability of returns associated with assets. The possibility of bankruptcy can be seen as a risk (Iyer & Miller, 2008) and therefore a limiting factor for growth actions. For Durst, Hinteregger and Zieba (2019), knowledge is essential for risk management and contributes to a systematic approach to controlling risk, which positively affects a company's growth.

Financial slack is also an important variable, because when a company has it, they are likely to take more risks, such as investments in acquisitions, for example. According to Myers (1984), it generates organizational slack and can be characterized by liquidity when converting assets into monetary resources and reserve borrowing capacity, referring to the ability to issue debt if necessary in the long term, while maintaining current leverage at a level where it is considered possible to increase debt without significantly increasing risk. On the other hand, sudden environmental changes can lead to the accumulation of strategic resources that may become obsolete in a new configuration of the environment, leading the company to reassess its current level of financial slack and resources as a whole (Godoy-Bejarano, Ruiz-Pava & Téllez-Falla, 2020).

As for market-related factors, it is worth noting that a **greater market power** can be obtained when products or services are sold beyond the competition's levels or when the costs of activities are lower than those of competitors. Through organic growth or via acquisitions, it is possible to achieve competitive advantage in the main market of the acquiring company, aiming for its leadership (Hitt et al., 2019; Kotler et al., 2019).

The **size of a company** also influences the decision on growth strategies. As a result of diversification, the larger the company, the greater the probability of common attributes between transaction activities and, as a result, greater possibilities for integrating activities and optimizing resources (Hitt et al., 2019). This aspect is related to the life cycle of the company as well as its business model and processes, which affect choices regarding the paths to follow for its growth (Andriani et al., 2019, Biryukov et al., 2022).

Another factor is the **search for competitive advantage**, which can be achieved through the efficient and effective use of internal resources (machinery, equipment, personnel, among others) and competences (the capacity and ability to make the most of these resources) (Bruni-Bossio et al., 2018; Andriani et al., 2019). For Porter (1992), the company must be analyzed

based on its primary activities (internal logistics, operations, external logistics, marketing & sales and services), secondary activities (acquisition, technology development, human resources management and infrastructure) and the relationship with the result in order to seek competitive advantage. To be more competitive, companies also need to focus on other aspects, such as ensuring a solid corporate strategy that supports their growth, their market positioning and the changes to their structure that are needed to adapt to the dynamism of their environment (Pogodina, Muzhzhavleva & Udaltsova, 2020).

Business Growth Strategies

Companies' growth is a well-established topic with many contributions, but it is still subject to debate. Since Edith Penrose's studies in the 1950s, different studies have been developed from various perspectives, involving aspects such as growth indicators, drivers and limiting factors, and explanatory models. However, there is room to explore how managers and decision-makers in companies define their choices about business growth alternatives, and there is a need to differentiate the reality of large, established companies from small companies and start-ups (Machado, 2016). In addition, high-impact and discontinuous changes, such as the COVID-19 pandemic, require strategic responses to deal with both short-term discontinuities and long-term changes within a competitive environment that was already undergoing technological, socio-political and institutional transformations (Hitt, Arregle & Holmes, 2021).

Studies on strategy present robust and established knowledge on business growth strategies. For Sarfati & Shwartzbaum (2013), growth can be achieved in two ways: by **organic growth** (internal company growth) or **inorganic growth** (through merger and/or acquisition initiatives). In the inorganic growth strategy, the factors to be considered are: the search for market power, operating and financial synergies, taking advantage of tax benefits, seeking competitive advantage, and so on (Capron & Pistre, 2002; Sarfati & Shwartzbaum, 2013). On the other hand, studies dealing with organic growth refer to the strategic position and improvement of financial performance, such as increasing profitability and revenue. And in order to analyze which strategies are best, the variables of the external environment must be observed to decide what best fits the characteristics of the organization (Hitt et al., 2019).

Organic growth is understood by Hess (2007) as a long-term strategy, as this growth uses dynamism and vitality of the business to obtain either internal company resources or financed resources through third-party capital to make commitments to customer satisfaction, employee engagement and profitability indicators. It is also a very useful incremental strategy

in times of uncertainty and tough competition (Belderbos et al., 2019). It relies on the knowledge and experience of managers and entrepreneurs to keep finding ways to explore their current market and also new ones (Machado, 2016).

In the context of organic growth, one can explore strategies of cost leadership, differentiation or even both combined, as explained by Hitt et al. (2019). By lowering costs in primary and support activities in a company's production chain through strategic planning focused on **cost leadership**, it can increase its resources, which could become a leverage for investment in product improvements and innovation, resulting in competitive advantage (Porter, 1992).

Another strategy proposed by Porter (1992) is **differentiation**, which is when the company invests in the creation of characteristics that will distinguish a good or service, with the aim of customers perceiving this as value. Some examples of the application of the differentiation strategy are technology development processes, with the development of solid capabilities in basic research and investments that will enable differentiated production, or in human resource management with incentive programs for creativity, productivity and training (Hitt et al., 2019).

In addition to being vital for the survival and sustainability of businesses, **diversification** is used as a tool in the organization's quest for performance (Castaldi & Giarratana, 2018). According to Su & Tsang (2013), the goal of this strategy is to change and adjust business definitions by developing new products or expanding into other markets. It helps to improve debt capacity, the deployment of new assets, and consequently allows the organization to use its skills, knowledge and competencies to produce unique products. When diversification is carried out through acquisitions of other companies, it can be considered an inorganic growth strategy.

Inorganic growth is characterized by increasing business through concentration operations such as mergers, acquisitions, alliances, joint ventures or other types of alliance. It is characterized as a rapid strategy, in contrast to the organic growth strategy, since companies that opt for inorganic growth reach dimensions that would take much longer if they grew organically (Hess, 2007).

Mergers are the result of integrating the operations of two or more companies, forming a new company (Calil et al., 2020). Hitt et al. (2019) state that one of the characteristics of the companies involved in mergers is that they are of a similar size and the model for combining these companies of similar characteristics can occur through a simple exchange of shares, giving rise to another company.

Acquisitions, on the other hand, are defined as a business strategy focused on growth, in which one company buys another to increase its portfolio and market share or to enter international markets (Calil et al., 2020). Porter (1992) argues that the acquisition process is a means to promote the entry of new businesses without fostering internal development for this purpose.

There are **cooperation** strategies that can be the result of two or more companies working together to achieve a common goal. The main cooperation strategy is strategic alliances, which can be used both to create value for customers and to appropriate value for companies. Strategic alliances can be used both to create value for customers and for companies to appropriate value by developing innovative products and services, as well as new competences that will accelerate entry into new markets or facilitate penetration into markets where they already operate (Tower, Hewett & Saboo, 2021).

Internationalization is a growth strategy that can be related to several motivations (Machado, 2016), such as the search for new markets (Dunning, 1980, Kotler et al., 2019), production advantages, knowledge, marketing, reducing labor costs, reducing exposure to suppliers or markets (Dunning, 1980; Luo, 2021). This strategy also encourage internationalization, exploring market factors and opportunities such as lower risks or greater possibility of investment gains and access to diversified markets (Belderbos et al., 2019).

Finally, Hitt et al. (2019) explain that strategies can be merged to create a growth strategy, using an integrated approach of cost leadership and differentiation. In other words, it is a combination. This type of strategy combines the search for lower costs with the company's ability to carry out activities in a different way than its competitors, seeking efficiency and differentiation to serve a specific group of customers.

Growth Strategies and IT Companies

In the pre-pandemic scenario and also during the COVID-19 outbreak, companies in the Information Technology sector saw accelerated and uncoordinated growth opportunities. Many of them were unable to structure themselves to respond to the strong demand in their markets, which varied depending on the specificity of each segment or the knowledge and experience (or lack of it) of their managers regarding the different ways to take advantage of opportunities to leverage the company's growth (Biryukov et al., 2022). It is true that the educational level and experience of managers and entrepreneurs influence the growth of companies, as well as

experience in the sector and previous experience in other organizations, in addition to the size and age of companies (Machado, 2016).

For Biryukov et al. (2022), the most modern IT companies differ in size, level of organizational development and maturity of their processes, making it difficult to choose a single, uniform management model. According to Davidsson et al. (2010), growth for IT companies can encompass diversification, product-market combination, entry into a new market (national or international) or even vertical growth, characterized by acquisition/merger for integration into the value chain. As for the dynamics of growth, one must consider the value placed on the availability of people's knowledge and experience (Machado, 2016; Connell & Lemyze, 2021) and the possibility of rapid changes in the sector which lead to variations and adjustments in their strategies and business models.

Among the factors that can influence the growth process are those at individual, company and environmental level. At individual level, the educational qualifications as well as the experience of entrepreneurs in the sector in which they operate provide them with greater knowledge of the market, resulting in higher chances of growth (Dobbs & Hamilton, 2007; Rauch & Rijskjik, 2013, Machado, 2016). Psychological factors such as motivation and growth aspirations on the part of entrepreneurs and professionals also have positive effects on company growth (Davidsson et al., 2010). In addition to human resources policies aimed at training and monetary incentives (Dobbs & Hamilton, 2007; Rauch & Rijskijk, 2013).

At company level, important growth strategies include production strategies aimed at improving, developing and innovating products (Davidsson et al., 2010; Dobbs & Hamilton, 2007; Löfsten, 2016). Market strategies, such as taking advantage of niches, segmentation and diversification, as well as strategies aimed at distribution and product positioning in the market driven by increased marketing activities also contribute to growth (Davidsson et al., 2010; Lasch et al., 2007).

Encouraging to acquire knowledge, learning skills and technology analysis, according to Löfsten (2016) and Connell & Lemyze (2021) are very relevant elements for the growth of technology companies. In this manner, to rely on specialists and consultants, as well as to use resulting capacities from the learning process can add up to this purpose (Davidsson et al., 2010), considering the different stages of growth and life cycle of companies (Machado, 2016; Andriani *et al*., 2019).

As for the influences of external environment variables, we can highlight the positive effect of industrial agglomeration (Brito, Brito; Porto & Szilagyi, 2010), market supply and demand conditions on growth (Coad & Tamvada, 2012; Kotler et al., 2019) and uncertainty

combined with high competition, entry barriers and sector dynamism (Davidsson et al., 2010; Belderbos et al., 2019; Biryukov et al., 2022). The availability of qualified professionals and raw materials are key variables to be observed in the strategy (Coad & Tamvada, 2012; Lasch et al., 2007).

It is understood that the external environment in which the IT market is formed both influences and operates as a background context where companies acquire and/or develop their resources and capabilities in different trajectories over time. There are different external and internal factors that can both drive and limit a company's growth, which is why it is important to analyze the scenario and its factors in an integrated way (Bruni-Bossio et al., 2018). Also, some specific issues in the IT sector should be noted, such as labor market, dependence that companies have on the availability and quality of their professionals, rapidity of changes in the scenario and the need to make decisions that accompany these changes (Connel & Lemyze, 2021; Abes, 2022).

Methodological Procedures

Research Design

This research has a qualitative, descriptive and analytical approach, using a case study in the form of a technological article. Biancolino et al. (2012) point out that the technological article goes beyond presenting a case to be studied in an organization, as it presents practical results of an intervention, with methodological rigour that follows a scientific basis, and is the product of applied research or technical production that describes experiences in organizations. Marcondes et al. (2017) differentiate studies with an academic approach from studies with a professional approach, with the former developing the understanding (description, explanation and prediction) of different phenomena, and the latter taking a problem-solving approach.

In this context, the case study was used as the technical procedure for examining and solving the prior research question raised, as it is a method capable of demonstrating and explaining a particular case in a given context, time and place (Gerringer, 2019). According to Yin (2015), a case study should be chosen when the main purpose is to explain the present circumstances with questions such as "how" and "why" the phenomenon occurs, with the boundaries between the phenomenon studied and its context not being so clear.

The justification for choosing a single case is due to the fact that it was a longitudinal case, with the possibility of decision-making and implementation at more than one moment over time (Yin, 2015). The company chosen is a European multinational with a presence in

more than a dozen countries and more than 20,000 employees worldwide. It is a consulting company that develops business, information technology and outsourcing solutions for different sectors, with a well-established structure based on a distributed operating model through so-called software factories.

Data collection

The data collection was based on documentary research and participant observation by one of the researchers in this study. The documentary research used unstructured documents such as decision-making meetings, brainstorm meetings and their records in minutes, emails, spreadsheets and presentations used during the preparation and implementation of the expansion plan for the Brazilian operation of the company studied. The following documents were obtained from the documentary research, as shown in Table 1:

Table 1

Collected documents

(Qty) Documents	Content	Moment	Date of creation
(12) minutes of meetings (.docx and emails)	Document with a list of subjects addressed at the meetings, as well as the deliberations, the reasons for the deliberations and those responsible for them.	Stages for analyzing and deciding on the type of growth strategy and locations for the new unit (Initial, Planning, Execution and Completion)	2019-2020
(18) Conceptual and results presentations (.pptx)	Material in presentation format used to conduct presentations, containing the conclusions of the analysis and main definitions made during the execution of the project. As well as consolidating data and results from the expansion project.	From the evolution of the Software Factories model to the project completion phase.	2019-2021
(2) Research data sheet	Data used for the initial analysis of the new unit sites.	Initial phase of sites for the new software factory unit.	2019

Source: Research data.

Participant observation was used alongside documentary research in order to complement the information and ensure greater methodological rigor in the presentation and analysis of the case study. Participant observation provides a detailed view of reality through the researcher's interaction with the environment (Minayo & Costa, 2018). Or, as Patton (2014) says, for a more complete understanding of the complexity of situations, direct participation and observation of the situation may be the best research method.

Participant observation took place from January 2019 to July 2021, with one of the researchers attending meetings with the different groups and strategic levels such as the Global, Regional and National levels of the company studied, as well as acting as a member of the multidisciplinary team created. During the period of participant observation, the researcher collaborated with the analysis and decisions made and with the preparation of some records and documents of the implementation and decision-making stages. He also made his own notes in the form of a field diary in which he recorded his perceptions of the activities and decisions taken.

Data Analysis

For the analysis stage, an electronic spreadsheet was used to organize the information in chronological order, examining it all together and highlighting the ones that were strategic for the decision-making moments, the ones that helped define the stages of implementation and the actions descriptions contained in these stages.

It was identified that the initial moment of decision took place at the end of the first half of 2019, as a result of gathering and organizing data on the options of growing organically or by acquiring another company. The meeting minutes from this period and the presentation containing the study of the advantages and disadvantages of organic growth or growth by acquisition were the materials used for description and analysis. Some notes from the participant observation on the topics discussed at the meetings helped to indicate the main reasons for choosing organic growth.

The minutes of the meetings, the spreadsheet with data about the cities and the selection criteria were used to describe and analyze actions of the four stages of work that were defined for the multidisciplinary team that was set up to study and define the criteria for choosing cities to set up the company's new unit. The notes from the participant observation complemented information on the development of the criteria for choosing cities and the data sources used by the multidisciplinary team.

Meeting minutes and presentations compiling information on the work of the multidisciplinary team were used to describe and analyze the decision on the location of the new software factory. Several meetings were held between January and February 2020 which resulted in the drawing up of a business plan for the new unit, as it was presented and approved after three meetings at different hierarchical levels of the company. The notes in the participant observation diary complemented and helped to confirm the most relevant points for decision-

making and, above all, the content and changes made to the business plan as a result of the COVID-19 pandemic.

Finally, minutes of meetings and presentations containing the results of some actions were used to describe and analyze the implementation and evaluation of the first results of the new software factory's business plan, which took place between March and December 2020 and in the first half of 2021.

Presentation and Discussion of Results

The decision to grow organically in Brazil was taken because it was perceived that the company had the knowledge and experience to do so and because the survey of possible companies to be bought did not point to any targets of operational or strategic interest. Once this decision had been made, it became necessary to analyze and define where the company should structure its second software factory unit in Brazil. This new unit would have to follow the changes in the company's production model, which aimed to reduce costs in the production of services and create a larger scale for organic growth through software factories in the interior of the country. These decisions and actions will be detailed and analyzed below.

The Organizational and Strategic Context and the Problem Situation

The company under analysis works with information technology services. Founded in Europe in the 1990s, it develops business solutions, information technology and outsourcing for the banking, insurance, telecommunications, industry and government sectors. After consolidating its presence in some European countries in its early years, the company began the process of international growth as a lever to increase its market share, exemplifying what Dunning (1980) and later Luo (2021) stated as one of the objectives of the internationalization strategy. And it did so in the form of organic growth, as Hess (2007) points out, which happens when a company takes advantage of the dynamism and vitality of its business by using its resources to create units and make new commitments to customers, utilizing its capabilities.

Faced with the need to review its operations in order to continue to grow and provide quality service to its clients, the decision was made to open new operating units, called software factories, in the interior of the countries where the company operates and no longer in capital cities and large urban centers. One of the reasons for the change was the **high and rising cost**

of offices in the large financial centers and capitals where it previously operated, as well as the difficulty of growing in scale in these capitals.

Another reason was to **increase the power of scale in order to make the company more agile**. When a new contract for a large volume of services was negotiated, the demand on professionals generally increased. This phenomenon is a challenge in service operations: synchronizing supply and demand, because the characteristics of perishability and the difficulty of managing fluctuating demand, over time, are numerous, making it difficult to adapt quickly to growth, as also pointed out by Biryukov et al. (2022).

The third reason for choosing this strategy was to obtain more specialization and, consequently, higher quality in the delivery of services to clients, one of the most important performance dimensions in service provision. Unlike the units that were on the front line with clients in the large centers, called consulting units, the professionals working in the software factories had to have more specific knowledge and experience in providing software development services. As one of the main actions to specialize and guarantee the quality of its services, the company adopted the CMMi (Capability Maturity Model) in all the software factories that were opened, including in Brazil, to standardize service operations with policies, processes, procedures and tools.

The fourth reason was the search for financial efficiency, described by Hitt et al. (2019) as integrated actions to produce services with characteristics acceptable to customers at the lowest possible cost compared to competitors, in order to **obtain greater financial profitability**. This was only possible because the software factories had to be opened in regions where the pay for professionals was lower than in the major centers. Table 2 summarizes the types of motivating elements that led to the decision to organically grow the company both domestically and internationally.

Table 2

Type of Growth, Motivation to grow and Nature

Type of Growth	Motivation to grow	Nature
Organic	high and rising installation costs	Financial
	obtain greater profitability	Financial
	increasing the power of scale to speed up processes	Operational
	increase the quality of deliveries to customers	Market

Source: Research data.

It can be seen in Table 2 above that the motivations were of various natures, confirming the need to survey all the factors related to the gains and risks of growth strategies in order to support strategic decision-making and guidance on which type of growth is most appropriate for the company at any given time.

The software factory units in Latin America followed this same strategic logic of organic growth when they opened in the 2000s. They worked in the same language, providing services to Europe as well as countries in Latin America, with the appeal of lower costs. Machado (2016) emphasizes the importance of knowledge about the sector and about different markets by the professionals and managers of a company in order for it to grow. In this sense, the company continued to grow in places where there was the possibility of taking advantage of the knowledge and experience it had already acquired about its clients, with less cultural distance and language barriers to carry out the operation.

Three to four years after the opening of these units, the expected positive results have been confirmed in terms of the four main objectives: i) to increase the power of scale in a scenario of organic growth ranging from 15% to 25% per year, with greater ease in hiring professionals during growth; ii) higher quality in the delivery of software to clients with the implementation of quality management models with international acknowledgement (CMMi); and iii) more profitability, since besides the productivity gains having been confirmed, the operating and professional costs at the software factory locations were actually cheaper (between 20% and 40%).

Operations in the countries were mapped to identify clients and services in order to increase the execution of services by the software factories. It was noted that there were costs involved in transferring knowledge from one location to another, along with cultural barriers and the growing need to hire more professionals for the units. Despite the challenges, it was possible to assess that the software factories would have the capacity to grow organically year on year, as they were already working in some way to meet the specific needs and local specifics of each country and client.

The cultural issue was also being resolved, mainly because the relationship between the executives at both ends of the service provision chain had already been established and was being intensified. By focusing on the organic growth strategy, pointed out by Hitt et al. (2019), as a way of lowering costs in the company's value chain and gaining market share, it can be said that the company also obtained what the authors define as a differentiated product for some customers who agreed to work with the new production model.

In the middle of this process, the company under study was acquired by a larger multinational company, which decided not to interfere directly in the strategies and operations of the acquired company, at least at this early stage. As a result, the aim was to continue the growth process in the places where the company was already operating. For Brazil, specifically, a preliminary study was carried out on two growth alternatives: organic – with the opening of a second software factory –, or inorganic – with the acquisition of a smaller company. The study showed that there was no outstanding target company for acquisition; on the other hand, the company already had knowledge and experience in setting up its own software factories. Therefore, the decision was made to open a new software factory, given the saturation of the existing Brazilian unit and the impossibility of serving new client projects and new clients. In view of this situation, it was decided to carry out a study to find cities to set up the second software factory.

During the structuring of this study, it was analyzed environmental variables that would influence the implementation of the created plan, such as the positive effects of industrial agglomeration, highlighted by Brito et al (2010). An important variable was also observed, in accordance with Connell and Lemyze (2021), which was the relation between the supply of services and the availability and commitment of the professionals who are part of the organization.

Thus, given the elements of the organizational and strategic context, a synthesis of the problem situation was reached, consisting of: "How to structure operational growth, taking into account the company's objective and the strategy of creating a new software factory, given the conditions of the information technology services market and its respective job market?".

Presentation and Analysis of the Solution to the Problem Situation

To carry out this study, a multidisciplinary team was set up involving the company's Human Resources, Purchasing and Facilities, Finance, Legal and Strategic Advisory departments, as well as the General Manager of the current software factory unit. The study was carried out in four stages, that is the choice of regions and cities; the criteria for choosing the best targets in the regions listed; the criteria for analysis and formation of the multidisciplinary work team; and definition of the best-ranked cities.

In the **first phase**, the aim was to choose 16 city options, considering:

1 - Cities close to São Paulo or Rio de Janeiro, where the company's offices already existed and its main clients were located, with a distance of up to 200 km from these cities or a maximum of 2 hours by air, with the aim of guaranteeing quick travel to the two capitals;
2 - Cities population ranging between 200,000 and 1.5 million inhabitants. Cities of this size are generally better structured with universities and IT companies;
3 - Cities with university city characteristics, with the configuration of different institutions (public or private) in the city or region. The main input for service provision is qualified people, and a university city has and fosters this labor market, as highlighted by Davidsson et al. (2010);
4 - Cities with a per capita income at least 20% lower than São Paulo and Rio de Janeiro. One of the conceptual bases of the software factory model is the low cost of paying professionals;
5 - Cities with an HDI (Human Development Index) greater than 0.7%. This factor is related to a desired degree of infrastructure and development in the city.

In the **second phase**, once the regions and main cities had been listed, the criteria were refined with the aim of selecting a maximum of eight cities from the initial list. To this end, based on the experience and debate of the team members, seven criteria were added and analyzed:

6 - Direct cost of IT professionals, refining criterion 4 (per capita income) for this market;
7 - Capacity for university training in IT in the medium and long term. It aims to analyze the region's development prospects for the growth of the job market;
8 - Availability of IT professionals for immediate hiring, which would facilitate the initial installation of the unit. As Coad and Tamvada (2012) point out, this is one of the main items when it comes to organic growth in the IT market;
9 - Tax incentives for setting up IT companies, with consolidated unions and easy relationships;
10 - Low structural costs (indirect to the service), such as rents and the cost of living in the city;
11 - Stable energy and telecommunications infrastructure for uninterrupted service provision;
12 - Quality of IT-trained professionals, analyzed through recognition in the evaluation of INEP (National Institute for Educational Studies and Research Anísio Teixeira).

The information used to map and analyze the criteria at this stage is shown in Table 3:

Table 3

Information and Criteria of the Search by City

Group	Criteria
Direct costs	Average developer salary
	Average salary in IT
Availability (Immediate Hiring)	Degree in Systems
	Number of IT employees
	Degree in IT courses
	Degree in fields of exact sciences
Incentives and Unions	Service Tax Aliquot
	Strength of trade unions
Capacity for growth (medium and long-term training of professionals)	University students studying Systems in the region
	University students studying IT in the region
	University students studying exact sciences in the region
	% of Public Institutions / Total in the region
Indirect costs	Cost of rent per square meter
	Cost of living
Infrastructure	Energy companies' interruption rates
	Satisfaction Index with telecommunications companies
Quality	Average rating of Systems courses in the region
	Average rating of IT courses in the region
	Crime rate

Source: Research data.

The information presented in Table 3 refers to the direct and indirect costs for the new software factory, the characteristics of the infrastructure for its installation, the labor market, the infrastructure and the level of quality of educational institutions and public security.

In the **third phase**, once the eight cities had been chosen, priority was given to the criteria considered to be the most important (6 to 9) in order to refine the analysis. This decision was based on the premises of the organic growth strategy and the company's objectives of seeking to increase scale and agility of work in the shortest possible time, together with increased profitability, which were seen as priorities by the managers. A multidisciplinary team was formed (with lawyers, human resources analysts and the company's purchasing department) and a survey was launched in order to obtain more data to complement the official information used in the previous stages, with the aim of selecting four cities from the eight previously selected.

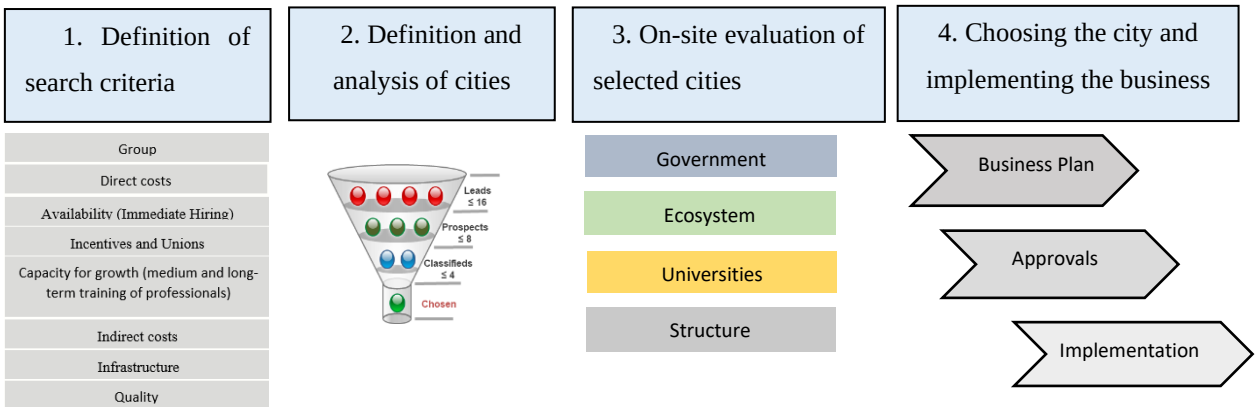
In the **fourth phase**, after the company had identified four of the selected cities as excellent options for a new software factory, visits were made to each of them to approach representatives of the City Council, associations and IT companies, universities and technology hubs, as well as to start networking with professionals in the field. The aim of this stage was to confirm the previous data, as well as to gather new information in order to classify each city as one of the four cities according to the new criteria established by the multidisciplinary team.

These criteria are an extension or more detailed analysis of the previous ones, namely: i) costs and quality of professionals, as well as data on the local labor market; ii) receptiveness and relationship policies of universities (public and private) with IT companies; iii) infrastructure of each city, checking issues such as living costs, urban mobility, city attractiveness (an item that was decisive in the choice, as an attractive city to live in can facilitate the mobility of professionals from other regions), physical space options for setting up the office; iv) the maturity of the IT ecosystem, understood as the relationship between the size of the market, the number and characteristics of companies in this sector, public policies, the integration of companies with associations and universities.

Once the analysis of possible locations had been completed, all the information was gathered to start the decision-making process, which took several meetings to finalize. The city chosen was located in the south of the country and stood out for its existing technology ecosystem, cost of living and attractiveness. The decision was made between January and February 2020. From then on, a business plan was drawn up for the new unit to be presented to the company's decision-making bodies in order to confirm the initial choice. Figure 1 summarizes the process for choosing the location of the new software factory and its implementation plan.

Figure 1

Summary of the Process of Choosing and Implementing the New Software Factory



Source: Research data.

Figure 1 helps to show the sequence and complexity of the process of choosing the city for the company's new operational unit, involving different types of information and decision-making.

For the planning, information was gathered on: i) costs (physical and logical structure, payroll, corporate opening, among others) and ii) revenues (assessment of demand in the location). In addition, the company defined plans for marketing (communication to the market and to people in the region), for Human Resources, focusing on recruitment and selection (which vacancies would be opened up, which communication channels and which educational institutions would be approached) and an analysis of the return on investment. A six-month timetable was drawn up for the activities that would need to be carried out from the opening to the stabilization of the new unit.

The decision-making process was executed in three stages, respecting the company's global structure: nationally, regionally (America) and globally, and the initial choice was confirmed. During the decision-making period, the COVID-19 pandemic began, which led the company to adopt specific work protocols, placing all professionals in the home office. After this initial period of accommodation, it was observed by the company's managers that the IT market was once again heated up with new businesses and projects driven by the pandemic's accelerating demand for digitalization in different types of companies, replacing face-to-face contact with virtual contact, as also presented by Luo (2021).

With this market warming, the expansion plan for Brazil became central, as the company started to negotiate large contracts. In order to meet this demand, the operation needed to grow, following a market-oriented vision as pointed out by Wilden, Gudergan and Lings (2019). However, the moment no longer called for physical premises or fixed locations, but for the reality of remote working and more virtual interactions. The growth strategy didn't change, i.e. it continued to be one of organic growth, but with adaptation to the current reality that was anticipating a future movement towards increased remote working, as pointed out by Choudhury, Foroughi and Larson (2021) along with an increase in the supply of services (Gebauer et al., 2021).

Due to this change in the way of working and in the perception of operating mode, the expansion plan was redefined to cover more than one location or city, focusing now on a region, or a group of states, understanding the city as a hub, or center of activity, where a central point can be created to open a physical space for the company, but with the possibility of hiring professionals not only from the city, but also from the entire region. As a result, the company's growth potential could become exponential, with the opportunity to take advantage of all the

country's technological hubs. With this strategic decision, the company has managed to do what Hitt, Arregle and Holmes (2021) point out is essential in a period of impactful and discontinuous change: it has managed to react flexibly and adaptively, taking advantage of its resources and management experience.

As a consequence of the strategic adaptation in choosing the unit location, it was necessary to revise the business plan to adjust and include important legal, labor, tax and logistical issues. The main points reviewed were those related to recruitment and selection, staff management and the service delivery model, highlighting what Connell and Lemyze (2021) mentioned about the adjustments made by the largest IT companies during the pandemic, in order to adapt and develop new skills in their professionals. These situations of rapid change are familiar to IT companies, according to Biryukov et al. (2022).

In the **Recruitment and Selection** processes, there has been a change from a face-to-face format to a virtual one, which is broader geographically, and some points have been altered, such as the need to provide adequate access and equipment for the activities. The Welcome Plan was redesigned to integrate new employees and provide leaders with information on the details of each new member's role and activities. It also ensured sporadic employee meetings for face-to-face contact and use of the company's physical facilities.

The productive capacity management format, **Staff Management**, was also adjusted to the reality of having people working in two hubs - software factories and also approximately 30% of people working outside them, in addition to productive capacity management being done virtually. This led to changes in the control process and capacity management indicators, including new concepts and criteria for defining a team for a project or service.

It was also necessary to revise the **service supply model** and its execution and monitoring processes so as not to impact on the supply of services to clients in a learning process linking strategy and structure, as stated by Connell and Lemyze (2021). The cost structure was another variable that changed with the reduction in the need for a large physical space and the consequent reduction in electricity consumption and other expenses related to the facility.

Analysis of preliminary results

From the market's point of view, there was a significant increase in demand as the digital migration of different business models accelerated, leading to a significant increase in the volume of projects above what was initially expected. This situation has led to growth as a result of the relationship between service and market, confirming what was pointed out by

Davidsson et al. (2012) as one of the favorable situations for growth and by Gebauer et al. (2021) about the increase in the volume of services offered by companies. From an organizational point of view, there has been a shift towards a more decentralized way of working, which allowed a reduction in infrastructure costs and services related to physical space.

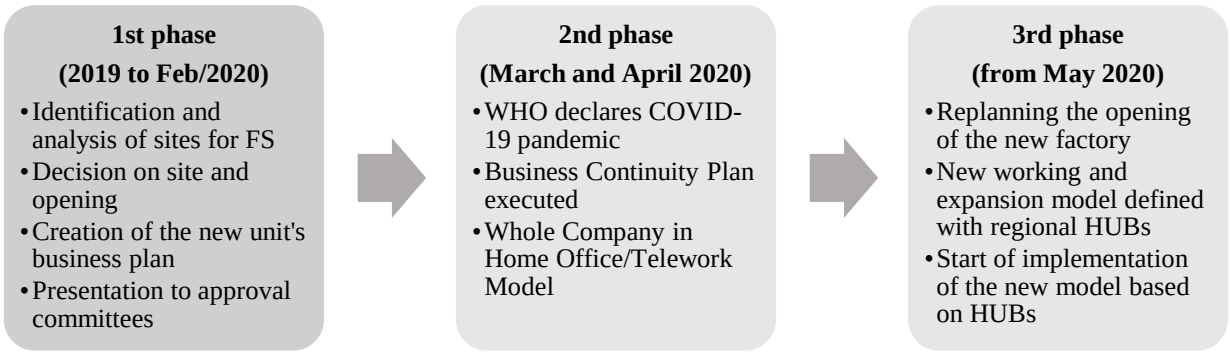
From an individual point of view, many new opportunities opened up for IT professionals, with the company now able to hire people from anywhere in Brazil, corroborating what Rauch and Rijskjik (2013) said about individual gains and the importance of people to the company's growth. What used to be a problem (the number of qualified professionals in the cities where the company operated) became a solution when the operating strategy changed to a decentralized format. And then there's what Choudhury et al. (2021) point out about the individual non-pecuniary gains for professionals who can now choose where they want to work from.

In view of this scenario and the revised growth plan, the process of hiring people in all regions of the country began. In particular, the focus was on the areas defined as Hub Centro and Hub Sul, breaking the paradigm of the "geography" factor, which made it possible to find many more qualified professionals to carry out the growth than expected. As pointed out by Coad and Tamvada (2012), this is a relevant point for IT growth, in addition to the fact of finding professionals at the same or lower cost than planned.

Figure 2 shows the main actions for choosing and implementing the solution, summarized in three stages.

Figure 2

Execution of the Growth Strategy



Source: research data.

In contrast to Figure 1, Figure 2 highlights the time dimension of the process of choosing a new operational unit, showing how a growth strategy can take time and be delayed or accelerated by contextual and situational factors, as was the case with the COVID-19 pandemic.

One of the negative impacts was the logistics of sending and maintaining equipment (computers) to some regions of Brazil. There was also difficulty in holding integration meetings with team members and the distancing of virtual contact, which inhibited or weakened stimulus and engagement actions. Another negative impact was that the HR team became an operational bottleneck, as there were few people carrying out the search for professionals before the pandemic, a factor that was dealt with quickly to enable the already adjusted growth rates to be achieved. Notably, along with the ease of hiring, the turnover rate increased due to other large companies using the same decentralized hiring strategy.

Conclusion

Based on the research question of "how can we determine and implement the most appropriate growth strategies for an IT services company, given the specific characteristics of this sector in the Brazilian context?", the aim of this technological article was to demonstrate the importance of knowledge and experience of professionals and managers in identifying the most relevant information for decision-making and the ability to adapt to unexpected changes.

By defining the motivations for growth and the company's trajectory, it was observed that the strategic decision to organically grow the operation in the Brazilian IT market was the right one. Its main motivators were: seeking an alternative to the high and rising cost of facilities in large centers and capitals in Brazil; focusing on increasing the company's scale and agility; improving the quality of the services provided and profitability.

Some factors contributed as facilitators while others limited the execution of the strategy and its adaptive movements throughout implementation. Facilitating factors include the increased demand from clients for services in the Brazilian operation; the company's preparation for growth and the adoption of standardized work methods and processes; the different options of cities to host software factories and hubs; and the availability of professionals to work remotely. Some limiting factors were: initially, the large size of the Brazilian territory and the differences in socio-economic conditions between the regions; the deficit in the supply of trained professionals outside the major centers and capitals; and the need to quickly adapt its different areas to support the distributed format.

Previous knowledge and experience in other countries helped define important aspects for structuring the new unit, while the multidisciplinary team formed had to search for, structure and analyze specific information about the Brazilian context which the company did not have in order to choose the best location and structure for the new unit. It was also possible to demonstrate the importance of developing adaptability and flexibility in the face of a dynamic environment with abrupt changes. As seen in the literature, IT companies are often the first to encounter environmental and contextual transformations, and not all of them are prepared to provide the best adaptive responses.

The process of analyzing and defining the growth strategy preceded the pandemic and was subsequently adjusted due to its effects and other factors. Therefore, the COVID-19 pandemic was a trigger to anticipate a format seen as more 'daring' until that moment, which was the choice of not having just a single location for a new software factory, but rather a change in the operational and management mentality towards a distributed format involving on-site work and, above all, remote work to form work hubs.

Even though this is a case study, the gaps found point to a theoretical contribution of this paper by demonstrating particularities of the sector and the dynamics of IT companies in the Brazilian context and how they require research perspectives and approaches that contemplate different variables for promoting change and growth, as well as their capacity and speed of adaptation, which includes large companies. As a practical contribution, the steps defined and followed, as well as the criteria used to choose and structure the new software factory unit can serve as a starting point and help other companies in their growth processes, understanding that there is a need to adapt to other particular realities. Furthermore, this study has filled a gap by showing the dynamics of a company's growth as it happened, which is not always possible in studies on business growth.

Further work is suggested to advance the understanding and discussion of the facilitating and limiting factors for growth strategies of IT companies in Brazil, such as studies on the behavior and distribution of customer demand for these companies' services, the choice of different working methods and their replication in operational units, hybrid and remote working formats and their challenges, as well as research that portrays regional and local differences in the labor market in this sector and the conditions for setting up new units.

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