

# The Role of Competitive Intelligence in Strategy Building: Insights from Brazilian Organizations

**Kaique Pacheco**

The Universidade de Sao Paulo, R. da Reitoria, 374 - Butanta, Sao Paulo - SP, 05508-220, Brazil.  
kpacheco@ups.br

Correspondence should be addressed to Kaique Pacheco : kpacheco@ups.br

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**Abstract** – The purpose of this study is to investigate the connection between competitive intelligence (CI) and corporate strategy development, with a special emphasis on four companies operating in Brazil. The research aims to provide light on how CI techniques might facilitate the development of strategies and promote organizational cohesion. The research is qualitative, using a multiple strategy of case study based on secondary sources and in-depth interviews. The study's results will hopefully shed light on how CI methods might aid businesses in creating winning strategies and adjusting to dynamic market situations. The study also aspires to offer actual data on the adoption, effectiveness, and potential influencing variables of CI practices inside enterprises. The research looks at how CI and business strategies come together in two different settings: a hospital and a commercial marketing firm. Primary sources including interviews, company websites, publications, and news articles are mined for information. In conclusion, the results of this study provide light on the interplay between CI and business strategy development, suggesting ways in which companies might better use competitive intelligence in their day-to-day operations.

**Keywords** – Competitive Intelligence, Marketing Intelligence, Market Trends, Management Information, Internal Data, External Data, Enterprise Resource Planning, Customer Relationship, IT Infrastructure.

## I. INTRODUCTION

For decades, Skov and Sherman [1] have paid close attention to information gathering and its accompanying procedures. There has been broad worldwide acceptance of the concept of competitive intelligence (CI), which has its origins in the 1970s in the United States. Although there are evidence showing that CI is becoming more ethical, some scholars are still wary of it. Xu, Liao, Li, and Song [2] describe CI as a process that involves gathering, analyzing, and strategically managing external information on an organization's objectives, policies, and procedures. One must possess good moral character and have an open mind in order to participate in critical inquiry. To get an advantage over a competitor, one strategy that has gained popularity is known as “competitive intelligence,” or CI.

According to Nilsson and Rapp [3], firms may improve their competitive position and make strategic choices in response to conditions that may affect the business environment if they have developed proper strategies. The terminology “competitive intelligence” has been used to describe the gathering of data on a company's internal operations, competitors, customers, suppliers, technology, the environment, and other important areas. The company's inner workings need to be familiar with competitive intelligence procedures and work to integrate them into routine operations. Successful CI practices, as argued by Rouach and Santi [4], need an organization to be alert to and able to interpret competitive stimuli, knowledgeable about its competitors, and wary of the potential consequences of acting hastily. The major emphasis of this investigation will be on Shih, Liu, and Hsu [5] in-depth analysis of the rationale for CI. There are a number of different meanings for CI. The term has been used synonymously with CI, business intelligence (BI), and other intelligence screening tools. With the use of BI, a large amount of raw data may be collected, covering topics like productivity, profits, and losses. This data is then transformed into a more refined decision-making process.

Business intelligence (BI) relies mostly on technology since it necessitates the technical analysis of all collected data. According to Cleland and King [6], there exists a significant distinction between CI and Business Intelligence (BI). CI is characterized as a methodical and formalized approach to gathering, evaluating, and structuring externalized information. In addition, it is beneficial for organizations to engage in the monitoring of both their competitive internal and external environments. Business intelligence (BI) is a comprehensive process that involves the integration of assessment, data

gathering, repository management, and organization. CI is considered to be a component of business intelligence (BI) according to many scholarly sources.

According to Teo and Choo [7], an inherent attribute of CI is its dual nature as both a process and a result. This phenomenon may also be elucidated via other conceptual frameworks, namely competition and intelligence. The consumers of CI include individuals at all levels of the organization, including senior management and staff from all departments within the value chain, irrespective of their positions. The term “competitive” refers to the active rivalry between two or more individuals, groups, teams, organizations, or enterprises. On the other hand, “intelligence” pertains to the capacity of an organization to anticipate or forecast changes and promptly respond to them. This study will specifically concentrate on Competitive Intelligence, excluding other terminologies such as Business Intelligence, Marketing Intelligence, and Supply Intelligence. The researcher’s purpose is to evaluate the implications of the external environment on a firm’s performance. However, the following paragraph will provide explanations of the definitions of linked intelligence in order to differentiate its characterizations.

According to Bon and Merunka [8], marketing intelligence (MI) is a field that seeks to analyse real-time competitive dynamics by examining the four key elements of marketing: location, price, product, and promotion. The objective is to get a deeper knowledge of market demands and facilitate improved decision-making. Understanding of market intelligence (MI) is linked to the organization’s market. It is obtained and examined on an individual basis to enable a suitable and informed decision-making process in formulating strategies that aid in market penetration, market growth, and capitalizing on market possibilities. The selection of CI in this particular context is motivated by its superior performance in service sectors such as banking, telecommunications, and retail, as shown by studies conducted by Garg, Vijayaraghavan, Lam, Singru, and Gao [9]. While prior research indicated that the use of CI was not often seen among small and medium-sized enterprises (SMEs), Jeyanthi, Choudhury, Hack-Polay, Singh, and Abujar [10] presented evidence that challenges this assertion by demonstrating that several SMEs have effectively integrated CI into their decision-making processes. This phenomenon may be attributed to the increasing simplicity and affordability of technology. This research will afterwards concentrate on conducting an integrative evaluation that examines the correlation between the performance and CI practices of organizations.

The objective of this research is to make a contribution to the prevailing discourse of evaluating the connection between the process of creating organizational strategies and CI within a firm. To provide an innovative aspect of CI and the detailed evaluation required to understand the complexities of CI and organizational strategies, this research purposes to employ a qualitative research technique. Our research included the implementation of a multiple case study approach, which entailed conducting qualitative interviews and gathering supplementary data from secondary sources. The study focused on four organizations situated in Brazil, with the aim of achieving data triangulation. This research aims to provide a minimum of two contributions. First, to elaborate on how CI techniques might enrich and streamline the strategy development procedure by offering insights, aid, and integration. Second, to include copious factual data on how CI practices are actually put into place and how various factors affect their success in the workplace.

The remainder of the paper has been organized as follows: Section II presents a review of literature concerning competitive intelligence. In Section III, a methodology employed to compose this article has been detailed. Section IV introduces the key case studies that are vital in composing this article. Section V presents the findings obtained after reviewing the concept of competitive intelligence in relation to the four case studies. Lastly, Section VI presents a conclusion to the research.

## II. LITERATURE REVIEW

De Almeida, Lesa, and Canton [11] define competitive intelligence (also known as corporate intelligence) as the ability to collect, analyze, and act upon information about competitors, customers, and other market factors that provide a company an advantage in the marketplace. The value of competitive intelligence lies in its capacity to help businesses gain insight into their industry’s competitive environment, allowing them to better spot and assess opportunities and threats. Successful and effective business processes are the result of data analysis conducted by organizations.

Scholarly publications such as those by Ziegler [12] show that the discipline of competitive intelligence (CI) has evolved significantly over time. Many new ideas and terms have arisen to characterize the processes of scanning and acquiring information about the corporate environment in response to these shifts. The methods and theoretical frameworks developed in the ‘60s and ‘70s placed a heavy emphasis on market monitoring and data collecting. The methods Papadakis and Barwise [13] examined tended to be unstructured and ad hoc, with no evident link to the decision-making process at higher levels of the organization. Aguilar first proposed the idea of “Environmental Scanning” in 1967. This method entails investigating the wider world in which a business operates. This information has the potential to generate knowledge that can assist top management in strategically planning the future direction of the company.

According to Aguilar’s study [14], the aforementioned definition had a commendable level of ambition and comprehensiveness at its time, notably in Aguilar’s incorporation of the actions of scanning within the framework of decision making. Okumuş [15] supports Aguilar’s concept and definition, asserting that organizations engage in environmental scanning to comprehend external forces of change. This understanding enables them to formulate effective responses that effectively contribute to the defense or enhancement of their future strategic positions. According to Fahey and King [16], Environmental Scanning is considered a fundamental mechanism for organizational learning. The organization’s ability to effectively respond and adapt to its external environment is contingent upon its capacity to acquire knowledge and interpret

the ongoing changes occurring in the external context. Jain [17] posits that Environmental Scanning encompasses a more comprehensive scope in contrast to the aforementioned approaches or processes. This is due to the fact that Environmental Scanning examines information pertaining to all facets of the company's external environment, encompassing not only competitors, suppliers, and customers, but also technological, economic, political, and regulatory domains. Such analysis aids management in formulating future plans for the organization.

In 1980, Michael Porter introduced the notion of "Competitor Intelligence," which primarily revolves around the strategic activities, attitudes, and choices of both existing and future rivals within a certain business [18]. Porter defines a "Competitor Intelligence System" as a structured process designed to gather, organize, categories, summaries, analyses, and disseminate competitor information. According to Babbar and Rai [19], the notion of "Competitive Intelligence" has garnered increased attention over the last two decades, resulting in the emergence of many definitions proposed by different scientists and institutes within this field. According to Du Toit [20], competitive Intelligence can be defined in a manner that closely aligns with Porter's concept of "Competitor Intelligence." However, Sutton argues that this definition should encompass not only the analysis of competitors, which refers to the strategic actors within an industry, but also the examination of the competitive conditions within a specific industry or region. Powell and Bradford [21] describe competitive intelligence as the process of gathering, evaluating, interpreting, and distributing data of strategic value regarding an industry and its competitors. This information is then conveyed to decision-makers in a timely manner.

This article presents a multiple case study that was done using qualitative interviews and supplementary data obtained from secondary sources. The research focused on four organizations situated in Brazil, with the aim of achieving data triangulation. This research aims to provide at least two contributions: (i) To clarify the strategies in which CI practices may aid, insight, and be integrated within strategic process formulation, and (ii) To present information concerning the implementation and efficacy of CI practices inside organizations, as well as the many aspects that may influence their performance.

### III. METHODOLOGY

Considering the nascent state of research pertaining to the correlation between process of strategy formation and CI (competitive intelligence), it was judged essential to use a qualitative methodology in our investigation. We have opted for a multiple case technique due to three primary reasons. According to Travers [22], using several case studies as empirical enquiries is a good approach for examining a phenomenon that is contemporary within its real-life environment, particularly when the difference between the phenomenon and its setting are not well defined. This method involves the utilization of many sources of evidence.

Furthermore, the use of a case study methodology provides a more comprehensive approach to address the primary purpose of this research. This objective pertains to enhancing the existing understanding of a topic that lacks clear definition, with the intention of proposing hypotheses, raising pertinent questions, or formulating a theoretical framework. The researcher may compare and contrast different examples of the phenomenon under investigation within the selected sample of theory by using a multiple case study approach. This method improves comprehension by making it easier to see connections between seemingly unrelated ideas and to draw conclusions about them based on their similarities or differences.

The information was gathered from both primary (in-person, semi-structured interviews) and secondary (business and academic journals, news articles) resources. To effectively comprehend the connection between CI practices and organizational performance, this research largely reviews the available literature from three different databases. Data evaluation and conceptualization are explored in depth in this research. Understanding that databases go through a rigorous quality control method makes them a full and dependable source for performance data and analytics research led to the decision to conduct a systematic literature review. In addition, reviewing academic material published within a certain time frame helps the author evaluate the state of knowledge about Competitive Intelligence Practices and their effect on business success.

The choice was made to increase the quality of the data and the reliability and consistency of the multi-case research. Sapsford and Jupp [23] believe that using many methods of data collection may improve data triangulation and increase confidence in the reliability of key theoretical frameworks and empirical results. Primary data was gathered from 28 interviews. Semi-structured interviews with key firm decision-makers, CI Analysts, and CI Business Unit Directors make up the bulk of the study approach. This approach aims to gather insights from individuals at various levels of seniority within the organization, to comprehend the internal dynamics, ranging to strategic from operational aspects. Furthermore, an extra set of four follow-up interviews was done, with each interview corresponding to a distinct organization. The purpose of these interviews was to get further clarity on the specific results that surfaced during the first interviews.

The study of the data started with a within-Scenario analysis for each instance to handle and evaluate big data from the findings. Interviews were recorded, and in instances where more information was needed, these interviewees were contacted. Each instance is situated within its own context and thoroughly depicted via the subsequent pertinent parts, as guided by the research topics and current scholarly literature. The academic version of the user's text would be: (1) An analysis of industry information that aided in elucidating the competitive landscape; (2) An examination of the company's generic positioning and strategy; (3) An evaluation of the firm and competitive intelligence practice's structure; (4) An assessment of the contribution of competitive intelligence to the formulation of the strategy of the company.

## IV. CASE SCENARIOS

*Scenario 1*

The firm being analyzed is a privately-owned medical facility, which focusses on diagnostic intelligence, and imaging services, such as ultrasound, computer tomography, magnetic resonance, and x-rays. Additionally, the company provides clinical analysis services, including blood count, cholesterol, and triglyceride tests. The company under consideration is a prominent entity within its industry, having achieved substantial growth via both organic expansion and strategic acquisitions of regional clinics. Presently, the company boasts a wide-ranging presence throughout Brazil, facilitated by its many service centers and a workforce over 5,000 personnel. These subject warrants examination due to its groundbreaking advancements in process innovation and optimization within the intricate Brazilian medical industry. The sector is influenced by two distinct causes, namely, the escalating technological expertise necessitating substantial expenditures, and the growing older population coupled with the extended lifespan of the Brazilian populace.

In the context of Brazil, it is noteworthy that only a quarter, or 25%, of the whole population, which amounts to around 208 million individuals, has the privilege of health insurance coverage. The aforementioned elementary statistics, in conjunction with the well-documented inadequacy of the public health system, underscores the substantial shortfall in the country's capacity to provide healthcare services to its populace. In recent years, the medical industry has seen the emergence of several new contenders that provide a quasi-universal accessibility to public medical systems, while maintaining the efficiency and quality standards associated with the private health market.

*Scenario 2*

The company in question is a commercial advertising agency that helps online retailers reach people who have shown interest in buying their products through targeted banner ads on publisher websites run by third-party advertisers. This research paper focuses on the analysis of the Brazilian subsidiary of a multinational corporation. The analysis of the firm has been undertaken due to the dynamic nature of the competitive landscape within which it works, as well as the critical significance of real-time data for effectively managing its primary operations. Like other sectors propelled by disruptive technologies, this sector experiences quick and significant transformations that are heavily impacted by the dynamic changes occurring in the advertising industry as a whole, such as the growth of the publisher sector. Furthermore, this industry operates in tandem with the dynamic fluctuations in consumer behavior, which have recently encompassed the shift towards mobile engagement, the heightened participation on social media resulting in a notable surge in direct purchases from these platforms, the simultaneous utilization of multiple devices, and the emerging challenge of ad blocking.

*Scenario 3*

This scenario investigates a famous Brazilian private bank that is a financial entity, which generates significant profits amounting to more than USD 5 billion and has a workforce of more than 90 million employees. The entity has achieved a competitive advantage within the fiscal market and ranks among the biggest corporations globally. The selection of the corporation was based on the distinct characteristics of the Brazilian banking sector that is featured high degrees of relative stability and concentration, as previously outlined. Caixa Economica Federal, BNDES, and Banco do Brasil; and three private sector leaders, including three governmental agencies, own approximately 80% of financial assets and 85% of loans, respectively. This statistical statement only partially defines the high interest rates and robust profits of Brazil's banking sector. Executives in the industry explain the high spreads by pointing to factors like increased default risk and the implementation of new regulations, including the outlawing of overdrafts. However, the industry continues to be an exceptional situation.

Furthermore, the interviews provided insights indicating that the primary individuals involved had an awareness of this particular situation. The competitive environment is seen as polarized and mostly controlled by the aforementioned large banks. As per the bank that was interviewed, it has been observed that the contemporary Fintech trends, which involve the utilization of digital technology and streamlined organizational structures, hold limited significance. Even prominent entities such as the Brazilian Nubank, a startup that provides fully digital credit accounts, primarily impact the customer base of major banks in a minor manner. Furthermore, numerous other startups have been effortlessly acquired by established financial institutions.

*Scenario 4*

The digital bank in Brazil that was chosen serves both consumers and businesses. It's relatively new, with an initial emphasis on farming, and it's prospered with a digital-first mentality. The bank operates within the aforementioned business environment, which is dominated by major private and public entities. The company sees large banks and credit unions, as well as FinTech firms like Nubank that provide online banking and credit accounts with no initial fees or high interest rates, as its main competitors. This new financial institution operates in a highly dynamic and rapidly changing environment characterized by the existence of disruptive digital technologies. the incumbent interviewed regarded as trustworthy.

## V. RESULTS AND DISCUSSION

In this part, we will start by examining each scenario individually and presenting the corresponding results inside each case. Subsequently, the cross-scenario analysis will give the foundational basis for the development of novel ideas, therefore making valuable contributions to both theoretical and practical domains.

### *Scenario 1*

#### *Evolution of MI*

The evidence of AI's progress is apparent in recent talks within the field of data science. These conversations extend beyond data modelling concerns and include the development of platforms that enable machine-specific learning. This facilitates the machine's ability to execute end-to-end functions via continuous and targeted learning. The increasing need for enhanced efficiency has placed marketing and sales at the forefront of the ongoing progress of artificial intelligence (AI). Companies that heavily depend on inbound leads and engage in inbound marketing strategies rely on customer data to get insights into consumer behavior. The significance of comprehending the client journey and the need to consistently enhance customer experience are well acknowledged and require no more stress. In a similar vein, outbound teams are using artificial intelligence (AI) to gain a notable edge in optimizing their customer relationship management (CRM) systems. This strategic use of AI enables these teams to prioritize leads with the greatest potential for sales, hence enhancing their sales team's efficiency and effectiveness. From a machine learning standpoint, the process starts with the first step of data processing, which is then followed by the succeeding steps of model construction and deployment, as well as monitoring.

The data processing phase often encompasses the activities of data collection, data cleansing, and data formatting, which afterwards facilitates the input of data into the models. The effectiveness of models is contingent upon the quality of the data inputs, hence emphasizing the utmost importance of data processing for marketers and salespeople. Currently, a majority of firms use a hybrid approach including the utilization of SQL queries and Python scripts to effectively gather and prepare data from various sources. A significant majority of businesses, over 80%, have included Artificial Intelligence (AI) mechanisms into their production and other operational processes. It is noteworthy that a substantial portion of this adoption is occurring within the Asian area.

The current trend seen in the technology industry is the strategic realignment of major tech businesses towards artificial intelligence (AI), accompanied by the recent announcements made by prominent vehicle manufacturers on the development of self-driving automobiles. Consequently, it can be confidently said that the age of AI has started. Microsoft is making significant progress in assisting companies in using this technology via its Azure platform. According to the official announcement made by Microsoft at the Ignite event, the company's primary goal is to provide comprehensive assistance to companies in the domains of customer care and sales support. The use of artificial intelligence (AI) inside the Dynamics 365 platform is now undergoing testing with prominent firms including as HP and Macy's. This AI solution aims to assist clients in obtaining the necessary goods and services they need.

In the first scenario, the Strategic Planning sector is equipped with two staff members operating fully, and focused on the task of managing what they refer to as Management Information (MI). Approximately 18 months before, there was a single part-time worker entirely assigned to the MI department. During one of the interviews, the firm defined its identification of the essential importance of establishing robust relationships with consumers and distributors within the present competitive market in which they operate. Drawing upon the explicit statements of the Chief Marketing Officer, it is evident that possessing an inventive product and persistently engaging in innovation may not be entirely enough. It is important to establish a reliable network and duly acknowledge the concerns of both our suppliers and consumers, treating them with equal importance as our primary stakeholders.

The analysts within the MI unit engage in the monitoring of market trends, the exploration of novel growth strategies, and the examination of the demands and concerns of their network of customers and suppliers. Their primary interaction is between the commercial business unit and the strategic planning department, where they engage in the examination of both internal and external data. Nevertheless, the MI Director emphasized the need of providing staff involved in CI with exposure to information from a wide range of sources. The director said that their analysts must be prepared to gather information from any available source, and they are already fulfilling this requirement.

#### *Focus on Internal and External Data*

When discussing marketing, the term "internal data" is used to describe information that is already within the company's control. All information created, gathered, and maintained by an organization falls under this category. The dataset is made up of the organization's current operational and transactional data, which comes from internal databases. Within a marketing data system, internal sources provide data such as the quantity of website visits, consumers' ad preferences, sales patterns and measurements, rates of email engagement, reports on cash flow, and customer contact details obtained throughout the purchasing journey. There are two distinct approaches for gathering internal information: Secondary and Primary. Primary data gathering is often carried out using many methodologies, including direct observations, interviews, and focus group discussions questionnaires. The process of secondary data collecting entails the retrieval of pre-existing internal data owned by external entities, such as Salesforce, HubSpot, and Google Analytics. **Table 1.** provides an overview of the main internal sources that organizations often use to get internal marketing data.

**Table 1.** Primary internal sources for companies to extract data

<b>Internal Sources of Data</b>	<b>Explanation</b>
<b>POS information and Transactional data</b>	Data about the company's spending and sales patterns, as well as those of its customers - provides insight into where costs might be reduced to maintain profitability and identifies patterns in consumer behavior
<b>Archives</b>	Contains information from the company's past
<b>Internal documents</b>	Includes everything from emails to Word documents to PDFs to XML files that pertains to the running of the company.
<b>Customer relationship management system</b>	CRM systems provide the ability to harvest information about customers' corporate connections and location.
<b>Device sensor</b>	Consists of information collected by IoT sensors that the firm has installed, such as vehicle sensors installed on corporate sensors or fleets given to consumers to track their sleep or exercise habits.

External data in the field of marketing refers to data that is created from sources external to an organization. This classification encompasses data that is not produced or originated inside the organization itself. The aforementioned data has the potential to be publicly accessible, lacking a defined structure, and/or obtained by other entities. Several instances of external data can be identified, including online search queries pertaining to specific subjects, popular keywords, and products, engagement and presence on social media platforms, current financial trends such as the price of company shares, indicators of geospatial data, stability, and company growth encompassing property value details, and customer information encompassing hobbies, interests, and demographics. Internet searches, administrative data, census data, election statistics, and tax records are all examples of public data; private data is owned by third-party companies like Transunion, Amazon, Google, and Facebook; and there is a growing body of data that falls into both categories. Social media platforms, publicly accessible government data, geographical and satellite data, the Google search engine, journalistic organizations, legal institutions, private businesses, web-harvested data, and data brokerage companies are all examples of popular external data sources.

Macroeconomic elements, such as inflation forecasting and demographic analysis, are the focus of their analysis of the external environment. Additionally, they focus on industry-specific issues include spotting new insurance firms, estimating the number of people covered by health insurance at year's end, doing benchmarking studies, and keeping tabs on rivals' public performance data. MI analysts' job is to aid managers in identifying market opportunities and threats. They do this by providing in-depth analysis of the market as a whole. Commercial team controls price issues and handles competitors' pricing strategies; internal analysis focuses on the company's own pricing strategies.

#### *IT Infrastructure and Data Systems*

At the level of operation, the daily actions are monitored and recorded. Real-time operational data is comprehensively broadcasted and shown on digital dashboards inside the shared workspace. All of these operations are effectively monitored, consolidated, and synchronized using a wide range of accessible information technology tools, in order to prevent redundancy across different business divisions. The organization has endeavored to establish an advanced infrastructure by relying on four key systems of information: Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), imaging software used by a contact center platform, and technicians. Indeed, this method has effectively streamlined the intricacies associated with managing a geographically scattered organization by mitigating the expenses incurred by adapting to various locations and eliminating superfluous operational expenditures. The organization has a robust data-centric and analytical culture, embedded within the structural model, which stimulates decision-making across many strategic tiers. This fundamental factor proves to be a relevant distinctive component for the firm's general strategic methodology and competitive advantage.

#### *Scenario 2*

##### *Data Analytics in Operations*

Throughout history, the field of operations management has predominantly prioritized the study and development of models. These models, which draw upon microeconomic theory, game theory, optimization, and stochastic models, have mostly been used to derive strategic insights pertaining to organizations' operational strategies. The historical popularity of the model-based approach may be attributed to the limited availability of data and constraints in computational capabilities. In contemporary times, a notable transformation has occurred within the realm of operations management research. The primary catalyst for this transition may be attributed to the growing accessibility of data. In many sectors, including retail, healthcare, and others, there is an increasing availability of data that is characterized by greater volume and granularity compared to previous periods. Simultaneously, the proliferation of data has been accompanied by methodological advancements in other disciplines. The discipline of machine learning, situated at the confluence of computer science and statistics, has developed techniques that enable the acquisition of accurate predictive models for datasets with a large number of variables. Examples of such methods include L1 regularized regression, commonly referred to as LASSO regression, and random forests.

The field of optimization has experienced significant advancements. Various scientific breakthroughs in optimization modelling, such as robust optimization, inverse optimization, and enhanced techniques for formulating integer optimization problems, have expanded the range of applications and the magnitude of optimization's applicability. Researchers in the fields of machine learning and optimization have had advantageous outcomes due to the presence of top-notch software tools. These tools have facilitated the estimation of machine learning models and the resolution of complex linear, conic, and mixed-integer optimization problems on a wide scale. The aforementioned advancements have resulted in the emergence and growth of the field of data analytics, often referred to as analytics. The field of analytics may be succinctly defined as the use of data to develop models that inform decision-making processes, ultimately resulting in the generation of value.

In the second scenario, the operations department oversees the DA (data analytics) section, which consists of two full-time analysts. However, most of their operations are with the business world. Information technology instruments have a significant role to play in their operation. The efficacy of these operations are majorly based on the expertise of utilizing IT tools. The routine of the DA unit involves the analysis and collection of internal information pertaining to the customers of their merchants. Specifically, the user data serves as the primary data asset of the organization and serves as the key factor in making choices at this level. The data in question include many types of information, such as transactions, events, produced sales volume, and the associated profit resulting from the retargeting company's service. The primary purpose of using this data is to provide reports that aid the Commercial team in establishing margin objectives for the next quarter. Additionally, this particular unit effectively fulfils the occasional and ad hoc demands of customers by providing customized market analysis services, such as conducting in-depth studies on the purchasing patterns and behaviors of their shops' consumers.

The Data Analysis (DA) team is responsible for undertaking tasks that include doing extensive and large-scale market analysis. This includes assessing the patterns associated with Black Friday, as explicitly requested by the Marketing department. The ownership of the analyzed user data is with the firm and it is readily accessible on the platform of the client. Consequently, the interviewees did not encounter any challenges pertaining to the gathering of data. The manager of the unit identifies urgent and unforeseen demands as the primary challenges, with technical issues related to the business intelligence (BI) tools for the analyst.

#### *Data in a Changing Business Environment*

Business entities have a crucial and indispensable role within the fabric of any given society. These institutions are responsible for providing products or services to customers, facilitating meaningful employment for those with specific skills or in need, and contributing to the overall improvement of living standards. Hence, the significance of these institutions, regardless of their size, in contributing to the economic progress of a nation is important. Hence, the examination of how these enterprises navigate the unpredictable commercial landscape is a compelling and intellectually stimulating subject for scholarly investigation. Gaining a comprehensive understanding of the company environment is of utmost significance in order to develop relevant strategies. Environmental variables have a significant role in several aspects of corporate operations, including the characteristics, geographical positioning, and pricing of inputs and products, as well as the management of supply chains and human resource policies. Hence, acquiring knowledge about the several constituents of the corporate environment, including economic, socio-cultural, political framework, legal, and technical dimensions, has significant importance.

In [24], Raoprasert and Islam examined the correlation between the external market environment, corporate governance, and organizational effectiveness. The study provided valuable understanding of the fundamental connections among the parameters. Typically, the analysis includes an empirical examination of the impact resulting from corporate governance and external market circumstances on the achievement of organizational performance. This elucidates the manner in which corporate governance engages with unforeseeable external factors in order to enhance organizational effectiveness. Based on the research results, it is recommended that organizations facing potential risks from external market conditions should adopt suitable corporate governance practices. Therefore, organizations have the potential to attain optimal levels of performance. Wang and Wang [25] contribute to the current study by establishing connections between relevant factors in order to navigate the unpredictable business environment. In [26], a comprehensive analysis is presented about the impact of the business environment on entrepreneurial skill and orientation. There exists a prevalent misconception that commercial organizations possess significant autonomy in devising strategy. Contrarily, the external business environment may significantly impede a company's operational capabilities.

As per the analysis conducted by a DA unit analyst, the utilization of web and social networks has resulted in the accumulation of substantial data. Consequently, CI practices and activities have become imperative in order to effectively manage the persistent changes that define their industry. The analyst emphasizes that the modern and web technologies are both the source of challenges and the means to resolve the inherent chaos within their sector. According to the statements provided by the respondents, the primary role of the function primarily involves providing assistance to the commercial team in making tactical choices, with a specific emphasis on addressing medium-term and immediate concerns. The department provides help in the introduction of new goods and/or features, projecting profitability and sales, as well as monitoring the success of the product/feature throughout its market presence. Ultimately, they contribute to improving customer relationships. Hence, the unit plays a role in the development of tactical strategies at the local level by offering intelligence and recommendations to senior managers in the commercial region. However, its main focus lies in the monitoring and

execution of strategies by giving feedback on their performance in the market. The management emphasizes the deficiency of communication inside the headquarters, which enforces the firm's strategic objectives in a top-down approach, resulting in the firm being often exposed to the actions of new market entrants, and local competitors.

### *Scenario 3*

#### *BI Unit and Data Sources*

In the third scenario, the examined business intelligence (BI) unit integrates three analysts, one of which is employed full-time while the remaining two operate. The unit primarily depends on big data obtained from the bank's customers, who are considered the firm's most essential data-based asset. The practices and activities overseen by BI unit are witnessing significant development as a result of the dynamic aspect of the market. The firm's director highlights that customers are now altering their habits and expectations at a quicker pace compared to previous times. The customers consider their experience with other businesses, such as the Amazon delivery service, which may be somewhat unrelated, and they anticipate a similar level of service in our context. Consequently, it is essential to expand the scope of our analysis of the external environment in relation to previous assessments. Furthermore, a greater number of activities and practices are required to address this matter. The Director also emphasized the need of using IT technologies to enhance operational efficiency.

Nevertheless, the interviewees have also cited other data sources, including those obtained from external consulting firms, market research, public databases, and the Central Bank. Based on the available data, the analysts provide monthly reports pertaining to various aspects such as financial outcomes of agencies, follow-ups of production (including cash flows and balances), new account openings, and managers' performance evaluations. The discrepancies are mostly assessed in reference to the projected annual budget (e.g., instances of accounts being established below anticipated levels, charges exceeding anticipated levels). Furthermore, the professionals in this field are responsible for discerning the distinct characteristics of their diverse clientele and closely monitoring the attrition of customers to rival entities. This entails conducting thorough investigations into the underlying causes and afterwards assisting the Commercial department in formulating a comprehensive competitive strategy aimed at prevailing over the competition.

#### *Short-Term Impact and Uncoordinated Activities*

Based on the findings of the interviews, it was observed that a significant portion, ranging from 60% to 70%, of time of analysts is allocated towards the generation of reports that accompany products of the bank and cater to customer needs. The remaining portion of their time is devoted to fulfilling ad hoc requests, which follows a project-oriented methodology. According to an interview with a business intelligence analyst, the production of accurate reports requires a strong feeling of responsibility and proactivity. Merely waiting for information to be provided is insufficient; instead, analysts must be receptive to various external inputs.

The primary emphasis is at the level of tactic, whereby about 80% of the requests and their corresponding outputs exhibit short to medium-term effects. Based on the responses obtained from the interviewees, it was shown that a mere 5% of individuals actively seek for novel long-term prospects. Certain sections within the organization are tasked with handling strategic matters, such as economic forecasting. However, the informants who were questioned expressed a lack of knowledge of the connection between their respective areas and these strategic activities. The operations conducted by the individuals lack coordination, resulting in many instances of overlapping attempts. Moreover, the contribution of this field is mostly focused on the execution and control aspects of the process of strategy formulation. The data that is being monitored serves as a proactive mechanism to evaluate the effectiveness of the segment strategy, allowing for timely assessment of its outcomes.

Additionally, analysts play a crucial role in providing feedback on the implementation of the strategy, facilitating the identification and implementation of any necessary revisions. This perspective is based on the observations, which the major tasks integrate the establishment of monthly reports to define the bank's provisions, and the recommendations to boost the firm's services.

### *Scenario 4*

#### *CRM Unit and Client Acquisition*

Upon doing a comprehensive examination of the existing body of literature, it becomes evident that there is a dearth of research specifically dedicated to the investigation of customer relationship management (CRM) abilities pertaining to client acquisition. It is evident that a significant portion of the prevailing marketing and sales literature does indeed tackle the subject of customer management. However, there is a dearth of accessible resources that provide detailed insights into particular abilities in this area. The prevailing consensus among scholars in the field of marketing management is that it is widely accepted and unchallenged that strategic planning is a rational approach to attaining desired company results. Berndt, Altobelli, and Sander [27] asserts that organizations that achieve success engage in the practice of market-oriented strategy planning. In order to attain specified and quantifiable targets, plans are formulated and executed, with subsequent measurement of outcomes and implementation of corrective measures in the event of undesirable deviations. Customer acquisition remains a significant priority for companies in various scenarios, such as new business ventures, expansion into different geographic or customer market segments, exploration of novel applications for products or services, promotion of



low involvement offerings, and situations where switching costs are minimal. Furthermore, in situations when markets exhibit growth potential, it becomes strategically imperative for all participants to priorities expanding the overall market size rather than safeguarding their existing client base. In some industries, the continuous acquisition of new consumers is important for the survival of firms. Illustrative instances include funeral direction services as well as privately-owned medical facilities that specialize in surgical interventions like hernia surgeries or cataract removal.

In the fourth scenario, the examined CRM unit, consisting of two part-time workers, places emphasis on the acquisition of new customers through social networks and partnerships with other industries possessing personal information. Additionally, it includes a component dedicated to client retention, wherein personalized products and services are offered to each individual client. Like many other emerging organizations, C-level executives sometimes participate in CRM (customer relationship management) initiatives. The CRM unit gathers and utilizes user data with the objective of expanding their customer base and enhancing their service provision. As per the manager questioned, the other departments rely on the expertise of this particular field to ensure their strategic alignment with actuality, so enabling them to make well-informed judgements based in factual evidence. They highlight their proactive nature in customer acquisition initiatives. In half of the instances, they possess the capability to identify novel prospects and proffer recommendations for other departments. In the other circumstances, they are required to conduct analyses, particularly pertaining to potential financial regulatory concerns, prior to introducing new items into the market.

#### *Data-Driven Decision-Making*

During the process of making decisions, our reliance on assumptions, premises, and the contextual factors is led by the objective connected with the choice. The background and assumptions include external factors outside the influence of any decision maker. However, the premises and knowledge of the corporation rely on our data, since they are integral components of our organizational structure. One often seen conceptual error is to the conflation of data and information, despite their distinct conceptual frameworks. It might be argued that although it is possible to collect data from several dissimilar data sources, there is no guarantee that the data will include qualities of consistency, comparability, and traceability. In this context, when faced with the necessity to make a choice, it is necessary to possess a comprehensive knowledge of the item being analyzed and the relevant facts pertaining to it at the exact moment of consideration. The significance of this matter lies in its alignment with the principles of general system theory. In order to comprehend a system comprehensively, it is important to ascertain its boundaries, context, subsystems, feedback mechanisms, as well as input and output components. Once the system has been identified, it is possible to proceed with the quantification of each linked attribute to achieve a detailed conceptualization of it.

As to the statement of the CRM Director, the department offers assistance to executives in generating ideas by giving information. This intelligence aids top-level managers in gaining a deeper comprehension of the client, the framework of financial regulatory and the competitive landscape. The CEO (Chief Executive Officer) noted that the Director of CRM and their team provided assistance in the process of pivoting the company model and played a significant role in fully altering the market posture. CRM analysts demonstrate an understanding of the significance of their function and the need of being well-informed. They acknowledge that their job has value inside the organization and recognize the importance of being proactive, much to journalists who strategically position themselves to get valuable information. The goals are established at the highest level, drawing upon the analyses conducted by the Customer Relationship Management (CRM) department. According to the respondent, each choice is grounded in statistics.

Nevertheless, the CRM department does not actively or directly engage in the formulation of strategies. Its primary role is to provide support for decision-making via the fulfilment of on-demand requests. The competitive landscape of our banking firm, as stated by the Founder and CEO, is characterized as chaotic, necessitating strategic and ongoing monitoring. In this context, the CEO emphasizes the necessity to foster an open organizational culture. This integrates seeking partnerships and employing a receptive mindset towards external inputs. The company hopes that by doing this, it can stay in close proximity to customer needs and prevent any possible disconnection.

#### VI. CONCLUSION

This article contributes significantly to the aspect of strategic management by defining how competitive intelligence (CI) may make or break a company's strategic approach. In this research, we want to dissect the connection between CI and the formulation of strategies. To do this, we first undertake a thorough literature review and then analyze many case studies. The study does have certain limitations. Our investigation is subject to two major caveats. To begin, our capacity to extrapolate and use these results on a wider population may be limited by the relatively small size of our sample. Second, it's crucial to recognize the problem of observer bias inherent in qualitative research. Due to variables including informants' poor knowledge of the researchers' queries and their probable mistakes in remembering prior occurrences, this bias might lead to the suppression of vital information and insights. Despite this, we started with the notion that, despite these restrictions, there is a need for a comprehensive examination of the link between CI and the development of strategies. This investigation would be most effectively conducted through qualitative research, focusing on a small representative sample of cases chosen using sampling purposive. Furthermore, our dependence on a robust methodology, consistently used throughout both the data collecting and analysis phases, likely contributed to the increased validity of our qualitative investigation into the dynamics of the process of strategy formulation and competitive intelligence Future research in this area should account for

these concerns by attempting to reproduce our findings in other, and maybe more statistically representative, theoretical populations.

### Writing- Reviewing and Editing:

All authors reviewed the results and approved the final version of the manuscript.

### Data Availability

No data was used to support this study.

### Conflicts of Interests

The author(s) declare(s) that they have no conflicts of interest.

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### Competing Interests

There are no competing interests

### References

- [1]. R. B. Skov and S. J. Sherman, "Information-gathering processes: Diagnosticity, hypothesis-confirmatory strategies, and perceived hypothesis confirmation," *Journal of Experimental Social Psychology*, vol. 22, no. 2, pp. 93–121, Mar. 1986, doi: 10.1016/0022-1031(86)90031-4.
- [2]. K. Xu, S. S. Liao, J. Li, and Y. Song, "Mining comparative opinions from customer reviews for Competitive Intelligence," *Decision Support Systems*, vol. 50, no. 4, pp. 743–754, Mar. 2011, doi: 10.1016/j.dss.2010.08.021.
- [3]. F. Nilsson and B. Rapp, *Understanding competitive advantage: The Importance of Strategic Congruence and Integrated Control*. Springer Science & Business Media, 2005.
- [4]. D. Rouach and P. Santi, "Competitive intelligence adds value:," *European Management Journal*, vol. 19, no. 5, pp. 552–559, Oct. 2001, doi: 10.1016/S0263-2373(01)00069-x.
- [5]. M.-J. Shih, D. Liu, and M.-L. Hsu, "Discovering competitive intelligence by mining changes in patent trends," *Expert Systems With Applications*, vol. 37, no. 4, pp. 2882–2890, Apr. 2010, doi: 10.1016/j.eswa.2009.09.001.
- [6]. D. I. Cleland and W. R. King, "Competitive business intelligence systems," *Business Horizons*, vol. 18, no. 6, pp. 19–28, Dec. 1975, doi: 10.1016/0007-6813(75)90036-1.
- [7]. T. S. H. Teo and W. Y. Choo, "Assessing the impact of using the Internet for competitive intelligence," *Information & Management*, vol. 39, no. 1, pp. 67–83, Nov. 2001, doi: 10.1016/S0378-7206(01)00080-5.
- [8]. J. L. Bon and D. Merunka, "The impact of individual and managerial factors on salespeople's contribution to marketing intelligence activities," *International Journal of Research in Marketing*, vol. 23, no. 4, pp. 395–408, Dec. 2006, doi: 10.1016/j.ijresmar.2006.10.002.
- [9]. A. Garg, V. Vijayaraghavan, J. S. L. Lam, P. M. Singru, and L. Gao, "A molecular simulation based computational intelligence study of a nano-machining process with implications on its environmental performance," *Swarm and Evolutionary Computation*, vol. 21, pp. 54–63, Apr. 2015, doi: 10.1016/j.swevo.2015.01.001.
- [10]. P. M. Jeyanthi, T. Choudhury, D. Hack-Polay, T. P. Singh, and S. Abujar, *Decision intelligence analytics and the implementation of strategic business management*. Springer Nature, 2022.
- [11]. F. A. De Almeida, H. Lesca, and A. W. P. Canton, "Intrinsic motivation for knowledge sharing – competitive intelligence process in a telecom company," *Journal of Knowledge Management*, vol. 20, no. 6, pp. 1282–1301, Oct. 2016, doi: 10.1108/jkm-02-2016-0083.
- [12]. C.-N. Ziegler, *Mining for Strategic Competitive intelligence: Foundations and Applications*. Springer, 2012.
- [13]. V. Papadakis and P. Barwise, *Strategic decisions*. Springer Science & Business Media, 2012.
- [14]. D. C. Hambrick, "Environmental scanning and organizational strategy," *Strategic Management Journal*, vol. 3, no. 2, pp. 159–174, Apr. 1982, doi: 10.1002/smj.4250030207.
- [15]. F. Okumuş, "Potential challenges of employing a formal environmental scanning approach in hospitality organizations," *International Journal of Hospitality Management*, vol. 23, no. 2, pp. 123–143, Jun. 2004, doi: 10.1016/j.ijhm.2003.09.002.
- [16]. L. Fahey and W. R. King, "Environmental scanning for corporate planning," *Business Horizons*, vol. 20, no. 4, pp. 61–71, Aug. 1977, doi: 10.1016/0007-6813(77)90010-6.
- [17]. S. C. Jain, "Environmental scanning in U.S. corporations," *Long Range Planning*, vol. 17, no. 2, pp. 117–128, Apr. 1984, doi: 10.1016/0024-6301(84)90143-2.
- [18]. M. E. Porter, *Competitive strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press; Toronto: Maxwell Macmillan Canada, 1980.
- [19]. S. Babbar and A. Rai, "Competitive intelligence for international business," *Long Range Planning*, vol. 26, no. 3, pp. 103–113, Jun. 1993, doi: 10.1016/0024-6301(93)90012-5.
- [20]. A. S. A. Du Toit, "Competitive intelligence in the knowledge economy: what is in it for South African manufacturing enterprises?," *International Journal of Information Management*, vol. 23, no. 2, pp. 111–120, Apr. 2003, doi: 10.1016/S0268-4012(02)00103-2.
- [21]. J. H. Powell and J. P. Bradford, "Targeting intelligence gathering in a dynamic competitive environment," *International Journal of Information Management*, vol. 20, no. 3, pp. 181–195, Jun. 2000, doi: 10.1016/S0268-4012(00)00004-9.
- [22]. M. Travers, *Qualitative Research through Case Studies*. SAGE, 2001.
- [23]. R. Sapsford and V. Jupp, *Data collection and analysis*. SAGE, 2006.
- [24]. T. Raoprasert and S. M. N. Islam, *Designing an efficient management system: Modeling of Convergence Factors Exemplified by the Case of Japanese Businesses in Thailand*. Springer Science & Business Media, 2010.
- [25]. M. Wang and H. Wang, "From process logic to business logic—A cognitive approach to business process management," *Information & Management*, vol. 43, no. 2, pp. 179–193, Mar. 2006, doi: 10.1016/j.im.2005.06.001.
- [26]. L. C. Giunipero, D. Denslow, and R. A. Eltantawy, "Purchasing/supply chain management flexibility: Moving to an entrepreneurial skill set," *Industrial Marketing Management*, vol. 34, no. 6, pp. 602–613, Aug. 2005, doi: 10.1016/j.indmarman.2004.11.004.
- [27]. R. Berndt, C. F. Altobelli, and M. Sander, *International Marketing Management*. Springer Nature, 2023.