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كلية العلـــــوم الاقتصادية التجارية و علوم التسيير

مطبوعة

Strategic Intelligence of the Organization – Veille Stratégique de l'Entreprise

اليقظة الاستراتيجية للمؤسسة

محاضرة مع دراسة حالة لمؤسسات جزائرية

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« Veille Stratégique de l'entreprise »

Description du cours :

La veille stratégique de l'entreprise a toujours existé de manière informelle au sein de l'entreprise. Ceci nécessite la surveillance de l'environnement externe pour identifier les opportunités et les menaces qui peuvent impactés le succès de l'organisation. Dans l'actuelle économie concurrentielle, cette pratique s'avère cruciale pour un management stratégique efficace. Ce polycopié souligne l'importance de la veille stratégique en tant qu'outil stratégique de management de l'information dans un environnement incertain. Ce document explore les aspects de la veille stratégique et présente les pratiques de sa mesure

sur le plan organisationnel. Nous mettons en lumière comment ces pratiques individuelles ; relationnelles ; synergiques ; peuvent façonner le comportement stratégique de l'organisation.

Objectifs : ce polycopié, destiné aux étudiants de deuxième année Master Sciences Economiques ; option Economie et Gestion de l'Entreprise, leur permettra de comprendre la veille Stratégique, en tant que processus améliorant la prise de décision, et ses dimensions, notamment les pratiques de prospective stratégique. De plus, les étudiants découvriront le rôle crucial des analystes et la relation entre la veille stratégique et d'autres concepts tels que l'avantage concurrentiel, les capacités d'innovation et les technologies de l'information. De plus, nous présentons l'étude de cas de quelques entreprises algériennes pour montrer leurs différentes pratiques de veille stratégique.

« Strategic Intelligence of the Organization»

Course Description:

Strategic intelligence has always been informally present in firms. It involves actively monitoring the external environment to identify opportunities and threats that may impact the organization's success. In today's highly competitive economy, this practice is crucial for effective strategic management. This document underscores the importance of strategic intelligence as a strategic tool for managing information in an uncertain environment. We explore the dimensions of strategic intelligence and provide practices for measuring it at the organizational level. We also highlight how these practices, categorized as individual, relational, or synergetic, can shape an organization's strategic behavior.

Goals: Through this polycopy, intended for second-year master's students in the fields of Economics and Management of organization, students will be able to understand the concept of Strategic Intelligence, as a process improving decision-making, and its dimensions, especially strategic foresight practices. Furthermore, students will discover the crucial role of analysts and the relationship between strategic intelligence and other concepts such as competitive advantage, innovation capabilities, and information technologies. Additionally, we present the case study of some Algerian companies to show the different practices of strategic intelligence and their impact on an organization's performance level.

" اليقظة الاستراتيجية للمؤسسة "

وصف المحاضرة :

لقد كان الذكاء الاستراتيجي او ما يعرف أيضا باليقظة الاستراتيجية موجودًا دائمًا بشكل غير رسمي في المؤسسات. وهو ينطوي على مراقبة البيئة الخارجية بشكل نشط لتحديد الفرص والتهديدات التي قد تؤثر على نجاح المنظمة. وفي ظل الاقتصاد الحالي والذي يتميز بشدة التنافسية، تعد هذه الممارسة أمرًا بالغ الأهمية للإدارة الاستراتيجية الفعالة. تبين هذه المطبوعة أهمية الذكاء الاقتصادي كأداة استراتيجية لإدارة المعلومات في بيئة عدم اليقين كما نستكشف ابعاد الذكاء الاقتصادي ونقدم ممارسات لقياسه على المستوى التنظيمي. كما نسلط الضوء أيضًا على مقدرة هذه الممارسات الفردية أو العلائقية، في تصميم السلوك الاستراتيجي للمؤسسة.

الأهداف : من خلال هذه المطبوعة الموجهة لطلاب الماستر علوم اقتصادية السنة الثانية تخصص الاقتصاد والإدارة، سيتمكن الطلاب من تعلم سيتمكن الطلاب من فهم مفهوم الذكاء الاستراتيجي، كعملية تحسين اتخاذ القرار، وأبعاده، وخاصة ممارسات الاستشراف الاستراتيجي . علاوة على ذلك، سيكتشف الطلاب الدور الحاسم للمحللين والعلاقة بين الذكاء الاستراتيجي والمفاهيم الأخرى مثل الميزة التنافسية وقدرات الابداع وتكنلوجيا المعلومات. كذلك، نقدم دراسة حالة لبعض الشركات الجزائرية لإظهار الممارسات المختلفة للذكاء الاستراتيجي.

Preamble

This polycopy is a course support for students in the second year of the Economic Sciences Master, specialty “Economics and Enterprise Management”.

The structure and contents of the chapters of this polycopy are synchronized with the Canvas Content of the L.M.D. Academic Master 2018–2019 training offer of the Mohamed Ben Ahmed University of Oran 2.

This polycopy includes nine chapters:

The first chapter presents the concept of Strategic Intelligence, its evolution, and the several steps of the strategic intelligence cycle. We also focus on the lifecycle intelligence and the intelligence analysis at differing organizational levels within the organization.

The second chapter is dedicated to the historical evolution of strategic intelligence, its typology, and its characteristics. We also present the principal dimensions, objectives, and challenges of strategic intelligence.

Through the third chapter, students should be able to understand the organizational behavior associated with strategic intelligence practices and the pivotal role of the analyst as a principal actor in this process. Besides, we highlight the main responsibilities and challenges faced by this actor.

The fourth chapter presents the concept of competitive advantage, its dimensions, and attributes. After that, we focus on the study of strategic intelligence ability to create a competitive advantage within an organization to improve its performance.

In the sixth chapter, we present the relationship between strategic intelligence and innovation capabilities within the firm, while the seventh chapter focuses on the study of information infrastructure as a basis for the strategic intelligence process, especially through the role of artificial intelligence tools. The eighth chapter is dedicated to the relationship between strategic foresight and strategic intelligence through the different scenario approaches.

The last chapter presents the role of strategic intelligence in crisis management.

Finally, some case studies of strategic intelligence practices in Algerian organizations are presented.

Objectives

The objectives of this course are as follows:

- ✓ The comprehension of the strategic intelligence importance in the nowadays uncertain environment to identify opportunities and threats that may impact the organization's success;
- ✓ The assimilation of the different phases of the strategic intelligence process;
- ✓ Awareness of the importance of Analyst skills in the success of strategic intelligence;
- ✓ Understanding the relationship between strategic intelligence and the making-decision process;
- ✓ Comprehension of the strategic intelligence ability to lead an organization in obtaining competitive advantage by improving innovation.
- ✓ The assimilation of Information Technologies role in enhancing strategic intelligence practice within an organization in terms of communication, collaborative work, etc.

This document underscores the importance of Strategic Intelligence as a strategic tool for managing information within organizations and leading it to the decision-making process. We explore the aspects of strategic intelligence as an individual, relational, or synergetic practices, which can shape an organization's strategic behavior and create a competitive advantage. Additionally, we focus on the case of many Algerian companies in order to show the different practices of strategic intelligence.

Chapter 1: Strategic Intelligence Concept

Nowadays, organizations are searching for the best instruments to face complexity, turbulence, and uncertainty in the environment. Moreover, in light of the exponential developments and rapid changes in the field of Information technologies (IT) that the world is witnessing, it has become necessary for organizations to strengthen themselves with strategic intelligence practices serving their information system and providing them information from their external environment. Since the organization is a dynamic unit and a center for decision-making, then collecting, selecting, and processing information, scientifically and objectively, represent a strategic goal that every administration seeks to achieve.

Therefore, anticipation and early assessment of threats, risks, and opportunities, represent the central functionality of the new strategic approach thanks to strategic intelligence (Manuel A. F.,Villacañas M., 2021).

Strategic intelligence is linked to the management of information according to well-studied action steps, starting with collecting information from the organization's environment, processing it, analyzing it, disseminating it, and using it to exploit available opportunities and avoid potential risks, this is in a proactive, anticipatory nature to keep pace with environmental changes (Sadok, M. & Leska, H., 2009).

So, what is the definition of Strategic Intelligence and its evolution through time?

1. Concept Evolution

The term "strategic intelligence" has had many concepts and differences in connotations, which has led to its mixing with other terms that are close to it in meaning, making it synonymous at times and interpreted at other times.

As for its general definition means that strategic scientific function through which individuals and organizations track information related to changes that may occur in their external environment to use it proactively. In others words, strategic intelligence is the process of optimal management of information through searching, processing, analyzing and disseminating data to enable decision makers to develop the organization and ensure its continuity by increasing its competitiveness, creating job opportunities and reducing risks

and uncertainty in general (Boudaoud, F., 2019, Lesca, H., 2003). It's important to highlight that this concept has evolved over time, as shown in the following paragraphs.

1.1. Data, Information, and Intelligence

Data, information, and intelligence are the first three categories and the cornerstones of strategic intelligence. First of all, data are, broadly speaking, captured, classified, and stored as basic descriptions of objects, events, activities, and transactions that are not arranged in a way that makes sense such as figures, sounds, photos, numbers, and alphanumeric characters.

To provide meaning and value to the receiver, the information also conforms to the structured data and the estimated quality level. The receiver understands the meaning and makes inferences and deductions. In the end, senior management has been calling for a more exhaustive, efficient, timely, rigorous, clear, and credible decision-making process for many years in response to the rising demands of customers, residents, and public opinion in general (Fernández-Villacañas, 2016).

Besides, the characteristics of useful information are presented as follows.

- **Subjectivity**: the value and usefulness of information are highly subjective, because what is information for one person may not be for another. The need to adapt it to the particular needs and tastes of the intended audience is highlighted by this subjectivity.
- **Relevance**: information must be pertinent and meaningful to the decision maker. In other words, it must be directly related to the concerns and decisions of the individual or entity using it.
- **Timeliness**: it means that information must be delivered at the right time and the right place to the right person. The significance of it often diminishes over time, so delivering it promptly is essential to make it useful for decision-making. Information that is out of current or delayed might lead to missed opportunities or poor decisions.
- **Accuracy**: information must be free of errors. Erroneous information can result in poor decisions and erode the confidence of users.
- **Completeness**: Information is said to be complete if the decision-maker can satisfactorily solve the problem at hand using that information. Incompleteness can lead to incomplete decisions, so ensuring all relevant aspects are included is essential.

- **Accessibility:** Information is useless if it is not readily accessible to decision-makers, in the desired format, when it is needed. The decision-makers must have immediate access to it whenever they need it in the preferred format. Easy access to information is essential for making educated decisions and maintaining competitiveness in the fast-paced world of today.
- **Understandable:** It must be in the right format to be useful to the decision-maker. This format can vary depending on the context, but it should align with the preferences and requirements of the recipient. Whether it's text, numbers, graphs, or multimedia, the format should support effective understanding and interpretation.

Indeed, accurate knowledge can prevent bad judgments from being made and damage the trust of people who rely on it. Therefore, it should be free of errors, mistakes, or distortions to ensure it provides a trustworthy foundation for decision-making. Irrelevant information can lead to confusion and inefficiency in decision-making, so it's crucial to ensure that it provided is pertinent and meaningful to the intended recipient.

Consequently, organizations can identify early warning indicators and also future opportunities, which represent the elementary foundations of intelligence (Fernández-Villacañas, 2020). According to Noe et al., (2017), in return through this intelligence organization can acquire a competitive advantage by improving management and leadership.

1.2. Business Intelligence

According to Seitovirta, (2011), Business Intelligence represents a management tool used by organization for managing and enhancing business information and producing knowledge and intelligence updates for operational and strategic decision-making and also to support information management.

Therefore, Pirttimäki, (2007) highlights that this information concerns the organization, its business environment including its markets, clients, competitors and also economic issues, as well as the manner of generating ideas, suggestions, and recommendations for decision makers. Due to business intelligence organization has better knowledge which improves proactive decision making, planning and business strategy. Indeed, Richards et al., (2019) argue that business intelligence refers to an activity that uses all available digital environment resources in real time to gather and analyze unimaginable data and knowledge about competitors, consumers, markets, technologies, and general social trends.

1.3. Competitive Intelligence

Fleisher & Bensoussan, (2007) argue that by integrating signals, events, perceptions, and data in patterns and observable trends related to the competitive and business environments, firms can gather actionable information about competition and the competitive environment and apply it to their planning and decision-making processes.

This process represents a competitive intelligence which leads organization to evaluate its competitive and market conditions (Pirttimäki, 2007). In the first stage, scattered fragments of raw are processed to get basic data that are later organized by competitive intelligence professionals into information which will be converted into useful format for a decision maker's intelligence needs.

In other words, through the utilization of all available digital resources, competitive intelligence has seen a significant surge in its power to act, giving it a greater capability to comprehend customer wants and competitors' behavior. According to Kristanti and Darma (2019), these actions were taken before the new Marketing 4.0 strategies in international markets.

1.4. Strategic Intelligence

Fernández-Villacañas (2016), highlights that strategic intelligence is centered on collecting, examining, and sharing strategic information that facilitates strategic decision-making. Moreover, proactive efforts are the primary emphasis of strategic intelligence, which refers to the requirements of high-level decision makers. Given that strategic information typically manifests as weak signals of qualitative data, the needs for strategic information have not been sufficiently evaluated by traditional literature.

Although the content of qualitative data may not always be evident, it should nevertheless be gathered in separate fragments and cannot be processed in the same way as explicit quantitative data. However, we note that all levels of intelligence activities can contribute to strategic intelligence.

Despite the fact that Mintzberg (1994), thought of competitive intelligence as a synonym for business intelligence, a few years later researcher define strategic intelligence as a global concept that covers the signals of all levels of intelligence: business intelligence, competitive intelligence and competition intelligence as shown in the figure below.

Figure 1.1: The different levels of Intelligence (Seitovirta, 2011)

Strategic intelligence is about having the right information in the hands of the right people at the right time so that those people are able to make informed business decisions about the future of the organization. Thus, information is the basis for strategic intelligence. Without the right information, it is difficult for employees to make the decisions needed in order to achieve and sustain market leadership (Marchand, D. & Hykes, A., 2007).

Management has to know what the future of a firm is likely to look like to influence it. Assimilation of information from various business, market, political, technological, environmental, and social sources is necessary for this.

Three essential competencies determine how well an organization collects and handles all of this data: individuals, technology, and information processes. The responsibilities that follow must to be considered by all managers as crucial aspects of their roles:

- Creating information procedures that help individuals recognize and use strategic business information;
- Providing the appropriate technology to support efficient information delivery and use;
- Creating an environment where staff members are guided and encouraged to use information.

Strategic intelligence is required to furnish an organization with the necessary data regarding its business environment, enabling it to forecast shifts, formulate suitable tactics that generate customer value, and foster future expansion and financial gains for the organization in novel markets within or across sectors. What strategic intelligence is not equal to is "Competitor" intelligence, which is focused on understanding a company's existing competition, and "Competitive" intelligence, which is prepared by small groups of intelligence analysts working for senior executives to support them make main decisions such as whether to enter a joint venture or acquire another organization.

2. Strategic Intelligence Cycle

According to Fernández-Villacañas, (2021) to achieve a manager's goals, the conversion of data into useful intelligence through a circular and repeated process is needed and that what we called strategic intelligence cycle. This process includes several steps that occur sequentially and cyclically, to generate knowledge supporting manager's decision processes through different tools and elements interacting with spaces of influence, in a dynamic interface. Strategic intelligence process includes the following several steps:

2.1. Planning:

Planning intelligence actions are the first level in the strategic intelligence process leading organization to determine the needs of the consumer, establishing requirements and developing a plan, to generate intelligence through some information in a correct manner, there must be a definite objective and must identify what is required.

2.2. Collection:

According to Clark & Lowenthal, (2016) after planning, collection of data is done from internal and external organization environment. Then, information collected are classified and validated to determine where (sources) and how (procedures) the data will be assimilated. Similarly, organization must determine previously all possible options for information collection, in view of the goals wanted and once the intelligence needs have been assessed.

2.3. Processing and Analysis:

Interpretation of the information collected generates intelligence which can be used easily during its analysis. The interpretation depends largely on the capabilities and

experience of the analyst. All reports created must meet the goal or need defined through the planning stage.

2.4. Dissemination and exploitation:

The intelligence will be distributed and the user will receive the completed intelligence product during the fourth step. Its exploitation would be impossible if its users were unable to use it or obtain it on time, making all that was done pointless and the intended outcome unachievable.

2.5. Feedback:

The procedure is evaluated and controlled at the end. This can be accomplished by providing progressive feedback, assessing if the process has met the needs of the clients, and repeating the process if any failures occurred that prevented the intelligence cycle from being successfully closed.

Out of all these tasks, analysis involves intricate cognitive processes at both the individual and organizational levels. Applying reason in this sometimes confusing, complicated, and challenging context is, in this sense, the task of analysis pertinent to strategic decision-makers. To help identify solutions that ensure the survival organization, managers need a strong set of analysis methodologies, tools, and procedures, the mainstream of which are covered in the era of data science and driven by numerical technology.

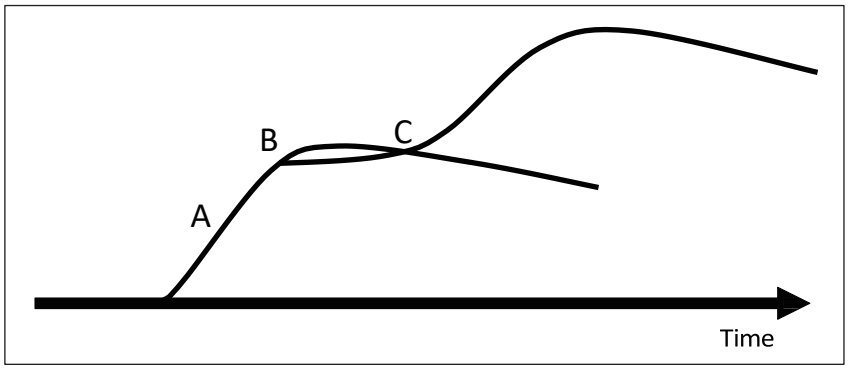
It is critical that executives not only understand the crucial role strategic intelligence can play in achieving future success but also that they continue to find ways to increase their approach to strategic intelligence.

Some questions that should be asked include:

- How well do we collect, manage, process, and use information in making strategic decisions?
- Are we able to anticipate and proactively respond to trends or opportunities to ensure future success and avoid crises?
- Are we able to adapt fast enough to successfully compete in today's dynamic environment?
- Do we have a culture that encourages employees to effectively share, manage, and use information to make informed business decisions?

The Sigmoid curves in Figure 1.2 below show the goal of strategic intelligence. For a considerable time, “sigmoid curves” have been utilized to depict a company's product cycle, which begins with the introduction of a new service or product and ends with a phase of explosive expansion until the market reaches maturity.

Figure 1.2: Sigmoid curves (Marchand, D. & Hykes, A., 2007, p 2).



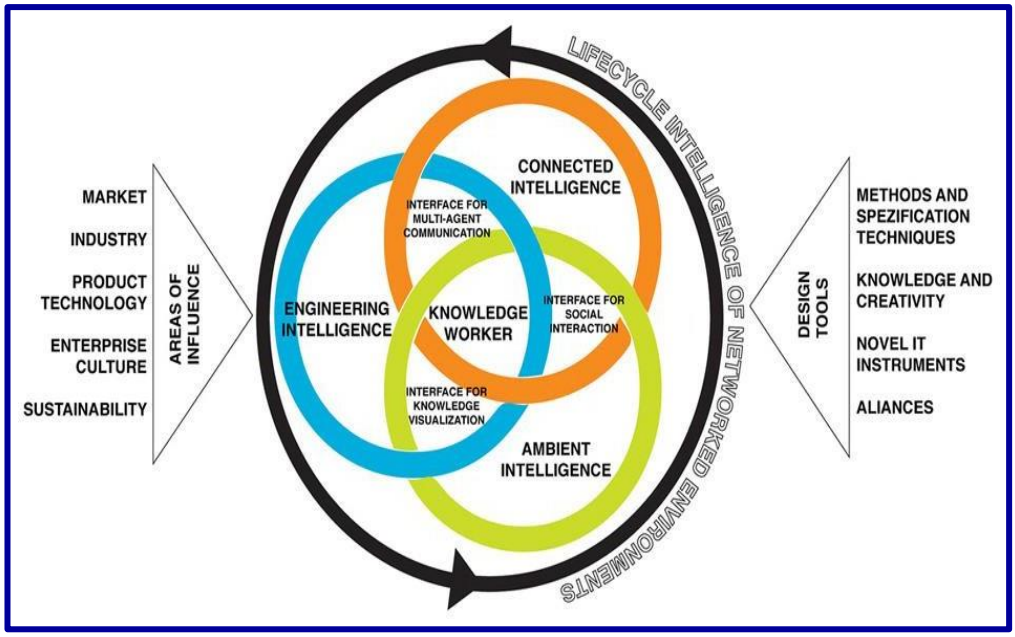
A firm's growth, profitability, and competitive position will all suffer, and its success will ultimately deteriorate, unless it can create another new product or service to reach new markets and customers and begin another journey along the Sigmoid curve.

Strategic intelligence's primary goal is to prevent a company from reaching point C, where it can clearly see the future but cannot act quickly enough, or from needing frequently restructure and reduce in order to match its resources and capabilities with the shift to new products and markets, as shown by the second curve. According to Marchand (1997), the intent is to use the time between A and B to create a strategic intelligence capability that can develop a range of inputs on the complex and dynamic changes that a company is experiencing and to anticipate the next wave of change and market opportunities before the competition.

3. Lifecycle Intelligence

Lifecycle Intelligence is a circular and repetitive process of transforming data into knowledge that can be applied to help a user or customer achieve a goal. With the interaction between engineering intelligence, connected intelligence, and ambient intelligence, the following figure illustrates the various spheres of influence, instruments, and components that contribute to the creation of worker knowledge.

Figure 1.3 : Elements integrated in the lifecycle intelligence



Planning the intelligence operations is the first step in the intelligence cycle, according to Fleisher & Bensoussan (2007). This translates into establishing what the client needs, setting expectations, and creating a strategy.

The gathering and processing of data is the second step. Data is gathered at this stage from both inside and outside the company, and data reduction and first classification are carried out. Analyzing the data is the third step. The fourth stage, which involves the dissemination of intelligence, comes after the analytical stage. Here, the client or customer is given access to the created insights. The process's evaluation and control are the last steps. This can be achieved by getting input, determining whether the procedure has met the needs of the client, and if not, perhaps beginning over. The cycle of the intelligence process can be used to summarize intelligence-related operations.

Fuld (1991), observes that information only becomes intelligence when managers evaluate it and contrast what they learn with industry models and their own experiences. As a result, assembling disparate raw data points to create rival profiles, for example, adds value and empowers managers to decide on strategic options based on accurate market knowledge. The purpose of intelligence operations is to give managers judgments and consequences so they may decide.

Consequently, information obtained from processing data is an underpinning of strategic intelligence. Moreover, according to Seitovirta, Fleisher & Bensoussan (2007), this intelligence analysis is done at different organizational levels within an organization. Generally, it is grouped into strategic, tactical and operational levels.

4. Intelligence analysis at differing organizational levels

4.1. At the strategic level

Strategic intelligence analysis is arguably the most important level of intelligence because it creates a framework within which other forms of intelligence collection and analysis take place. It aids in the identification and comprehension of significant trends, patterns, and offers a comprehensive picture of the environmental opportunities and dangers. Furthermore, it offers direction for tactical and operational evaluations, and in turn, the work done at the tactical and operational levels influences the direction of strategic intelligence analysis. Gaining in maturity, strategic level analysis provides a foundation for predictive evaluations that can alert stakeholders to possible high-impact initiatives.

4.2. At the tactical level

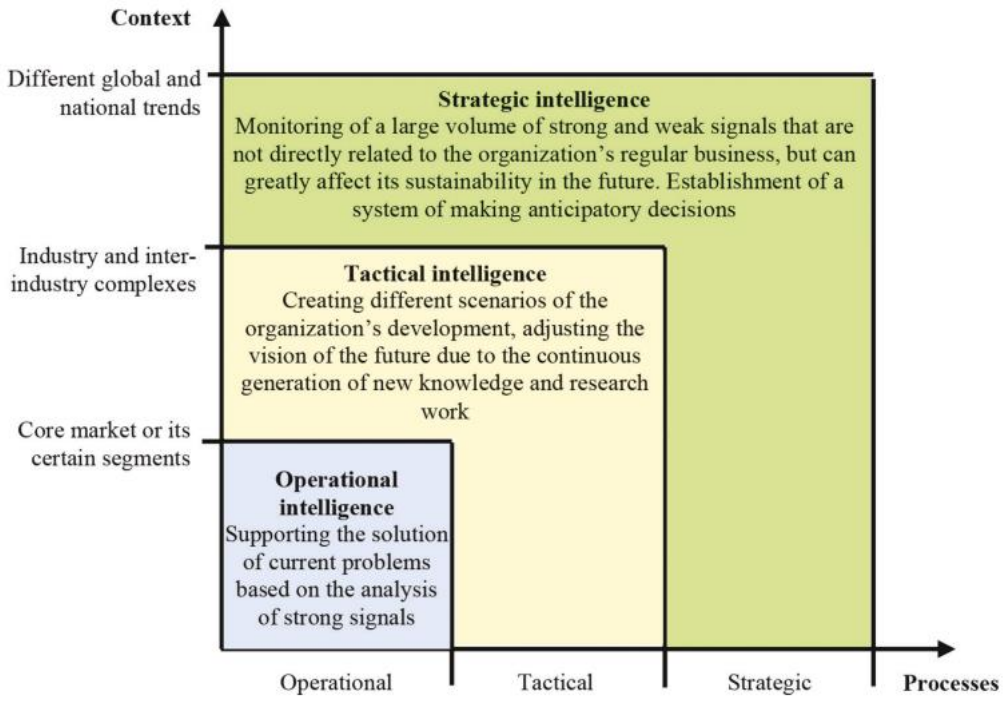
According to Fleisher & Bensoussan (2007), tactical intelligence analysis, which makes evaluations to support strategic intelligence analysis, is a crucial and vital link between macro and micro-level analysis.

4.3. At the operational level

Operational intelligence analysis, which focuses on particular instances and events, is the basic level of intelligence analysis. Operational intelligence analysis has more immediate, but transient, benefits by assisting the analyst in understanding specific events in real-time.

Figure 1.4: Different Intelligence types associated with organizational level within organization

(Gitelman, L.D., et al., 2021, p 297)



These types of the organization's intelligence have different process orientation, scale of the analyzed context, and tools as shown in the figure above.

However, Gitelman, L.D., et al., (2021), argue that it's important to emphasize that strategic intelligence cannot exist without advanced operational and tactical intelligence. A highly developed information infrastructure defining the analytical potential is characterized by the analytics' horizontal coverage of the internal processes and implying the ability of analytical systems to react to trends, strong and weak signals in the core and adjacent markets, in the industries and inter-industry complexes, and finally in the global environment as a whole.

Chapter 2: Historical Evolution of Strategic Intelligence, Typology, and Characteristics

Strategic intelligence has always been informally present in firms. It involves actively monitoring the external environment. In today's highly competitive environment, this practice is crucial for effective strategic management. Strategic intelligence becomes especially important when the external environment becomes more uncertain for boosting an organization's competitiveness and sustainability.

In this chapter we present the different evolution stages of the Strategic Intelligence concept as practiced within the organization. Then, we define the types of strategic intelligence associated to the Porter’s five Forces analysis and its characteristics.

1. Historical Evolution of the Strategic Intelligence Approach

1.1. Traditional Approach

The traditional method of gathering strategic intelligence is based on the standard military operational intelligence methodology. Under this paradigm, businesses work as hierarchical command and control structures, with the "need to know" principle guiding information sharing and utilization and supporting the functional division of labor.

Information and analyses are prepared by specialists assigned to particular research/topic areas or silos in response to requests from the command center's officers. The officers don't typically use this data as a tool for organizational learning, but rather as the foundation for one-time strategic decisions.

The information is typically never fully absorbed once it reaches the cops. Most data is defined as "classified" and only available to those who require it. Officers only notice the risks involved with potentially leaking information; they are unaware of the potential benefits of sharing information. Because of this, specialists are unable to perceive the wider picture and are generally unaware of what is going on outside of their area of expertise.

Nowadays, a lot of businesses still base their strategic intelligence on a small number of important experts who create reports that serve as a guide for top management when making choices about major investments like acquisitions and mergers or the creation of new products. These experts gather data that is often externally focused and ready for executive decision-making on a one-time basis, much like the military model.

A strategic planning group has been used by some organizations, including Shell, to conduct research on future trends and then use the results to create scenarios that are linked to the corporate strategic plan.

Companies that make consumer goods, such as Procter and Gamble, rely on its marketing division to conduct surveys on consumer demands and industry trends. Certain companies, like pharmaceutical companies, rely on the product groups to collect targeted product intelligence that is then sent up to the executive group.

However, the sharing of potentially significant information across product lines or even fields of research and development may be limited by this functional approach, which can also generate a vertical concentration.

A lot of larger organizations, including pharmaceutical makers, give the corporate or R&D library or information center, which gathers and disseminates published materials like new technology assessments, the task of keeping an eye on emerging trends. Others rely on market forecasters or specialized research firms, believing that these outsiders may provide objective analysis and new insights into market, technology, and product trends.

organizations with a matrix structure and many divisions, locations, and product lines typically have more trouble disseminating this kind of data internally. These organizations are therefore usually caught up in the functional approach to strategic intelligence.

Several of the industry's top organizations are now adopting various presumptions regarding strategic intelligence, even though a lot of organizations still employ the functional method to learn about the future. Instead of seeing it as a function at all, they now see it as a systematic learning process and an ongoing business activity that shapes the future by offering a means of persistently challenging corporate taboos, blind spots, and hidden assumptions. It also helps to create asymmetries in the competitive landscape that give organizations a competitive advantage.

According to this new model, intelligence is a broad management responsibility that should be ingrained in managers' information-oriented behavior and learning culture across the entire organization, rather than being seen as a specialist or executive obligation. These organizations are changing or adding to the tasks and responsibilities of information administrators.

In order to maintain a competitive edge, organizations like Intel have mastered the art of operating in a "continuous discovery mode," producing new products faster and utilizing strategic intelligence across the board. According to Marchand (2000), these firms prioritize information management investments that encourage people mobilization and collaborative work procedures to exchange knowledge and foster company-wide discovery and experimentation.

1.2. Functional Approach

As previously said, functionally oriented firms have many pools of internal and external intelligence that the functional departments gather and occasionally use for decision-making; this is how the functional approach is analogous to the conventional military model.

For example:

- the sales department collects information on customer contacts, transactions, and services;
- the marketing department conducts surveys on market trends and customer satisfaction;
- the R&D group analyzes technology developments and new product ideas;
- the manufacturing function focuses on process innovations and product engineering;
- and the human resource department monitors workforce changes and recruitment.

In a functionally oriented firm, strategic information is frequently limited to these discrete data sets, to which particular groups have applied their own perspectives regarding the company's trajectory and success strategies.

These groups may consist of a few experts or different departments that gather information about competition, product, market, etc. based on the executive team's demands; in these kinds of organizations, information is rarely shared and utilized extensively among other managers at different levels.

To sharing and using strategic intelligence to shape the future, there are three barriers in the functional approach:

1. The organization's departments or functions shape and interpret the data pools, thus a more comprehensive management analysis or cross-functional interpretation of the data is never possible.
2. Secondly, people's blind spots, concealed presumptions, and taboos influence how the data is interpreted. There is no encouragement or justification for defying the status quo.
3. Finally, because of a culture of information advertisement, there is often no clear procedure or set of useful instruments for information sharing across functions. Even when they are, they might not be used.

It is hardly unexpected that a large number of managers in functionally oriented businesses believe the application of strategic intelligence is restricted to tasks like competitor analysis, acquisition evaluations, and assessments of new technologies.

1.3. Process Approach

The "process" approach depends on a completely distinct set of principles:

- Firstly, not all information or decision-making authority is held by the company's top management, and strategic intelligence should be arranged to meet the requirements of the business unit and other general managers.
- Secondly, a variety of future interpretations and points of view are fostered by sharing strategic intelligence rather than centrally processing it.
- Thirdly, teams of managers working on shared challenges and problems can access a variety of internal and external intelligence sources at any time and from any location with the help of information management software.
- Fourthly, the present difficulty is to disseminate strategic intelligence globally and subsequently throughout the organization so that it is in line with cross-functional approaches to assigning responsibilities for action, as opposed to limiting it to the company's top executives or having information silos.

Therefore, rather than being added on as an afterthought, the strategic intelligence model needs to be established in an organization's core information culture. According to Alomian et al., (2019) and Maccoby, (2015), Strategic Intelligence is a conceptual system that assists leaders in leading change and involves tools and qualities to develop foresight, visioning, system thinking, partnering, motivating, and empowering as shown in the figure below.

The alignment of these components and their achievement is dependent on contextual challenges and relationships, as well as on the personalities and philosophies of leaders (Maccoby, 2015; Maccoby & Scudder, 2011).

Based on mainstream literature, the concept and importance of strategic intelligence are illustrated by its role as a strategic instrument that operates simultaneously with several functionalities within an interrelated system that employs organizations' core knowledge and leaders' mindsets to provide decision-makers with intelligent information of strategic value in an actionable form, enabling them to make a proper strategic decision.

Figure 2.1: Strategic Intelligence Model (Maccoby & Scudder, 2011)

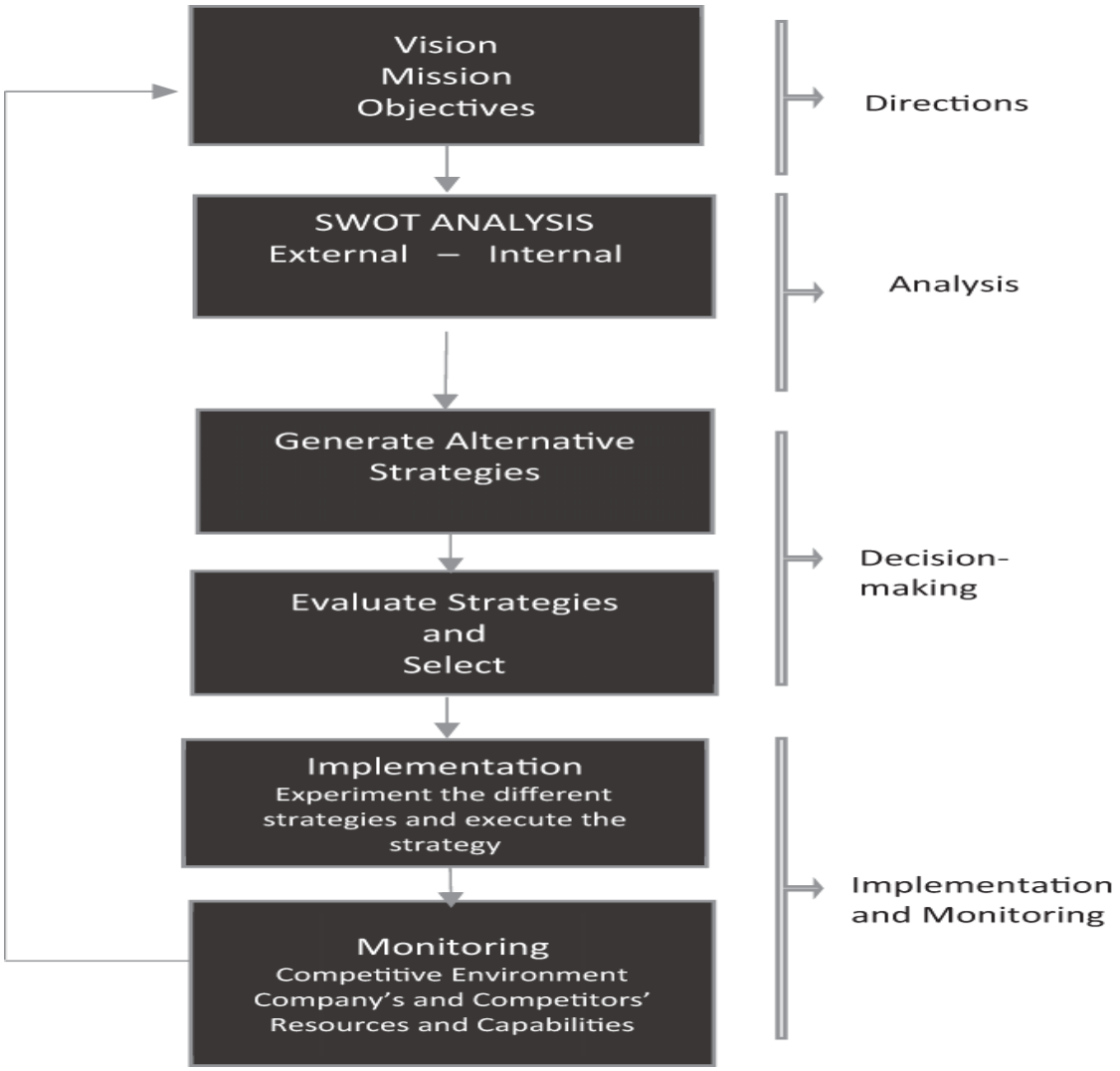
The various strategic intelligence dimensions, such as foresight, visioning with system thinking, partnering, motivating, intuition, and creativity, will be developed in the next chapters of this document.

2. Strategic Intelligence and Strategy Formulation Process

The markets where organizations activate nowadays are becoming ever more turbulent and uncertain due to the rapid pace of technological change (Iansiti and Euchner, 2018; Trabucchi et al., 2019). This is why gathering strategic intelligence is increasingly relevant for organizations (Du Plessis and Gulwa, 2016).

There are several types of Strategic Intelligence regarding the different functions within an organization. Before presenting the main types of Strategic Intelligence, it's important to highlight that monitoring practices are integrated into the strategic vision of the organization as we can see in the scheme below.

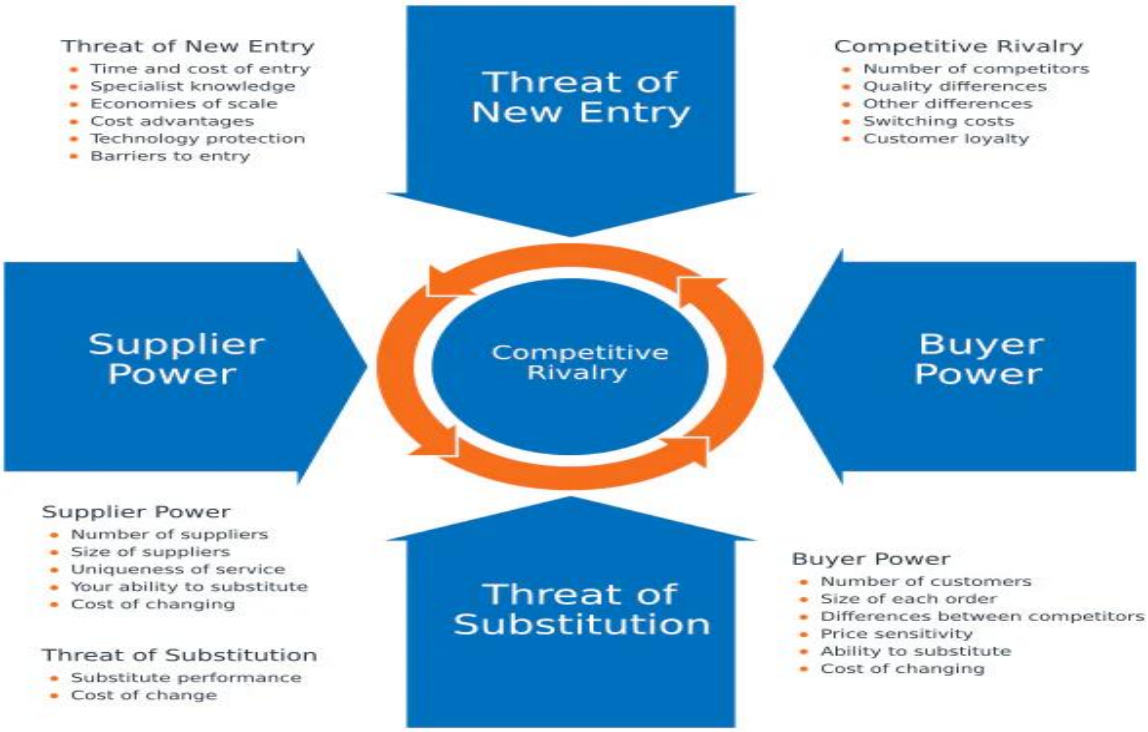
Figure 2.2: Strategy formulation process (Armstrong, 1982)



3. Porter's Five Forces analysis

According to Porter M. (1979), the five-force model analyzes the competitive environment of an industry, looking at its intensity and the bargaining power of suppliers, threat of new entrants, bargaining power of buyers, threat of new substitutes, and competitive rivalry. The figure below presents this model.

Figure 2.3: Porter's Five Forces Analysis (Porter, M., 1979)



This framework helps strategists understand what makes an industry profitable and provides insights needed to make strategic choices.

Besides, several types of strategic intelligence can be determined for each kind of these five forces, namely:

- Competitive Intelligence;
- Marketing Intelligence;
- Technology Intelligence;
- Environmental Intelligence;
- And Governemental Intelligence.

The following figure shows the several types of strategic intelligence.

Figure 2.4: Types of Strategic Intelligence associated with the Porter's 5 Forces

3.1. Competitive Intelligence:

According to Fuld, (1995), organizations have virtually similar access to information, but it is the ones that convert such information into actionable intelligence that will end up winning the game.

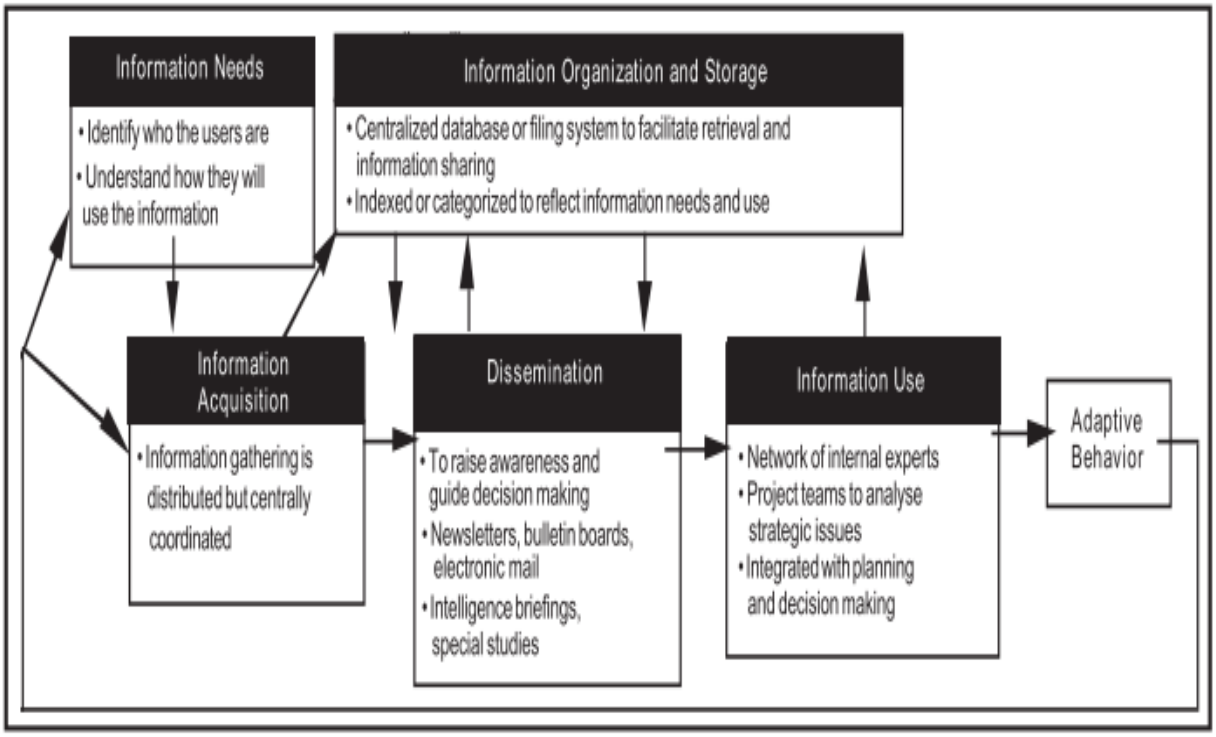
In other words, through this process, actionable information about the firm and its external environment is generated to help firms make market-related decisions (De Almeida et al., 2016; Kahaner, 1996; Prescott, 1995). Its relevance goes beyond developing competitive advantage (Calof et al., 2008), but rather toward enhancing the sustainability of a business (Cosway, 2018).

Organizations need to assess current and future competitive landscapes to survive, namely, data, information, knowledge, and mostly, intelligence become crucial resources (Markovich et al., 2019).

Indeed, organizations need systems and processes to gather and analyze reliable, relevant, and timely information about competitors and markets that is available in vast amounts (Trim and Lee, 2008). Competitive intelligence deals with current or potential competitors and new entrants to the market (which may link their appearance to the emergence of substitute products). The information collected can cover very diverse areas:

- range of competing products;
- distribution channels;
- cost analysis;
- organization and corporate culture;
- evaluation of general management;
- business portfolio of the company.

Figure 2.5: Steps for Competitive Intelligence (Choo, 2001, p. 237).



At the beginning of the competitive Intelligence process, the organization determines information needs by identifying users and how they will use the information, then information gathering is distributed and centrally coordinated. A centralized database facilitates retrieval and information sharing by dissemination to raise awareness and guide decision-making.

Information used by the network of internal experts leads the organization to determine an adaptive behavior and the new information needs.

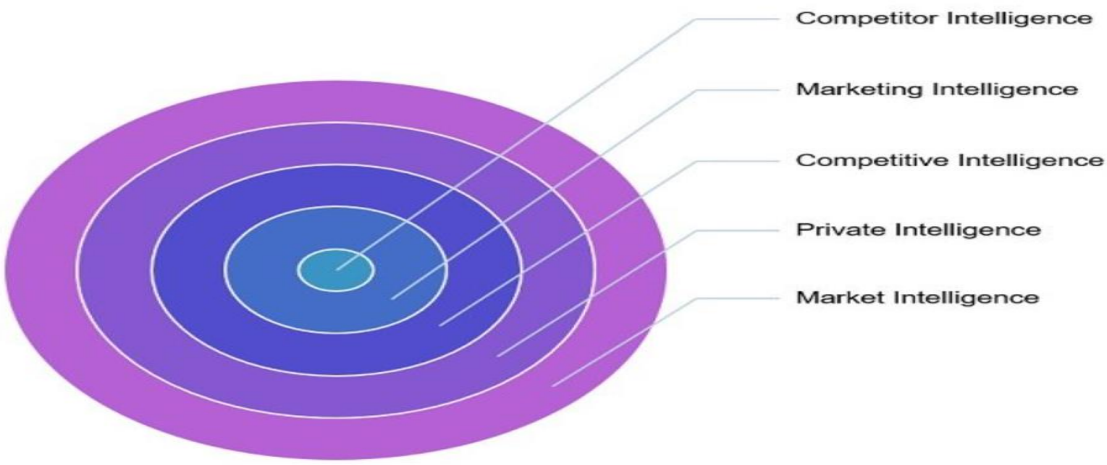
3.2. Marketing Intelligence

Marketing Intelligence concerns customers or markets. This involves taking into consideration the evolving needs of customers. At a time of the development of loyalty techniques, commercial monitoring involves the monitoring and analysis of complaints. This is also interested in suppliers. This monitoring is developing particularly in purchasing departments. The search for information is certainly focused on the cost of services, but is also interested in different guarantees such as the following elements:

- delivery time;
- continuity of the relationship;
- quality of products and services;
- adaptability.

The term "market intelligence" describes the data that an organization gathers from various sources within the market it serves or hopes to enter. Customers, competitors, and market trends can all benefit from this information. It provides direction for the group's choice and leads them to a competitive advantage over rivals, provides them with information about the target market, and assesses insights into their range of products. The figure below presents the difference between Marketing Intelligence and Market Intelligence which is a wider concept. In other words, the Marketing Intelligence System (MIS) is among the subsystems of the Market Information System providing information about the external environment.

Figure 2.6: Marketing Intelligence as a part of Market Intelligence System



Every organization tries to inculcate market intelligence in its employees by implementing the following steps:

1. **Training and motivation programs for the Sales Force**

To motivate the Sales Force, multiple training programs are offered. They are the ones who have direct communication with the final consumers. Then, they can gather all pertinent data regarding the product as well as the experiences of customers who have used it. Encouraging the Sales Force to offer insightful criticism and recommendations is one method of obtaining market intelligence. Additionally, they can offer insights into the market prospects that are now present. The organization can create workable plans using this information.

2. **Encouraging Distributors and Retailers to seek Market Intelligence**

Organizations can schedule a professional to come into their showrooms and retail locations. This expert examines how satisfied customers are with the goods and services. They then give management the same report. Retailers and service providers send their people in disguise to act as clients. They examine the quality of the goods or services and the efficiency with which staff members respond to client questions.

3. **Keeping a check on the Competitors**

Companies monitor the movements and activities of their competitors to survive in the market. The internet is a useful tool in this situation because it provides comprehensive information about competitors:

- Variety of products and services.
- Price
- Costs
- Client feedback

This information is available to the organization via the rival's website or applications. They can then do a comparative analysis using this data.

4. **Setting up Customer Suggestion Panel**

Internal marketing intelligence is used by businesses to compile a list of regular customers who purchase their products. From this list, a panel of experts is assembled to advise prospective buyers on the positive and negative aspects of the product. This approach is helpful because consumers tend to rely heavily on the recommendations of others before trying a new product.

5. **Taking advantage of government Data Resources**

It's among the most trusted methods to learn about the market. Therefore, organizations can take advantage of the population examination data. It provides data on demographics, patterns, population density, and other topics. Additionally, the firm can use this information to create wise market plans. Information shared periodically by government agencies aids organizations in learning about the prevailing market trends. This information is related to several eras such as:

- The degree of literacy;
- Government-set agricultural prices and production;
- Inflation;
- and recession.

6. **Purchasing information from Outside Suppliers**

Organizations can also buy information from research agencies specialized in the field of market research. After that, organizations can prepare reports about other market companies or competitors. The agencies give information about the competitor's products and services to help organizations in designing market plans.

7. **Using customer feedback**

Customer feedback is the most popular and readily accessible kind of market intelligence. Consumers typically post reviews of the products they have tried on a variety of spaces. These platforms consist of the following:

- Social media sites,
- Forums,
- E-commerce websites,
- and the company's website or applications.

Additionally, organizations can receive feedback in person. One way they can accomplish this is by having client's comprehensive a form following their use of the services.

Typically, stylists and restaurants utilize it. Because the customer writes the review or feedback themselves, it is more reliable.

The figure below presents the different steps of the Market Intelligence implementation.

Figure 2.7: Market Intelligence Implementation Steps

3.3. Technology Intelligence

Authors have cited Technology Intelligence (TI) concepts since the first appearance of Competitive Intelligence in the literature with Ansoff (1975). One of the earliest appearances of the term Technology Intelligence was in Cooper & Schendel (1976) when the authors studied companies that face threats from new technology. Since then, technology surprises have been discussed by authors such as Herring (1999).

Technology Intelligence focuses on the observation and analysis of the scientific, technical, and technological environment and present and future economic impacts, to deduce threats and development opportunities. Technology intelligence has been defined as “the capture and delivery of technological information as part of the process whereby an organization develops an awareness of technological threats and opportunities” (Kostoff, R.N. et al., 2001).

Moreover, the practice of avoiding being caught off guard by competitors' technological advancements through a variety of technology monitoring techniques is known as "Technical Competitive Intelligence," according to Prescott & Miller (2002). They fill the gap in the literature on this topic by including several case studies in their book. "Activities that support the decision-making of technological and general management concerns by taking advantage

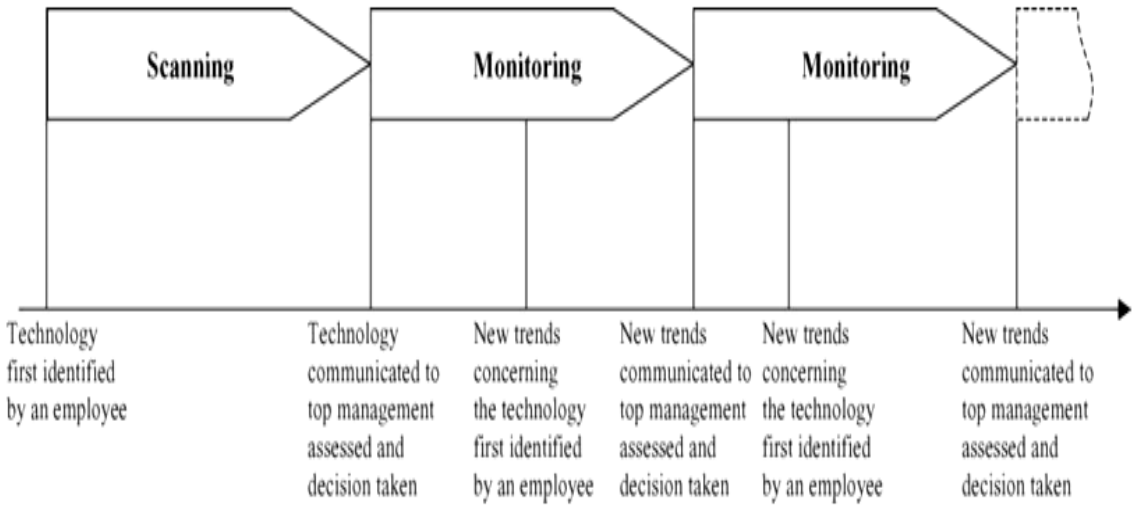
of a well-timed preparation of relevant information on technological facts and trends (opportunities and threats) of the organization's environment through collection, analysis, and dissemination" is how Schuh & Grawatsch, (2004, p. 3) defined technology intelligence.

To identify, as comprehensively as possible, all options for introducing new, external technologies/innovations in the organization, it becomes necessary to analyze large amounts of technology data (Porter, A.L.,2005), originating from disparate sources outside the organization. The use of appropriate IT tools and extensive data mining analyses, such as text mining (Trippe A.J.,2003), can generate actionable technology intelligence. Technology intelligence can have many uses (e.g. in strategy, marketing, or human resources).

According to Lichtenthaler (2004), the Technology Intelligence process includes two steps, the first for scanning and the second for monitoring as shown in the figure below.

- During the first step, employees become aware of new technology and communicate it to the top management, who discusses its relevance.
- The second step, monitoring, may be run several times as the now-known technology is observed and new trends are being identified.

Figure 2.8: Technology Intelligence Process (Lichtenthaler, 2004, p334)



The way the Technology Intelligence team is set up within an organization has a direct impact on its performance. Three structures can be used to organize technology intelligence: hierarchical; participative; and hybrid (Lichtenthaler, 2007).

1. When the TI is structured hierarchically, individual researchers become aware of new technology by actively testing it. Then, for decision-making, the new trend is reported to experts in technology intelligence or directly to upper management. This model highlights scientific aspects of the technology and usually over or under-evaluates technologies.
2. The participatory model, mid-management powerfully contributes to the technology discussion with the researcher. Only after this discussion, the matter is taken to the top management. Regularly, this model does not communicate intelligence results to top management efficiently.
3. A combination of the last two models is the third one, called hybrid. With the assistance of TI specialists, trends are evaluated by mid-management, and decisions are based on newfound knowledge. Making judgments with this methodology is rapid and efficient.

3.4. Governmental Intelligence

This type of strategic intelligence deals in particular with subjects specific to institutions and public administrations. These themes can cover different fields of interest and in certain cases be close to what is done in business. In general, the themes relate to:

- public policies;
- government strategies;
- intervention plans, programs;
- laws and regulations;
- analyzes and evaluations of policies or programs.

3.5. Environmental Intelligence

This type of intelligence encompasses the rest of an organization's environment which includes elements of the political, social, cultural, and legal environment. Depending on the type of organization, environmental intelligence also called global or societal intelligence will focus on different aspects of economic life. This type of intelligence requires solid planning because its targets can touch on a wide range of themes.

4. Dimensions of strategic intelligence

According to Alomian, N.R et al. (2019), strategic intelligence is characterized by the main following dimensions.

4.1. Foresight

Foresight is the ability to understand and recognize the forces that shape the future. The young programmer, Bill Gates, understood this when he understood what the computer could become and what it is meant to get a DOS job for the first IBM PC. He had also shown that he recognized the importance of partnership with an organization that will affect the future, (Macopee, 2011).

4.2. Visioning

Vision is the process of creating an ideal social work system for a purpose. The leader is not only required to describe the future, but also to transfer workers to him, too, and involve everyone in important decisions. It's a process that happens over time. It is necessary to involve people in understanding the ideal, and to force them to move cooperatively in this direction, (Macbooky, Margolis and Andreik Harvey, 2008).

4.3. Partnership

This is a logical orientation between companies and organizations that recognize the strategic advantage of joint action. The business partnership is "developing successful and long-term strategic relationships between customers and suppliers, based on best practices and sustainable competitive advantage" (Lehane, 2011).

4.4. Intuition

Intuitive intelligence is thinking beyond the boundaries of science and analytics. It connects the realms of reality, imagination, mind, instinct, and physical and spiritual dimensions of human existence. Intuitive intelligence is not linear, a key skill for success in the new economy, an economy driven by turmoil and constant chaos.

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4.6. Creativity

Creative intelligence is the invention of new tools that enable the organization to enter and stay in the market, and creativity in providing products to customers.

5. Strategic Intelligence Objectives and Challenges

The table below presents the several objectives and challenges of Strategic Intelligence.

Table 2.1: Strategic Intelligence Objectives and Challenges

Strategic Intelligence Objectives	Strategic Intelligence Challenges
➢ Choose a competitive positioning; ➢ Detect avenues of innovation; ➢ Facilitate access to information by eliminating the superfluous and improving the distribution circuit; ➢ Protect organization from threats; ➢ Develop the business; ➢ Better understanding of external environment and anticipate trends; ➢ Identify new business development avenues.	➢ Customer needs are changing very quickly; ➢ Products are renewed very quickly; ➢ New technologies are omnipresent and contribute to this speed of evolution; ➢ Competitors and markets are more and more numerous and all over the planet; ➢ Standards and legislation are complex and constantly changing; ➢ Cultures and lifestyles change and evolve.

Chapter 3: Organizational Behavior and the Analyst's Role

Strategic Intelligence is an emerging field of business consulting, which aims to undertake the task of revealing large, complex, or complicated issues of transformation in a more understandable form (Kuosa, 2011). Through SI, firms can obtain useful information about their business environment which are needed to anticipate changes and design appropriate strategies that will create value and build the future growth of profitability for the new markets within or in other industries (Pellissier and Kruger, 2011). Having a clear vision about the venture's future can provide founders with a roadmap for developing their firm under the uncertainty characterizing business environments.

1. Organizational Behavior and Strategic Intelligence

1.1. Organizational Behavior Definition

Stralser S., (2004), had given a definition of organizational behavior in his well-known book "MBA in a day what you would learn at top tier business schools". According to this researcher organizational behavior represents the study of how individuals and groups perform together within an organization. It focuses on the best way to manage individuals, groups, organizations, and processes. Organizational behavior is an extensive topic including Management practices such as strategic intelligence, theories of motivation, and the fundamentals of organizational structure and design.

The work of managers can be categorized into four different activities: planning, organizing, leading, and controlling (Robbins & Timothy, 2019), besides Organizational Behavior (OB) is a field of study that investigates the impact that individuals, groups, and structure have on behavior within organizations for the purpose of applying such knowledge toward improving an organization's effectiveness.

"OB is a field of study, meaning that it is a distinct area of expertise with a common body of knowledge. It focuses on three determinants of behavior in organizations: individuals, groups, and structure. In addition, OB applies the knowledge gained about individuals, groups, and the effect of structure on behavior in order to make organizations work more effect of structure on behavior in order to make organizations work more effectively.

To sum up our definition, OB is the study of what people do in organization and the way their behavior affects the organization's performance. Because OB is concerned specifically with employment-related situations, it examines behavior in the context of job satisfaction, absenteeism, employment turnover, productivity, human performance,

and management. Although debate exists about the relative importance of each, OB includes these core topics according to Colquitt, A., Lepine, & wesson, 2019, p. 06)

- Motivation
- Leader behavior and power
- Interpersonal communication
- Group structure and processes
- Attitude development and perception
- Change processes
- Conflict and negotiation
- Work design

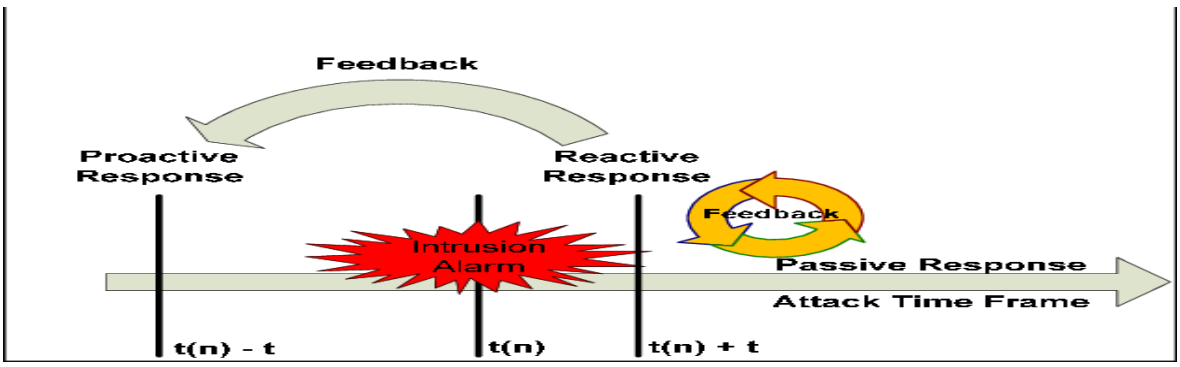
Organizations as a bounded system of structured social interaction featuring authority relations, communication systems, and the use of incentives, usually have a hierarchical form, and formal legal status and are recognized by states and governments. In this sense, organizational behavior encompasses individual, group, and structural dynamics. Understanding and controlling these variables is crucial to managing and developing a successful organization. In the case of Strategic intelligence, we focus on the typology presented in the table below.

1.2. Organizational behavior associated with Strategic Intelligence

Organizational behavior can be divided into several different categories and stages related to the time of response as illustrated in the figure below.

Figure 3.1: The different organizational behavior regarding to response time

(Anuar N.B., 2010)

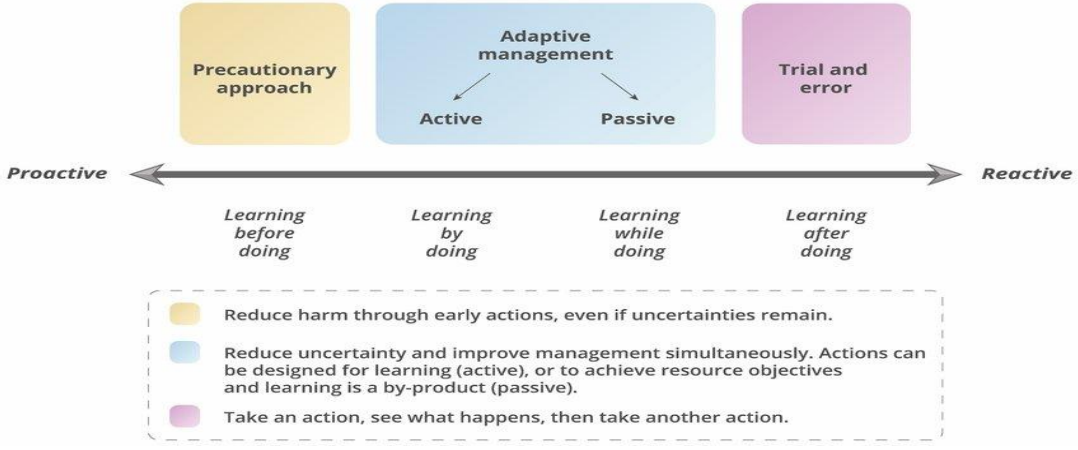


In the figure, the time of response includes three main lines t(n)-t, t(n), and t(n)+t, where t(n) denotes the time of the intrusion alarm or crisis. Based on t(n), the following stages appear:

1. The stage before t(n) – t is supposed as a normal stage where no signal of intrusion alarm is detected by the organization.
2. Before intrusion alarm, between t(n) - t and t(n) organizations adopt a proactive response through strategic intelligence leading managers to detect weak signals from intrusion alarms in the external environment. In this case, organization strategy is part of an approach that is aimed at resolving possible future situations and appreciating some opportunities in full. An organization influences the market and acts on its environment by learning before doing.
3. After intrusion alarm, in between t(n) and t(n) + t organization has a reactive response focusing on control over existing policies and determines the change of course in case of a crisis event only. Organization stays alert, monitors its environment, avoids dangers, and takes advantages of them by learning after doing.
4. After t(n) + t: refers to a stage after reactive response and organization has a passive behavior and does nothing.

Active adaptive management prioritizes learning by deliberately designing and testing management hypotheses to reduce uncertainty, while passive adaptive management prioritizes achieving management objectives and learning is a by-product (Walters 1986). Similar to the precautionary approach, active adaptive management prioritizes learning about system responses to management in a proactive manner as shown in the figure below. Active adaptive management will be an important element of environmental management and strategic intelligence to account for uncertainties that cannot be sufficiently reduced in environment.

Figure 3.2: Adaptive Management and Proactive Vision (Hyman et al., 2021)

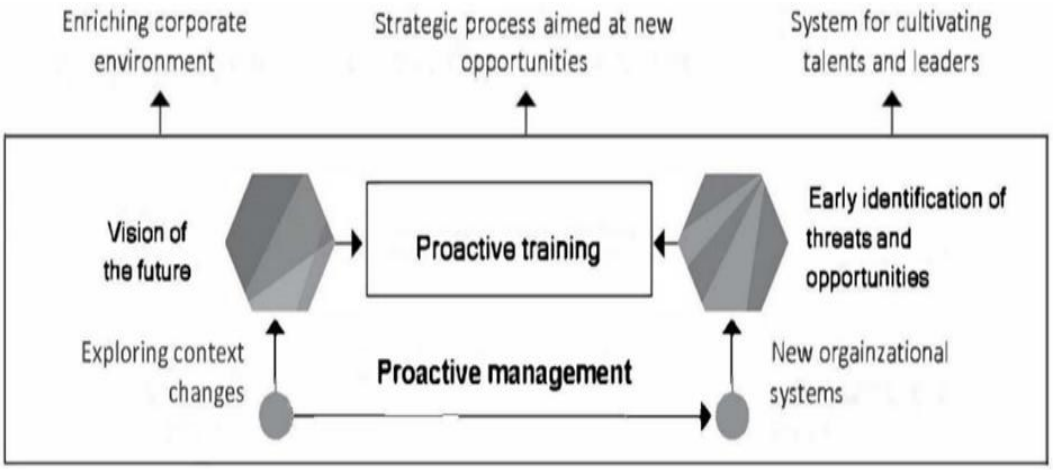


2. Focus on Anticipatory Management

The ability of an organization to predict the future and take proactive measures is referred to as strategic intelligence. Its significance grows significantly when significant changes are implemented to enhance the organization's long-term viability. For instance, during the digital transformation, strategic intelligence emerges as a key competency. Conversely, the development of strategic intelligence necessitates the use of specialized management systems like preparedness to master the necessary competencies and anticipatory management. In other words, the establishment of strategic intelligence requires the introduction of specialized management systems such as anticipatory management as shown in the figure below.

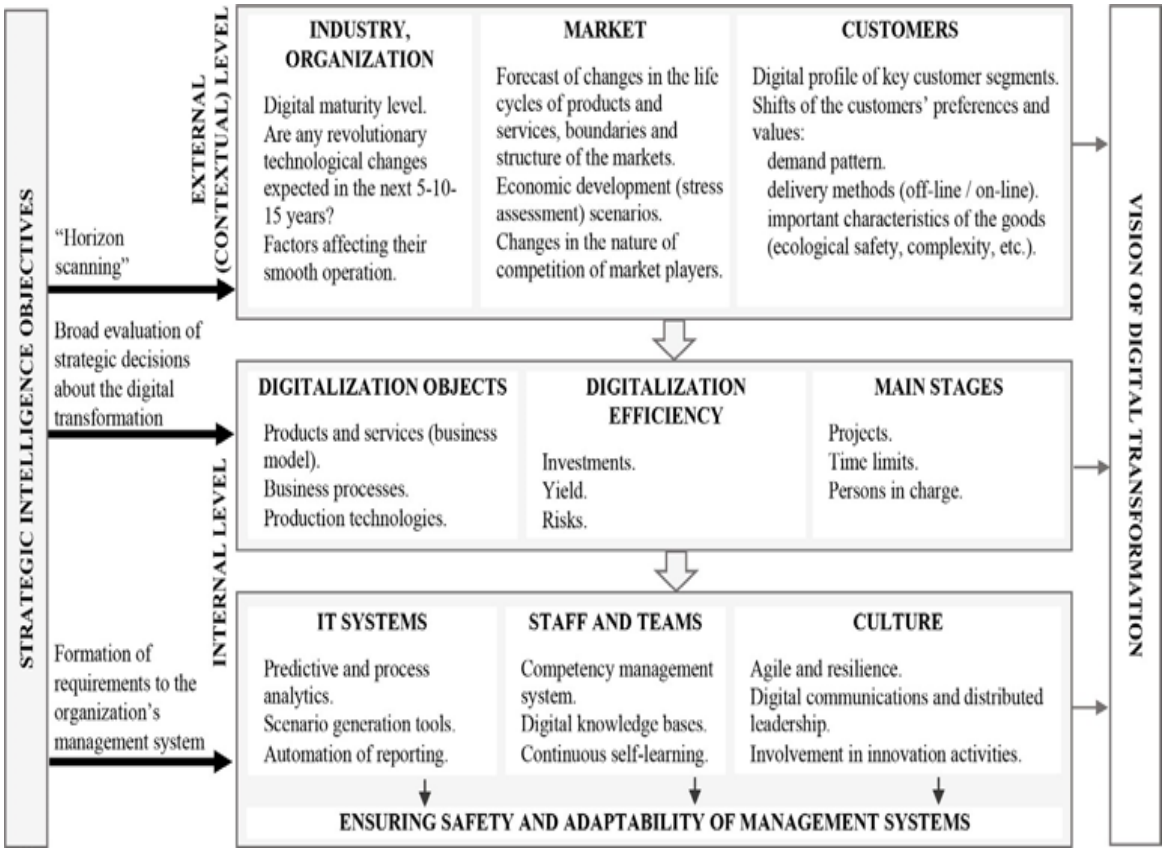
Figure 3.3: Key Element of Anticipatory Management Model

(Gitelman, L.D. et al., 2021, p 300)



The role that strategic intelligence plays, supported by the anticipatory management system, in tackling the challenges associated with digital transformation is illustrated in the following figure.

Figure 3.4: Strategic intelligence objectives during digital transformation (Gitelman, L.D. et al., 2021, p 300)



The anticipatory management model's industry level translates into a state policy (strategy) that specifies the markets and the scientific and technological advancement of the industry in question, as well as management mechanisms for production safety, dependability, and environmental friendliness, merger and acquisition regulations, and product prices (for monopolists). This strategy stands out for its notable innovativeness, capacity to generate probability estimates, and consideration of potential risks and challenges.

The model generates a strategy for comprehensive support and functional efficiency building on all operational levels, minimizing reliance on external factors, both at the corporate and production site levels.

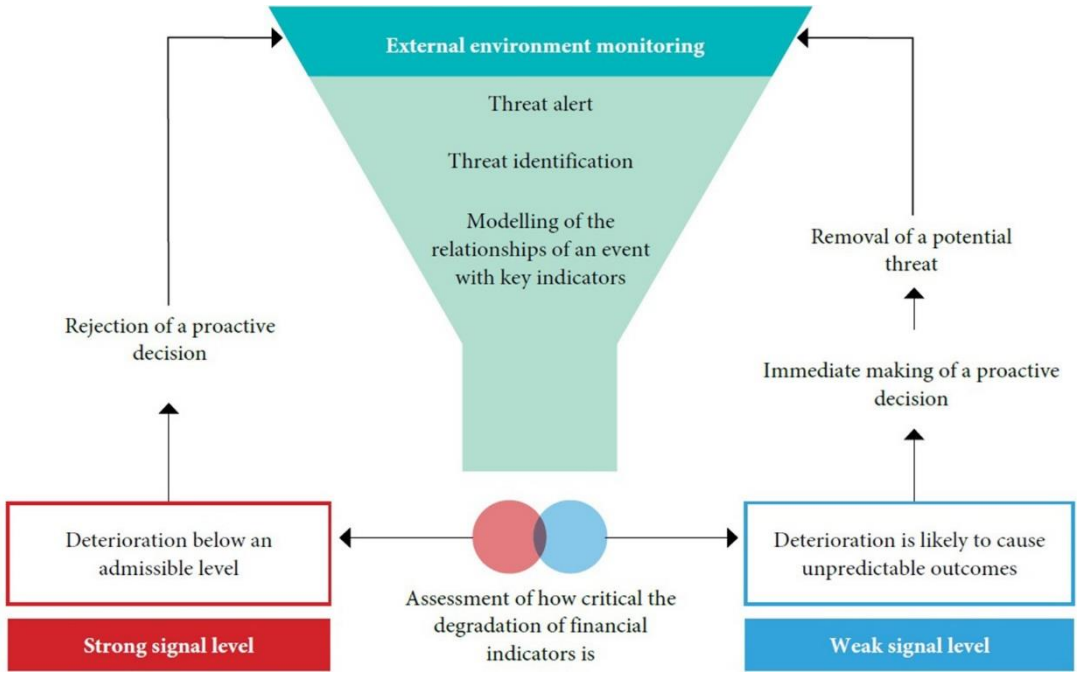
The efficiency and quality of employing all available resources; including tools, energy and fuel, capital and investments, and human resources; should receive special consideration. This work needs to be done regularly to update production. It should be based on the ongoing monitoring of the complicated status of the facilities and the advancements in science and technology.

Consequently, the development management model's methodological foundation is the notion of anticipatory management, which also aims to expand the organization's strategic flexibility while ensuring the sustainability of development.

2.1.Proactive management Model taking into consideration weak signals

Managers and employees need to be willing to adapt to changing situations and take calculated risks to solve management issues such as weak signals. This requires an established surveillance system that is sensitive to warning information as shown in the figure below.

Figure 3.5: Anticipatory management process structure



The most significant difficulty in understanding weak signals is finding exactly what information is contained in them. This is because managers have conservative mental models that are resistant to change.

By adhering to this plan, one can react to new dangers appropriately and quickly. Monitoring, however, typically takes place in a company's strategic focus area and does not eliminate the possibility of overlooking weak signals that emerge in the periphery. New technologies that become accessible to customers may have a significant impact on the industries of power engineering companies, for example. To facilitate energy transactions between consumers without requiring a connection to market infrastructure, this refers to technology such as smart power consumption metering systems, power accumulators, and applications. Their need for electric power either drastically drops or rises as a result. These kinds of changes happen all the time, but monitoring only records a small percentage of them.

The methodological foundation for anticipatory management was made possible by the power engineering industry's use of the methodology through the development of standard algorithms for decision-making.

2.2.Strategic intelligence is shaped by anticipatory training

Continuous anticipatory training is a prerequisite for anticipatory management. This phrase describes a structured process of acquiring the information and skills necessary to address challenges in the future while adhering to national development plans and global trends.

The goal of anticipatory training for experts is to equip them with the knowledge they will need to operate in engineering, technical, business, and socio-humanistic systems that may be developed in the near future. These systems will be based on new principles and will be operating in an environment that is highly uncertain and turbulent.

The contemporary organization needs extensive analytical assistance for business processes and solutions, and this can only be provided if it has a high potential for strategic intelligence and a certain degree of digital maturity. In turn, the effectiveness and rigor of the organization's and its partners' research processes, as well as the prompt application of newly acquired knowledge in training, determine the degree of strategic intelligence, its expansion, and updates.

The relevance of training's anticipatory nature is guaranteed by this requirement. That is the reason we include a unique research component in our anticipatory training programs. This component is based on ongoing context analysis of the possibilities, dangers, and trends in the external environment as well as the structural changes that the economy is undergoing.

3. The Analyst's Role

The potential success of a business depends on its organizational performance, which refers to its ability to effectively implement strategies to achieve institutional objectives (Randeree and Al Youha, 2009). Several variables constitute organizational performance, such as business model effectiveness, efficiency, and outcomes (Boyatzis and Ratti, 2009; Ryan et al., 2009).

The performance of any organization depends in large part on the level of skill its managers possess when it comes to implementing strategies (Almatrooshi et al., 2016). Organizational performance and leadership competencies correlate with a leader's social, cognitive, and emotional intelligence competencies (Ryan et al., 2012).

A complex process that includes analysis and assessment of information and decision support and full cooperation of the various decisions as to the managers' Strategic Intelligence that directly affect the future performance of organizations with regard to the best decisions for the organization (Azma and Mostafapour, 2012).

Organizations in order to be able compete globally, are required to stay a step ahead of their competitors. Consequently, a number of strategic decisions will have to be made to remain competitive in the foreseeable future. The utilization of Strategic Intelligence during the strategic management process could identify opportunities, and challenges faced and help compete successfully against local and international competitors (Pellissier and Kruger, 2011).

Strategic Intelligence is necessary to change conditions and to address challenges from the environment and is also necessary for adaptation of the organization's plans to a dynamic and evolving context that requires intelligence to interpret developments, identify drivers of change, and inform management decisions and actions that will lead to new strategies (Arcos, 2016). The most important internal factors that lead an organization to development are managers, analyst and staff.

Much work has been done to try to identify and categorize the core competencies of analysts so that a planned approach can be developed toward meeting the training and education needs of all intelligence officers, not just analysts also called sometimes watcher. However, neither the mainstream agencies nor the professional bodies have yet addressed in detail exactly what it is that the analyst should be, as opposed to what he should be doing. However, we present the main roles played by analysts in the following points:

3.1.Identifying Organizational Needs

Any judgment about an intelligence product is always linked to its relevance. If the customer cannot see the significance of the assessment, warning, or forecast in terms of his or her responsibilities, then it is small wonder that it is the reputation of the intelligence unit and the analyst that suffers as a result. In this sense, two elements are principal:

- The analyst has to make the links so that they are clear to every reader. This is not just a question of intelligent use of language but strikes right at the heart of the analysis itself. If the way in which the problem or task has been addressed is consistent with or at least complements the organization's role and responsibilities, then it will be unclear why the analyst is doing such work.
- Even if the work is perceived to be relevant from the analyst's perspective, it is the analyst's role to explain this persuasively to "sell" the idea of relevance so the product will not be trivialized or, worse, ignored.

Whether the task was allocated by organizational clients, customers, or managers, or whether it was the result of internal intelligence unit initiatives, is not relevant in this context. These are crucial problems of organizational necessity and relevance, and that's what matters. Asking: Does this affect our responsibilities and are we the genuine stakeholders, or at least one of them? is the simplest method for the analyst to test this.

What happens when intelligence resources are used for matters unrelated to the main objectives of the organization? Naturally, the simplest response is that time and effort are lost, but there is more to this topic than meets the eye. Intelligence activity is rarely fully and authentically embraced by governmental or organizational entities; hence, it typically finds itself actively seeking comprehension and acknowledgment of its function. Its reputation and position within the organization could suffer if it devotes too much effort on problems that are, at most, incidental to major organizational challenges.

The greatest method for intelligence to demonstrate its validity is, without a doubt, to produce evaluations and recommendations that are accurate, timely, and pertinent to the organization's goals. Organizational executives may not always provide the intelligence analyst with the information needed to determine what is and is not relevant to changing organizational requirements.

The intelligence analysts will have to figure out this fluctuating amount of information on their own, outside of the organization's core defined agreement. Here, the intelligence team has the responsibility of remaining vigilant at all times to spot any signs of change, threat, risk, or opportunity that could affect the organization. Once such indicators have been found, it may make a strong case for their study that it is pertinent to organization goals and deserving of the contribution of intelligence resources. The analyst cannot afford to ignore the importance of determining what has to be done in addition to how to execute it.

3.2.Having a necessary research focus

One aspect of intelligence work is its ability to attract practitioners toward the "exciting" activities more often associated with investigation. The obvious exception is found in those agencies that have their own internal investigation capabilities and are exclusively focused on intelligence work.

The enthusiasm that intelligence experts bring to their work contributes to the challenge of staying focused when performing analytical work, especially in the field of competitive intelligence but also in enforcement. Furthermore, the need to "get out and do things" that are more appropriate for field investigative work than the creative thinking that typically limits the analyst to the office can be generated by such enthusiasm.

Moreover, the analyst must control the whole strategic intelligence process and demonstrate a commitment to the orderly and disciplined application of the analytical processes and methods outlined.

What is most helpful is if analysts are encouraged and positively reinforced by supervisors and managers similar to consider themselves researchers. The analyst can only create and sustain the required research concentration by mentally embracing the need to work consistently at using intellectual analytical skills. Consequently, this is an activity of serious research, requiring the talent to remain objective throughout the strategic assignment, and not to succumb to the potential excitement more often associated with tactical or operational intelligence activity.

3.3.Understanding Data Sources

First of all, the analyst has to work out what exactly is needed, in terms of detailed information, and then consider all the appropriate sources that might be able to provide some or all of the information being sought. The analyst's role is not just to determine which agencies or individuals potentially have access to the type of data being required.

That is undoubtedly a serious concern, but the analyst needs to go beyond that awareness and comprehend the type and quality of the source's access as well. The analyst may be able to obtain specific types of data from multiple data sources. However, understanding how they obtain access, document their observations, and determine whether their routines for data gathering and observation have a specific focus or skew that aligns or deviates from the requirements of the strategic analysis are equally important.

These and similar topics are rarely, if ever, written down and passed into the organization's institutional knowledge banks. Rather, each analyst learns through experience that, regrettably, is likely to be reiterated again and again without being passed along to others with similar interests.

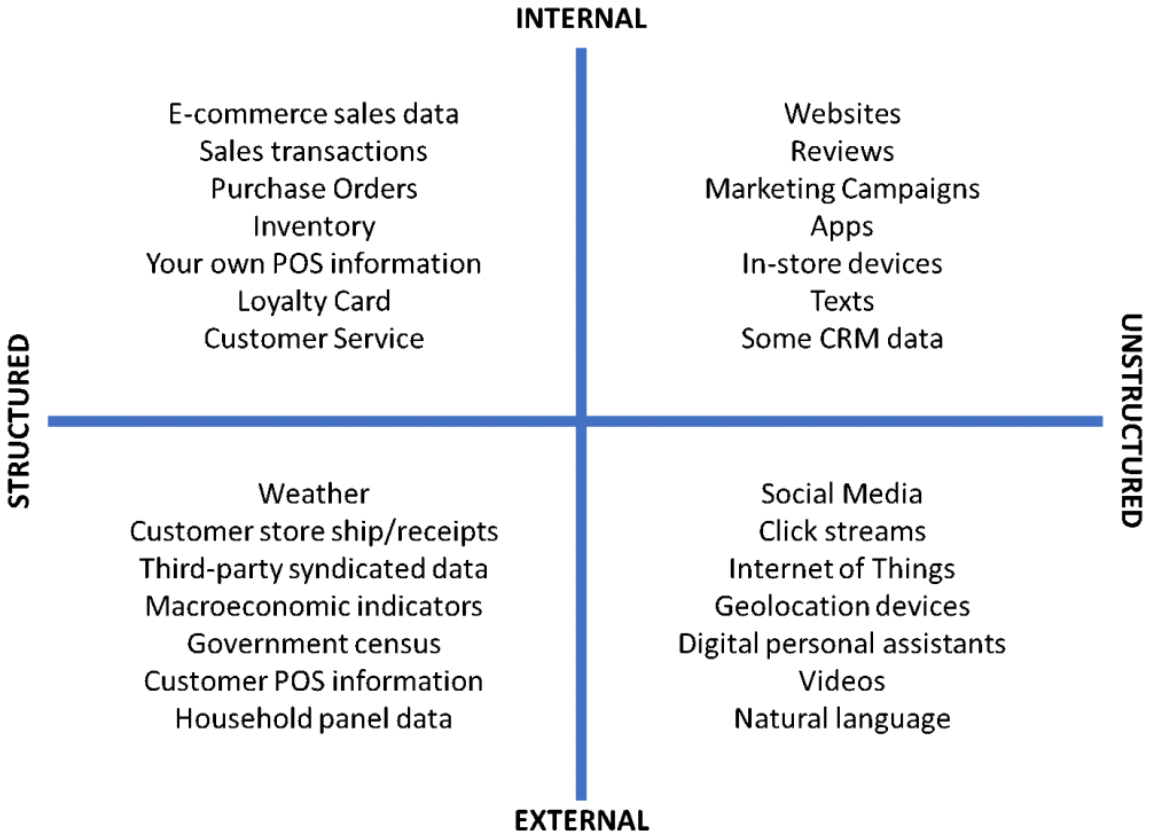
What then is supposed to be the strategic analyst's role in this situation? Every strategic assignment gives the analyst the chance to discover the potential contributions of each chosen source through firsthand experience with data collecting. We will assume that the analyst can continuously use care in framing the data queries in a way that will extract the best response possible from the provider, even if some of the outcomes will inevitably depend on how the analyst structures the information requests. Thus, the analyst can evaluate the response using a set of reasonable, uniform standards, such as:

- Did the level of detail that was provided match the requirement spelled out in the communication between analyst and source?
- In what respect was it deficient?
- Was a deficiency of clarity in the communication likely to be the cause?
- Is there a discernible "flavor" in the way the source has structured or written up the data provided?
- Does this suggest a particular focus on the part of the source?
- Does the source allow this?
- Can you deduce a pattern of focus or limitation that is helpful in determining future use of this source?

The analyst carefully considers these matters in light of potential future usage of any source. If the intelligence unit wants to benefit from the experiences of each analyst, it is also advisable to commit to documenting and disseminating this information. Analysts won't be able to create the data-and-source matrix of the collection strategy without this information pooling, even in foresight.

There are several external and internal Data sources as shown in the figure below. Among these sources we can classify it into structured and unstructured data.

Figure 3.6: External and Internal Data Sources



3.4.Performance Measurement

The project and the intelligence effort will eventually be evaluated in some way by all stakeholders, which is an inevitable byproduct of the analyst's work on strategic assessments.

What function does an analyst play in a strategic intelligence project in the absence of well-established and validated performance measurement guidelines? The analyst, the client or customer, and the supervisor/manager of intelligence are the "key players" in this situation, even if it is evident that every reader of a strategic evaluation eventually generates an opinion about its value a process that is similar to creating a “performance opinion.”

However, there are some simple steps of performance measurement to follow:

- At the commencement of every intelligence project, it is imperative to acknowledge the intention to evaluate the quality of the strategic evaluation and measure the performance of the stakeholders.
- Early on in the project, the intelligence team and the client should jointly negotiate the criteria that will be used to evaluate the project.
- Criteria has to be formulated in a way that makes it evident how the client's expectations and the requirement for an internal assessment of intelligence practices within the analytical unit differ from one another.
- Additionally, a clear division between quantitative and qualitative benchmark expectations and criteria needs to be made.
- Each of these issues must be reached after a rational conversation between the involved parties, approved, and included in or attached to the Terms of Reference.
- The manager, client, and analyst are the three main participants in the review process; however, a facilitator or mediator may also be included. In this process, no one party should be in charge.
- Agencies that use an impartial arbiter to "find fault" run the risk of becoming distracted from the real need for change and concentrating instead on assigning blame and fostering mistrust.
- When writing the strategic project report, the analyst must make sure that the project directive is given in a way that makes sense and provides enough information for readers to measure performance and make informed decisions about what the project was initially intended to accomplish.

- Writing out the post-action review and making the report available to intelligence personnel and other relevant parties is a smart idea since they will benefit from taking into account the lessons obtained from the project.

3.5.Managing Upward and Laterally

The strategic analyst is the person who runs an evaluation project. It is impossible to refute this in terms of the intellectual restraint required for successful results. It is almost definitely preferable to leave the practical control issues such as those about resources, direction, and so forth to the project analyst rather than a third party. This is the only way to guarantee that the project continues on track and that all pertinent factors are taken into account.

The analyst serves as the central point for all analytical project activities and, consequently, has comparable responsibility to the customer and the unit manager. However, managing the project requires abilities that not every analyst possesses.

However, the analyst's role in this domain is not over yet. Project control alone is insufficient unless the analyst can persuade stakeholders both inside and beyond the local project area that the intelligence professionals have the right to manage and exercise that control.

Sometimes organizations are so structured in a hierarchical way that intelligence personnel lacks the power or chance to act independently and responsibly while representing intelligence as a profession. In this sense, the professional intelligence team, especially the strategic analysts, must learn to "manage" their lateral and vertical relationships precisely because of these kinds of challenges.

In this context, we can distinguish organizations in which intelligence is a legitimate and credible equal to other functional groups from organizations that have not yet fully embraced the intelligence function.

4. The Analyst's Responsibilities

The strategic analyst does multiple tasks when completing an assignment. Furthermore, analysts typically discover that there is a continuous need to improve the "image" and standing of intelligence and analysis both inside and outside of their firm. The conversation that follows addresses the main responsibilities that analysts have following the concept of professionalism.

4.1.Selling the ideas and concepts

Without a doubt, selling the concepts and ideas of a professional intelligence agency is a component of the job description and duties of intelligence analysts. This is because, unlike investigative activities, for example, intelligence assessments in general and strategic intelligence in particular remain relatively innovative ideas.

Organizations should create strategies that meet their cultural demands if they want strategic intelligence practices to become more credible. There are many ways to accomplish this. However, inevitably, the most effective component of such a plan will most likely be a good performance to create pertinent helpful, and engaging research of the strategic kind. This ultimately boils down to the duties and responsibilities of the analyst as well as how the manager and other members of the team promote and support strategic analysis work.

Indeed, a proactive approach to advancing the perception and reality of strategic intelligence would be far more beneficial and support the analyst's confidence at the same time.

4.2.Maintaining Intellectual Rigor

The analyst has an equally great responsibility to oversee the strategic project with the highest level of professionalism to develop and retain control over it. This entails not just possessing the necessary experience in the subject of strategic search, but also proving it by keeping a consistent high standard for that expertise.

This is about conducting the systematic research process with rigor and accuracy rather than about knowing in and of itself. What distinguishes strategic research from many other types of intelligence work is the preservation of intellectual rigor, and the analyst is unable to allow any desire for fast and widely accepted solutions to take priority over the necessity of a responsible investigation effort.

4.3.Developing Conceptual Models

Conceptual model development is that crucial phase that establishes the structure of any given phenomenon or concept before commencing planning for the research project. Without it there are only two possible outcomes: Either the analyst ignores the opportunity to establish a reasonable basis for subsequent progress, or, instead, she opts to use her current level of knowledge as the conceptual baseline, assuming there is no need for critical self-examination. Both approaches have the potential to provide an inadequate basis for project planning and neither is a substitute for careful development of a more appropriate model.

Analysts can use their skills to develop appropriate industry, or commodity, or scenario models, with specific aims.

5. The Analyst Challenges

The latent power and influence of the analyst in making sure that everything to do with strategic intelligence activity is carried out with a high degree of professionalism. Balancing this has been the acceptance that this is not automatically an easy role to perform, partially because the analyst may wish to avoid a level of commitment that could lead to confrontation with peers and seniors, and partly because organizational culture often inhibits good practice. The analyst must acknowledge and embrace the fact that possessing expertise and professionalism entails facing challenges head-on and finding solutions.

5.1.Risk Taken

The possible degree of confrontation an analyst faces will vary depending on how a company operates. Naturally, this is not just a problem for analysts; managers and supervisors of intelligence services will also constantly experience a strong sense of pressure to live up to expectations. However, while the organization's expectations of them in their managerial jobs influence their obligations, the analyst is more likely to stay apart due to the intellectual nature of the study and, to some extent, the mystery surrounding intelligence operations. It's not easy to manage this obligation while also addressing what would seem to be the strategic research's isolation from other members of the organization's "real-world" activities. It requires the analyst to cultivate a strong sense of purpose, self-awareness of skill and the confidence that goes together with it, and the courage to act in favor of potentially novel concepts and unconventional findings.

5.2.Professional Development

To meet the demands of the intelligence community market, a variety of universities and colleges in Europe, North America, and Australia are currently experimenting with courses tailored to intelligence practitioners' needs. If nothing else, it is hoped that some of these institutions will at least transition to offering education exclusively through distance-based methods. Though many institutions strive to offer engaging and beneficial programs, the reality is that organizations sometimes cannot wait three or more years for the necessary results from a study regimen. This is a slow-moving development. Besides, there is a continuing and high demand for quick, expert training that can be complemented not supplanted by higher education.

5.3.The Analyst as a Creative Thinker

Like any other analysis, one of the defining characteristics of strategic intelligence analysis is the analyst's need to be able to think creatively and unconstrained by tradition or convention. A fair examination of investigative procedures would demonstrate that if the outcome is going to stand up to scrutiny in the boardroom, the courts, or the stock exchange, the evidence and logic chain must be flawless. On the other hand, even while intelligence can help with investigations in some situations, it is not the same as conducting investigations.

Strategic analysts need to be trained and educated to think creatively. The intelligence unit can only be sure that its operatives will stay out of the pitfalls of being enslaved to precedent, conformist mentality, and imposed cultural values—all of which are enemies of objective analysis—by increasing their awareness. It is indisputable that the analyst can learn about the process of developing creative thinking.

Chapter 4: Strategic Intelligence, Economic Intelligence, and Knowledge Management

Intelligence is defined as the ability to explain the interrelationships between the facts to accomplish the required goals. Organizational intelligence is the processing, interpretation, and conversion the information into useful knowledge for decision-making. Besides, economic intelligence deals with the necessary knowledge to make strategic decisions that relate to the surrounding environment, especially markets, competitors, products, and technology factors. Through this chapter, we present the concept of Economic Intelligence and the difference between the concept of Strategic Intelligence and also the role of knowledge management.

1. Economic Intelligence Concept

Economic Intelligence is defined as encompassing all of the coordinated measures of information collection, processing, distribution, and protection that are of value to economic players and that are achievable by legal means (Clerc, 1996).

Economic Intelligence is a set of coordinated actions of search, processing, and distribution for exploitation of useful information for economic actors. EI research has developed methods by which to identify relevant sources of information and to analyze and manipulate the collected information to provide what the user needs for decision-making (Oladejo et al., 2009). In addition, EI concerns the set of concepts, methods, and tools that unify all of the coordinated actions of research, acquisition, treatment, storage, and diffusion of information that are relevant to individual or clustered enterprises and organizations in the framework of a strategy (Cetisme Project, 2002).

Economic Intelligence represents the control and protection of strategic information that enables the entrepreneur to optimize decision-making. Economic Intelligence is further defined as the art of observation and the art of detecting threats and opportunities by coordinating the collection, sorting, storage, validation, analysis, and dissemination of useful or strategic information to those in need.

The notion of EI also concerns the set of concepts, methods, and tools that unify all of the coordinated actions of research, acquisition, treatment, storage, and diffusion of information that are relevant to individuals or organizations in the framework of a strategy with aimed of economic benefits (Briciu et al., 2009).

The concept of Economic Intelligence evolved through four periods (Briciu et al., 2009):

- in the 1980s and early 1990s, the definitions focused on processes, tools, and techniques
- in the 1990s, definitions focused on the use of economic intelligence or strategic vigils and their overall objectives
- in the late 1990s, the concepts of management and collective intelligence, organizational learning and collaborative work emerged
- in the 2000s, the definition explanded to include, in addition to the previous notions, those of cultural identity, regionalism and the concept of economic defense.

2. Knowledge Management and Strategic Intelligence

The origin of the concept goes back to Fritz Machlup (1902–1983), and Peter Drucker (1909–2005). To Machlup, "now, the growth of technical knowledge, and the growth of productivity that may result from it, are certainly important factors in the analysis of economic growth and other economic problems" (Machlup, 1962, p. 5). However, Machlup argued, there are other types of knowledge in addition to scientific knowledge, like knowledge of an unproductive type which society allocates ample resources: schools, books, and media. Besides, organizations focus on brain work made by researchers, designers, planners, and executives for example. Therefore, Machlup listed eleven reasons for studying the economics of knowledge, among them:

- Knowledge as strongly associated with increase in productivity and economic growth.

- Knowledge's linkages to new information and communication technologies (ICT).

- Shifts of demand from physical labour to brain workers.

- Improving and adjusting the national-income accounting.

In short, according to Machlup, knowledge includes scientific and ordinary knowledge, and its producing consist on discovering, inventing, designing, planning, disseminating and communicating (Machlup, 1962). The figure 1 below presents the Machlup's sources of Insight. Actually, the measurement of knowledge is often of a third kind by using indicators. Such measurements are to be found in publications from the OECD, and the

world Bunk for example. There is no summation, as in accounting, but a collection of available statistics on several dimensions of knowledge (Godin, 2008).

Figure 4.1 : Machlup's sources of Insight (Godin, 2008, p 28)

Field	Concept	Machlup
Philosophy (Ryle, Polanyi)	Subjective Knowledge	KNOWLEDGE
Economics (Hayek, Arrow)	Information	
Mathematics (Sannon and Wiener)	Communication	COMMUNICATION INFORMATION
Statistics (NSF, Human Capital)	Accounting	EDUCATION R&D

Peter Drucker (1966), in his book "the effective executive", distinguishes between manual employees and knowledge employees. Manual workers utilize their hands to generate items or services, whereas knowledge workers rely on their minds (Thomran & Alshammari, 2023). The KE and innovation are strongly linked and are directly impacted by strategic intelligence practices within organizations.

According to Winter (2019), the "KE" refers to an economic system where the primary drivers of competitiveness for businesses, industries, and cities or regions are the acquisition, generation, and utilization of knowledge.

In other words, the KE is the result of rapid expansion of knowledge and the increasing reliance on computerization, big data analytics, and automation which changed the economy of the developed world to one that is more dependent on intellectual capital and skills, and less dependent on the production process.

Thus, the knowledge economy (KE) is characterized by the followings elements (Belalmi, 2020):

- The use of knowledge as the primary tool to produce new economic benefits or maximize existing ones.

- It’s also an economy dependent on human capital with high quality education, and intangible assets, such as proprietary technology, and patents.

- The adoption of new production techniques leading firms to a significant reduction in products costs, especially services.

- The KE is based also on digitalization. According to Clerck (2017), digitalization represents “the use of digital technologies and of data in order to create revenue, improve business, replace/transform business processes and create an environment for digital business, whereby digital information is at the core”.

- KE led to the emergence of new markets existing on websites with a speed of information flow.

Thus, the KE depends on four basic pillars as follows: education and training; dynamic information infrastructure; Research & Development and innovation activities; and knowledge flow (Al Ali et al. 2022).

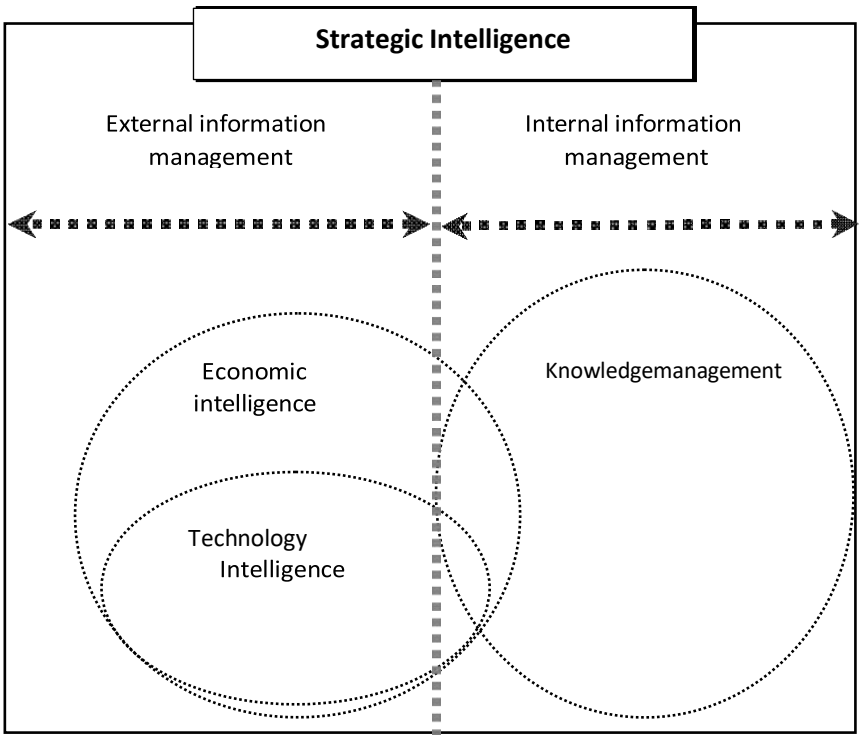
Moreover, various studies have been conducted on the factors affecting the growth of the KE, and it has been recognized as the foundation for the development of the economy (Yigitcanlar, 2014; Muzeyin et al., 2022).

According to Ramady (2010), for the advancement of the economy and society driven by knowledge, it’s important to invest in high-quality education (HE) and training which create significant external advantages. For Moiseev et al. (2019), HE is an integral part of KE and innovation, and it serves as a crucial factor in the growth of knowledge, economy, and human resources in organizations.

3. Economic Intelligence and Strategic Intelligence

Economic Intelligence shares with technological watchers and knowledge management in the formation of strategic intelligence based on internal information from Knowledge Management as well as external information that is provided by Economic Intelligence with technological watch which supports the strategic vigilance. The EI process watches all environment indicators, especially those that concern economic competitiveness and are based on knowledge process as shown in the figure below.

Figure 4.2: Economic intelligence and KM as part of strategic intelligence (adapted from Cetisme Project, 2002, p19)



The function of intelligence is not to pursue knowledge for its own sake but rather to throw light on the probable consequences of present or future action (Millikan, 1956). Knowledge Management identifies, creates, represents, and distributes the knowledge.

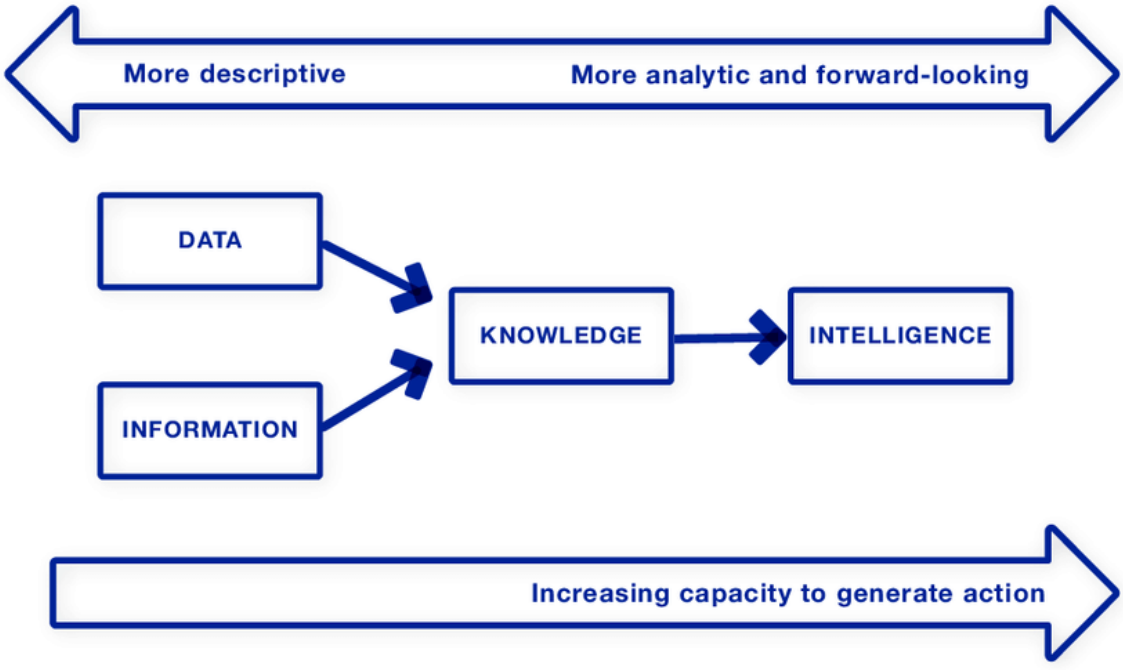
According to the Cetisme Project (2002), Knowledge Management follows some of the concepts associated with Economic Intelligence such as competitive intelligence, business intelligence, technology intelligence. KM focuses on existing knowledge inside of the organization and ways of capturing it in a collaborative framework.

Economic Intelligence is based on the exploitation of publicly available sources and differs from economic espionage in that it makes use of legal means to acquire information and the pursuit of EI, at the organization, industry, and state levels.

At the operational level, Economic Intelligence can be thought of as both a product and a process. The product of EI is workable information and knowledge, and the process of EI is the systematic acquisition, evaluation and production of that usable information and knowledge (Clerc, 1996).

The preliminary data are based on acts and facts and derive from the physical world. After the data are structured, they become information and turn information into knowledge after it is measured based on personal criteria. This process generates understanding and personal meaning. Finally, the intelligence crystallized in applied to solve the problem or situation during decision-making as shown in the figure below.

Figure 4.3: From Data to Intelligence (Ratcliffe, 2016, p72).



The difference between data and information, knowledge and intelligence can be determined according to the following:

- **Data**: raw, unconnected figures, words, events, existing without a conceptual framework of reference. With the context missing, there is little or no meaning at all in the data.

- **Information**: where there is an understanding of the relationships between data, or between pieces of data and other information, but not providing a foundation for why the data is what it is, nor an indication as to how the data is likely to change over time.
- **Knowledge**: when a pattern relation exists in the data and information, the pattern has the potential to represent knowledge, provided that the user is able to realize and understand the patterns and their implications. The pattern tends to create its own context rather than being context dependent, providing a high level of reliability or predictability as to how the pattern will evolve over time.
- **Intelligence (or wisdom)** arises when the user understands the principles responsible for the patterns representing knowledge.

Information, knowledge, intelligence and wisdom are more than simply collections, a collection of data is not information, a collection of information is not knowledge, a collection of knowledge is not wisdom, a collection of wisdom is not truth (Cetisme Project, (2002), p.18).

The following table shows a review of activities, methods and tools for different stages of the process of economic intelligence.

Table 4.1: Activities, Methods and Tools for different stages of the Economic Intelligence Process. (Briciu et al., 2009, p.29)

Stages of economic intelligence process	*Actors*	*Activities and areas of expertise*	*Examples of tools*
1 Identification of the problems	Decision maker	• Knowledge of environment	Analysis methods and tools: • Pareto, SWOT, Ishikawa diagram, BCG, six sigma.
2 Transformation of decision problem into information	Decision maker and watcher	• Skills for decision problem analysis and informational problem projection • Monitoring and evaluating the translation process	Needs analysis and tools: • Auditing method and tools, TQM, PDPA • Brainstorming tools and concept mapping. • Computer supported cooperative work.
3 Identification of relevant information sources and validation of sources	Watcher	Search for formal and informal sources: • Valuation of the indicators by information retrieval	• Databases, documentary software • Enterprise information portal (EIP)
4 Collection and validation of Information	Watcher	• Skills and abilities for information systems and documentary language	• Intelligence agents • Specialised portals • Documentation • Archives and recording tools
5 Processing the collected information for the calculation of indicators.	Watcher	• Intellectual and physical processing of documents (description, tracking, indexing, memorisation, abstract)	• Automatic abstracting and summarizing tools • Classification tools • Infometry, statistical methods and tools
6 The adapted presentation of informational solutions	Watcher	• Describing a final format for presenting information (contingency tables, graphs, notes, reporting)	• Collaboration tools • Dissemination tools
7 Interpretation of the information	Decision maker	• Ability to analyze and interpret information	• Decision support systems (DSS), SIS • Management tools, scoreboard, decision matrix
8 Decision making for the resolution of the problem	Decision maker	• Knowledge of decision-making process • Monitoring the informational indicator	• Decision support systems (DSS), SIS, data warehouse, data mining • Management tools, scoreboard, decision matrix
Protection of informational patrimony (throughout the entire process)	Watcher and decision maker	• Identifying, disseminating, storing, sharing and protecting knowledge • Selective dissemination of information	• Security software for systems • Patents, quality norms, brand image, etc. • Saucerisation of LAN and PAN networks, video surveillance systems • Intranet, virtual private networks

Chapter 5: Strategic Intelligence and Competitive Advantage

Nowadays, organizations must be aware of developing their capacity to create competitive advantages allowing them to survive and progress.

Strategic intelligence is designed to make long-term policy decisions and provides tools to support operational objectives, by predicting future challenges, which can have a direct impact on achieving strategic goals through competitive advantage creation.

1. Competitive Advantage Definitions

According to Kotler (2000), competitive advantage is the ability of an organization to operate in a unique way that competitors cannot imitate. For a deep understanding of this concept, several definitions in academic research are presented in the table below.

Table 5.1: Competitive Advantage Definitions (Almin, R.G., 2019, p 68.)

Author	Concept of competitive advantage
Ghemewat (1986)	Competitive advantage can be sustainable depending on the number of cost sources or the advantages of differentiation
Kay (1993)	Competitive advantage is a deceptively simple idea of assessing a company"s capabilitiesand market position by how they give it advantage 4 relative to competitors". Competitive advantages are ephemeral and only worth as much as the value that the market places onthem.
Porter (2000)	Competitive advantage relates to the company's performance in competitive markets. Itmeans low costs, a differentiation advantage, or a successful focus strategy. The competitive advantage grows mainly from the value that a company can create for buyerswho exceed the cost of creating a company.
Barney (1997)	The competitive advantage is considered sustainable if those resources are also no imitable (i.e., cannot be easily duplicated by competitors), no substitutable (i.e., other resources cannot perform the same function), and nontransferable (i.e., cannot be acquired in the marketplace).
Hunt (2000)	Modern business strategy maintains that the strategic imperative of a firm should besustained, superior financial performance and the belief that this goal can be achieved through a sustainable competitive advantage in the marketplace.
Saloner, Shepard ,Podolny (2001)	Most forms of competitive advantage mean either that a firm can produce some service orproduct that its customers" value than those produced by competitors or that it can produce its service or product at a lower cost than its competitors.
Powell (2001)	Competitive advantage has generated a large volume of scholarly output, both theoreticaland empirical; firms do, by all accounts, attempt to identify, create and leverage competitive advantages; and competitive advantage is universally accepted in strategicmanagement courses and textbooks as an essential concept in

	strategy.
Urbancová (2013)	The innovative activity of organizations significantly influences competitiveness which isbased on inimitable skills and abilities. Achieving a higher competitiveness by means of innovations means producing less costly products of better quality compared to thosemanufactured by competitors.
Wang (2014)	Competitive advantage is obtained when an organization develops or acquires a set of attributes (or executes actions) that allow it to outperform its competitors. The development of theories that help explain competitive advantage has occupied the attention of the management community for the better part of half a century.

2. Dimensions of Achieving Competitive Advantage

2.1. Creativity: the goal of creative decision-making is to solve problems in novel and inventive ways, hence generating new and practical approaches to corporate undertakings. According to Urbancova (2013), unconventionality can refer to the generation of ideas, decisions, and behaviors that are manageable. Hence, it is imperative to underscore that the human element produces concepts that could perhaps provide the business with a temporary edge over rivals.

2.2. Flexibility: The company's ability to deliver a variety of products in a timely manner, and the company's ability to develop existing products and improve its operations to deliver new products that meet the needs and desires of customers (Chse, Aquilano, Jacobs & Robert, 2001). It is the company's aptitude to bring about change in operations, both in performance and time product that includes product flexibility, mix, size, and delivery (Slack, Chambers, Harland, Harrston& Johnston, 2004). Flexibility is usually associated with different processes in the company that allow it to respond quickly to customer needs and desires (William, 2007). In other words, flexibility refers to the organization's ability to respond quickly to changes in product design characteristics or changes in the size of customers' requests and changing their desires.

2.3. Costs: The ability to reduce production costs in a way that satisfies the needs of a broad spectrum of customers by lowering the overall cost of service products makes cost one of the key factors in gaining a competitive advantage. However, it is important to understand that this strategy is not unqualified and must be implemented following laws and regulations (Wheelen & Hunger, 2010, 67). Thus, the lowest-cost organization should concentrate on the manufacturing process, which begins with the suppliers and ends with the product being delivered to clients. It should also maintain control over all products and production-related

expenses and develop new, low-cost services. According to Tugce (2013), the organization can reach the cost leadership strategy through:

- Improve the activities and create added value.
- The elimination of unnecessary costs.

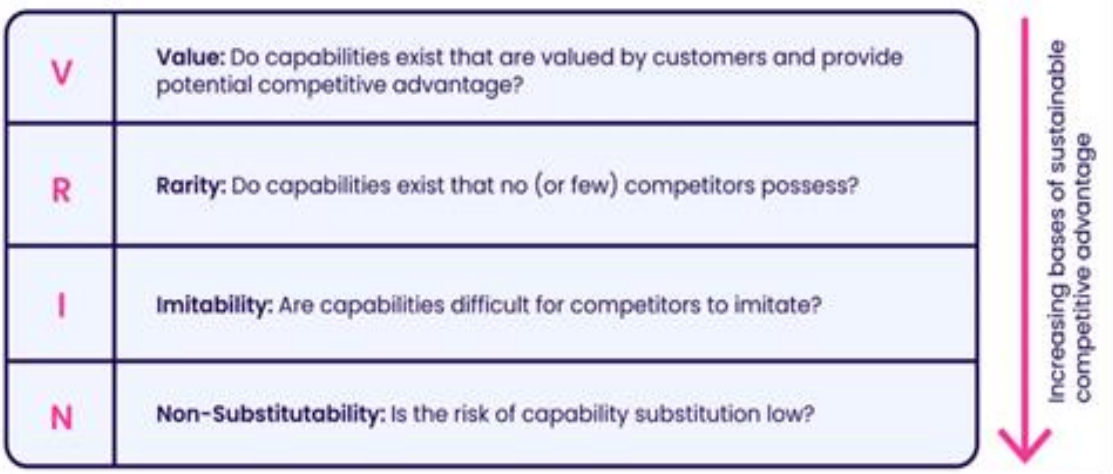
2.4. Differentiation: To provide customers with a better value, differentiation entails developing a product or service that is unique and works to emphasize these features. This adds value to the product or service and encourages customers to pay a higher price for it (Beckham, 2008). Firms aim to offer goods and services that set them apart from competitors, giving them a competitive edge in providing goods and services and winning the patronage of their clients. As a kind of discrimination that offers them a competitive advantage, organizations therefore turn to incorporating cutting-edge technology into their products or making adjustments based on customer demand. According to Poolad (2010), this helps them meet demand, which is defined by growth that leads to profitability.

2.5. Quality: According to Gupta, Garg, and Kumar (2014), quality is the capacity to provide goods and services to clients at the lowest possible cost and without flaws. It also involves ensuring that the business can differentiate itself from competitors in the market and accurately portray the general features and attributes of the good or service that satisfy the needs of the clientele. One of the most crucial elements for an organization's existence, expansion, and ability to remain competitive is quality.

3. Attributes of Competitive Advantage

In the Resource Based View theory (RBV) and according to Barney, four attributes called (VRIN) are linked with sustainable competitive advantage, as shown in the figure below.

Figure 5.1: Attributes of Competitive Advantage



3.1.Value: Barney's (1986) definition of value as related to the value of the assets. Barney considered economic value as having no relationship with its contingent value, due to its relationship with other resources. That is why the only way to obtain valuable resources is when they are underpriced, that is, to anticipate and exploit competitive imperfection in strategic factor markets" which could be done by using private information. The value created is a function of private information about resources available to purchase in the market.

3.2.Rarity: For Barney (2001), the rarity of a resource was operationalized as "less than the number of firms needed to generate perfect competition dynamics in an industry." The remaining question has to do with the interaction of resources. It's the example of culture.

3.3.Imitability: In the RBV, preventing other firms from copying or imitating one's valuable resources is regarded as a priority. "Imitability is an important component of the resource-based view of the firm.

3.4.Non-substitutability: If other firms can acquire or develop the same, or substitute, resources as a firm that already possesses these resources, and can do so at approximately the same cost as the firm that already possesses them, then they cannot be source of competitive advantage for any firm" (Barney, 1996 :134).

In other words, Barney (1991) claimed that firms with the same strategy would improve their efficiency and effectiveness at the same level. Further, Porter (1996) argues that "the more benchmarking companies do, the more they look alike, and that such a process would lead to a "competitive convergence". Both arguments imply that performance is possible to attain

using imitation. However, there isn't any assurance that copying an asset, technique, or strategy will converge or have the same performance in any firm because its interaction with the rest of the resources is specific.

Teece (1986) argues the importance of complementary assets and resources to surround and support the core technology of a firm that faces a changing environment. Eisenhardt and Martin (2000) claim that "since the functionality of dynamic capabilities can be duplicated across firms, their value for competitive advantage lies in the resource configurations that they create, not in the capabilities themselves".

Furthermore, the value of the resources will change over time (Foss, Knudsen, Montgomery, 1996). Having the same level of performance with different resources is possible, even with different resources and configurations: there is no certain direct link between a valuable resource and performance level. And even more in a dynamic setting, where performance can go up and down in a continuous cycle.

4. Competitive Strategies

Four generic competitive strategies form the basis of any successful specific business strategy, namely:

- ***The differentiated strategy*** relies on providing superior value. The use of strategic intelligence permits firms to present new products that are difficult to imitate, difficult to replace with substitutes, with more perceived value, and command premium prices. It's the case of Google and Apple.

- ***The Cost Leader*** enjoys a lower cost structure, which enables competition based on lower prices than competitors and better quality and service levels. It's the case of Wal-Mart.

- ***The focused niche*** player finds a small specialty market in which to operate; a niche may be protected by geographic isolation, by historically tight working relationships between buyer and seller, or by a market too small to attract serious competitors. Strategic intelligence leads firms to focus strategies on a niche and specialize like Hilton.

- The privileged relationships with customers and suppliers through the use of strategic intelligence to develop strong relationships and loyalty. We can cite the example of Amazon.com.

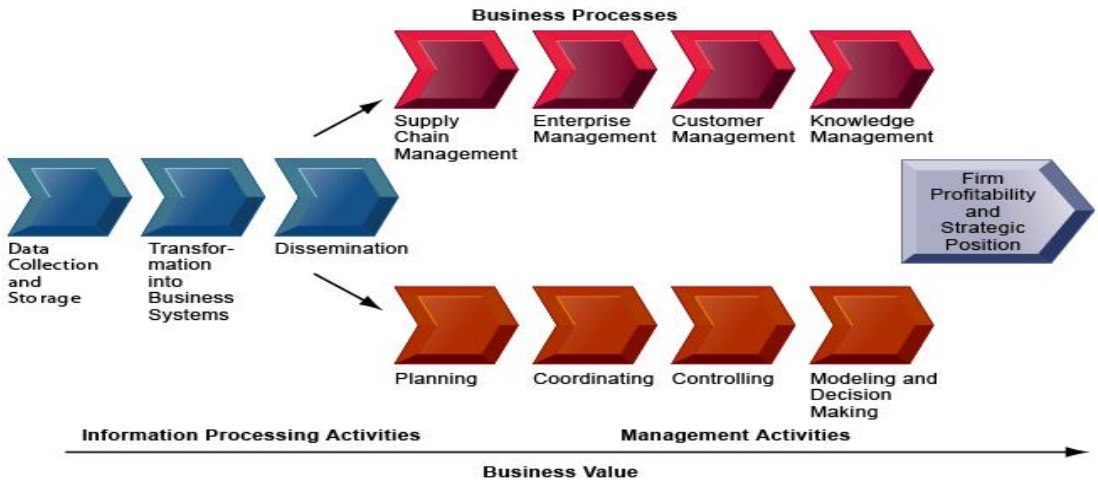
5. Competitive Advantage and Strategic Intelligence

To diagnose competitive advantage and find ways to improve it, we can use the value chain model, introduced by Michael Porter in 1985. The value chain divides an organization into the distinct activities it performs in designing, producing, marketing, and distributing its products and helps identify the linkages among the activities that are central to achieving competitive advantage.

The value chain includes two categories: primary activities and support activities. Primary activities include inbound logistics, operations, outbound logistics, marketing and sales, and service. Support activities include procurement, technology development, human resource management, and infrastructure.

Every industrial firm has an information value chain in which raw data is systematically acquired and then transformed through various stages that add value to that information. The value of an information system to a business, as well as the decision to invest in any new information system, is, in large part, determined by the extent to which the system will lead to better management decisions, more efficient business processes, and higher firm profitability. The figure below shows the different functions in the business information value chain.

Figure 5.2: The business information value chain



(Laudon K. L.-L., 2013)

By understanding how the different activities in the value chain contribute to the final product or service, organizations can make informed decisions about how to allocate resources and improve performance level.

5.6. Strategic Intelligence as a Proactive Decision-making Process

According to (Peppard & Ward, 2004), business value, from investment in strategic intelligence, can only be generated through business improvement and innovation (i.e., product, service innovation, improved business process). Thus, sustainable competitive advantages should be realized through good cooperation between the operation of the organization and the strategic intelligence unit (Kettinger, 1994). From the perspective of resource-based theory, the performance of an organization depends largely on strategic intelligence capability. To be specific, strategic intelligence capability supports and improves the operations of the organization, enhancing organizational performance in the long term (Peppard & Ward, 2004). Furthermore, strategic intelligence is understood as a process of transforming information from the firm's relevant environment into strategies. The identification and use of strategic intelligence can potentially increase competitiveness, using pertinent information to support the decision-making process in organizations (Svensson et al, 2011; Nadarajah et al, 2014). Strategic intelligence consists in processes that help monitoring events in the external environment of the organization, identifying potential risks or opportunities (Dou et al, 2019). The major importance of this process is to feed decision-making, allowing to establish proactive actions to respond to environmental changes in an early movement (Alhamadi, 2020).

Based on signals from the corporate environment, strategic intelligence enables the organization to detect, evaluate, interpret, and produce information (Mandel & Barnes, 2014). Strategic decision-making for competitiveness is sustained through processes of converting data into knowledge, based on learning from monitoring the environment. The interaction between various pieces of information is what allows for the ongoing development of information processing strategies through intellectual resources (Rossel, 2012; Lesca & Lesca, 2014; Muhlroth & Grottke, 2018; Miller et al, 2018; Joseph & Gaba, 2019).

Moreover, because it is a proactive process by nature, strategic intelligence provides a proactive feature to the organization that uses it (Lesca, 2003). Generally speaking, decision-makers rely on their gut feeling and experience when making decisions, rather than employing a method that may be enhanced by a methodical intelligence approach (Simon, 1972; Corso et al., 2014; Borges et al., 2019). Here's where an individual approach differs from a systematized process that defines the organization as a whole: proactive behavior emanates from a single professional (Borges & Janissek Muniz, 2017). A proactive strategy, according to Glueck and Jauch (1984, apud Larson et al., 1986), is one in which strategists take action before being compelled to respond to external threats or opportunities.

Proactivity is preferred in a systematized intelligence process because it enables the decision to be based on data obtained from this process (Cainelli & Janissek-Muniz, 2019). As a result, the interaction between strategic intelligence and decision-making happens in the area of lowering uncertainty (Fleischer & Bensoussan, 2003). Proactivity in a decision-making process is initially characterized as a cognitive process (Weick, 1983). Furthermore, the use of prospective information, often referred to as weak signals (Aguilar, 1967; Lesca, 2003), helps the decision-maker deal with varying degrees of uncertainty (Moreno et al., 2016). Corso et al., (2014), argue that the necessity for strategic intelligence is acknowledged in order to increase the use of this kind of data and encourage more proactive decision-making. According to Bessant & Tidd, (2009), once analyzed through strategic intelligence processes, signals can become relevant for decision-making and innovation. Therefore, through these processes, proactive organizations can expect environment movements, define markets, and face the future as something to be built (Chen et al., 2012; Shankar, 2006), which have positive effects on innovation (Fan et al., 2013).

Chapter 6: Strategic Intelligence and Innovation Capabilities

As a result of businesses' efforts to adapt, innovation can be understood in a variety of ways, including new goods, new markets, new organizational structures, and new manufacturing techniques. Even starting from Schumpeter's primary tenets (1911 and 1942), the neo-Schumpeterian school goes farther. Innovation needs to be understood as a behavioral and evolutionary process rather than just the "novelty" itself (Nelson & Winter, 1982; Teece et al., 1997; Zawislak et al., 2012; Nelson et al., 2018).

It takes a combination of resources, routines, and practices together with data, information, and knowledge to create distinct configurations of intelligence, creativity, and innovative capacity. Innovation capability is the "ability to absorb, adapt and transform a given technology into specific operational, managerial and transactional routines that can lead a firm to Schumpeterian profits, i.e., innovation" (Zawislak et al., 2012, p.23). This includes the development of new products, their commercialization, their operations, and the management of the firms (Alves et al., 2017).

In other words, innovation is contingent upon the conduct of organizations, which might dictate their perspective on environmental shifts (Nieto et al., 2015). Research has demonstrated that the effects of proactive and reactive strategic behaviors on innovation vary (Fan et al, 2013). According to Shankar (2006) and Chen et al. (2012), there are two types of companies: proactive ones that define markets, anticipate environmental changes, and view the future as something to be built; and reactive ones that are more deterministic and follower-focused, seeing the future as something predetermined to which they must adapt.

Helfat and Raubitschek (2018) recognized environmental monitoring, early detection capabilities, and innovation capability as three essential dynamic capabilities to the strategic organizational context. The first two are directly associated with operations relating to strategic intelligence. The basic concept of strategic intelligence holds that established procedures for obtaining data from the outside world to aid in decision-making within a company are essential to its long-term viability (Aguilar, 1967; Ansoff, 1975; Mintzberg, 1994; Day & Schoemaker, 2006; Lesca & Lesca, 2014).

According to Ramirez et al. (2011), this activity is rooted in the proactive behavior of organizations and environmental attention activities that translate signals into strategies.

1. Innovation Concept

Innovation is related to change and novelty (Schumpeter, 1942; Nelson & Winter, 1982; Dosi, 1988; Nelson et al., 2018). Especially in rapidly changing environments, the innovative transformation has a clear value in sustaining competitiveness (Amit & Schoemaker, 1993). To survive, a firm needs to be in constant change and innovation capabilities have the key role to lead that process (Cohen & Levinthal, 1990; Lall, 1992; Bell & Pavitt, 1995; Teece et al., 1997; Augier & Teece, 2007; Zawislak et al., 2012).

Organizations may be more or less able to seek creative results depending on how strong or weak their skills are. According to Lesca (2014), organizations with sophisticated strategic intelligence procedures, emphasizing early alerts and anticipation of possible risks and opportunities are better able to respond proactively in the area of decision-making and, as a result, may exhibit higher levels of capabilities.

According to Penrose (1959), every organization consists of a group of resources. The organization of resources leads to the development of new products, processes, management, and marketing solutions. These resources range from tangible, like machinery and equipment, to intangible, like human capital and knowledge. The economic performance of any firm is determined by the efficient allocation of its resources (Wernerfelt, 1984). Based on this resource-based perspective, Nelson and Winter (1982) expanded the methodology by recognizing that creativity will also rely on particular practices and abilities. A company should be able to respond quickly to changes in the market by having the right resources, customized procedures, and specialized personnel to manage them all. This ensemble of resources, routines, and skills summarizes the concept of capabilities.

2. Innovation Capabilities

According to Wonglimpiyarat (2010) and Forsman (2011), innovation can be viewed as the outcome of a collection of complimentary capabilities. Initially, it was believed that capabilities were limited to the firms' technological problems. The best way to comprehend how businesses handle technological advancement and change is to look at their technological skills (Lall, 1992; Bell & Pavitt, 1995; Helfat, 1997). Here, investments in technical development (R&D), primarily in the form of new goods and processes, are largely seen as the source of innovation. According to Lall (1992), a company's level of innovation would vary based on the complexity of the technological activities they engage in.

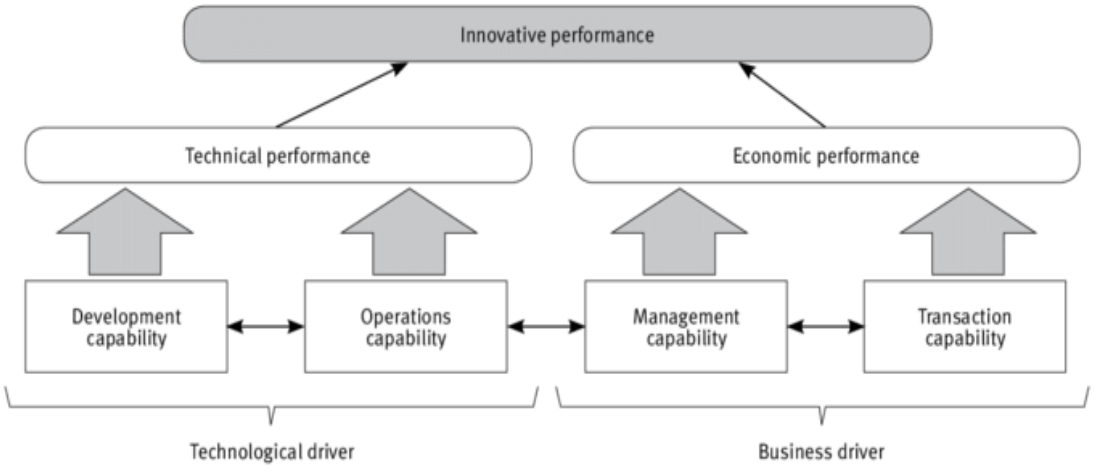
Additionally, researchers have attempted to comprehend how organizations develop their strategies, make decisions, and allocate resources to innovate (Prahalad & Hammel, 1990) from an organizational and corporate perspective.

Teece et al. (1997, p. 516) defined dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." By combining the resource-based view with technological and organizational capabilities approaches, they moved away from the static environment approach and toward a changing one. Dosi and Marengo (2000) assert that spending only on research and development (R&D) is insufficient to create dynamic capabilities.

To find and connect technology choices to market opportunities, coordination between R&D and the company's strategic business divisions, suppliers, and alliance partners is becoming more and more important as the speed of competition accelerates. This emphasizes how crucial coordination and transactional skills are as enhancements to technology proficiency (Tello-Gamarra & Zawislak, 2013). While technological capabilities prioritize research and development as well as operations, dynamic capabilities emphasize the significance of strategy and management (Dutreʁnit, 2000).

Guan and Ma's (2003) innovation capabilities model was one of the first to attempt to assess the company based on both its organizational and technological improvements. The company is said to be the outcome of seven competencies. "The technological learning process from the firms translated into the technological development and operations capabilities, as well as the managerial and transactional routines represented by the management and transaction capabilities," according to Zawislak et al. (2012, p. 17), are the innovation capabilities as shown in the figure below.

Figure 6.1: Innovation capabilities of the firm (Adapted from Zawislak et al., 2013)



According to Zawislak (2012, 2013), the model which presents a balanced picture of the company through the cohabitation of a technological driver and a commercial driver, avoids technological bias. Development, operations, management, and transaction capacities are the components of the Schumpeterian theoretical concept of innovation, which serves as the basis for the second part of the model.

Third, the model is simple to adapt to other industries without sacrificing its theoretical strength. Thus, the four-fold capacities model encompasses the essential elements that underpin the existence of every firm. Indeed, the firm is viewed as a technological set of products and processes that works under a specific business model and a management arrangement, to trade and profit from the market. Those are its capabilities to combine resources, routines, and skills to reach successful competitive performance.

3. Innovation Dimensions

3.1. Incremental Innovation

According to Lee (2011), incremental innovation leads to improving the organizational performance day by day and the minor developments or changes of the existent products, services, technologies, or approaches. It focuses on minor amendments made to the existent products, services, or technologies. However, radical innovation is the one that enables organizations to outperform their competitors (Johnson et al., 2016).

3.2. Radical Innovation

Survival in a competitive environment requires inventing new technologies, products, or services and carrying out new processes. That requires making a radical innovation and adapting quickly to the changes in the business environment (Stanley, 2012). The radical one involves major transformation made to the existent products, services, or technologies.

It involves the entity's capacity to offer products or services which are new and completely different from the existent products and services and add value to them. From the customers' perspective, the radical innovation involves major amendments which provide customers with more benefits.

From the organizations' perspective, the latter innovation involves major changes made to services or technologies for enhancing competitiveness.

4. Innovation and Strategic Intelligence

While approaches to the notion of innovation vary, it is recognized that increasing organizational innovation performance requires an institutionalized process that gathers data from the outside world (Borges et al., 2019; Cainelli et al., 2019). Tsoukas and Shepherd (2004) state that upholding a superior, cohesive, and useful prospective vision can produce insightful information for innovation. According to Janissek-Muniz (2016), possibilities can also develop from environmental instability, providing firms that monitor it with the chance to innovate their business through the collection, interpretation, and use of pertinent information. This process is recognized as a set of strategic intelligence activities, systematized in the firm that learns from the environment and transforms information, knowledge, and technology into an organizational endeavor and successful business. This is innovation.

Moreover, interest in the application of strategic intelligence and the creation of research to determine how intelligence processes function in organizations' innovation processes are sparked by the necessity for businesses to innovate (Sarpong & Meissner, 2018; Cainelli et al., 2019). To put it another way, businesses should use intelligence processes to enhance their innovation process by identifying signals that facilitate the production of new ideas. Wide-ranging scanning is made possible by information-based activities, particularly in domains like technology, consumer preferences, and environmental effects where uncertainty and change are highly felt (Borjesson et al., 2006).

Organizations can anticipate future opportunities and be proactive in identifying threats or issues, to implement structural or strategic changes to their products and services through strategic monitoring, by acknowledging that the environment is a crucial source of information for developing new ideas (Augier et al., 2018).

Among the subjects that appear to have garnered the most interest in intelligence study is the capacity for innovation. Research highlights the positive correlation between innovation and strategic intelligence, indicating that the two are positively correlated (Ramirez et al., 2011; Rohrbeck & Gemünden, 2011; Ruff, 2015). According to Ramirez et al. (2011) and Vishnevskiy et al. (2015), the intelligence literature primarily finds favorable relationships of this process that may impact the development of new goods and/or technical developments. For Vecchiato & Roveda (2010), there is disagreement over how strategic intelligence techniques impact a firm's creative performance, despite the general agreement that they enhance it.

Therefore, utilizing the strategic value of this process in decision-making is still difficult in today's innovation methods, as noted by Duan and Cao (2015). Vecchiato and Roveda (2010) contend further that the creation of an ideal innovation strategy is a product of a successful intelligence gathering approach. Strategic intelligence procedures can help any firm be better prepared for the future, claim Jahn and Koller (2018). It so serves as a catalyst for creative thought.

Strategic intelligence can be used to produce anticipatory intelligence for acquiring insight on future customer wants, as both innovation and strategic intelligence enable novelty in future market contexts (Ruff, 2006; Jahn & Koller, 2018). Furthermore, as noted by Capatina et al. (2016), strategic intelligence serves innovation by assisting in the identification of blind spots in the innovation process as well as alternate solutions to newly developing environmental concerns. Additionally, they contend that innovation gains from intelligence gathering when it opens doors to new information, spots chances for innovation diversification, tracks the advancement of technology, investigates various business models, and deepens comprehension of the surrounding environment. The systematic practice of strategic intelligence enables the reorganization of information to generate meaningful, future-oriented knowledge capable of developing narratives of how it can unfold and how to position innovations in these scenarios (Adegbile et al., 2017).

From the perspective of strategic intelligence, it appears that the relationship between innovation and information is still relatively unexplored, even though innovation capabilities have already been the subject of numerous approaches (Goria, 2018). To assist in understanding how they are interpreted and used, it appears crucial to be able to point to the information and knowledge that is created or required during an innovation process. When the innovation process produces something with a competitive advantage, either organizationally or technologically, the intelligence process needs to be viewed from a strategic and informational perspective for it to be effective. The key is to deliver pertinent data, concepts, and working prototypes at a moment that facilitates action and, ideally, leads to innovative processes (Goria, 2018; Jahn & Koller, 2019).

Many processes, including intelligence operations and innovation capacities, have been discovered to produce invention. Hojland & Rohrbeck (2017) state that intelligence plays a significant role in innovation, which leads to increased profitability and market valuation growth. Nevertheless, the extent of this effect in terms of innovation skills has not yet been determined. According to Reichert et al. (2016), varying combinations of innovation capacities also represent varying degrees of innovative performance.

Chapter 7: Strategic Intelligence, Information Technologies, and Artificial Intelligence

Digital tools that analyze shifting customer preferences, the conversion of staff members into proactive creators and consumers of strategic solutions, and the creation of communication networks that hasten the sharing of information, expertise, and projects are the foundations of strategic intelligence.

1. Information Infrastructure as a Basis for Strategic Intelligence

Organizations that already have effective strategic intelligence or wish to develop it build their own information infrastructure to be able to respond to emerging trends well in advance and to be ready to use new opportunities. Their management should assimilate various types and sources of business information, such as market, political, technological, environmental, and social, to visualize the future. The efficiency of how the company handles information depends on three key capabilities:

- Development of information processes for clear identification of information that is deemed strategic.
- Introduction of information technologies that ensure effective information logistics.
- Building a corporate culture that encourages the exchange of information and knowledge.

However, to be ready to respond rapidly to unpredictable changes in the future, managers also need to develop their own research competencies, as decision-making requires a solid basis of continuously updated analytical materials and strategic foresights.

Maccoby M. (2015), proposed the following system of abilities which would enable the management aspiring to leadership to form strategic intelligence:

- Foresight: the ability to anticipate trends that can pose a threat to an organization or pro- vide opportunities.
- Visioning: the ability to conceptualize an ideal future state and to involve others in its implementation.
- Systems thinking: the ability to perceive, synthesize, and integrate elements that function as a whole in order to achieve a common goal.
- Motivating: the ability to motivate different people to work together to implement the vision that has been created.

- Partnering: the ability to create strategic alliances with individuals, groups of people, and organizations.

The largest risk to strategic intelligence is the occurrence of blind spots, or places where managers fail to see or comprehend crucial information. Examples of these areas are inability to defining the boundaries of the industry, failing to recognize the preferences of new markets, and undervaluing competitors. The risks associated with blind spots can be minimized in a number of ways, though. To that goal, it is advisable, for instance, to respond to the questions below:

- What are the current trends? The top managers should make sure that they understand global changes in the areas of demographics, state regulation, and consumer markets projected for the next five or ten years.
- Where does the majority of industry innovations come from? How will the forthcoming developments affect the company and its business segment? The top managers should look at the adjacent markets beyond their industry, as this is where the competition will emerge in the future.
- What modern technologies may lead to new forms of much-needed products or services? The same basic technologies may be used in completely different ways while developing a new product and increasing its added value.

Table 7.1: Organizations with high and low information infrastructure maturity

(Gileva, T.A , 2019)

Criteria	Maturity level – high	Maturity level – low
Predominant role of IT technologies	Strategic	Operational
Corporate culture	Proactivity, trust, openness to innovations are encouraged	Reactive decision-making, skepticism, resistance to changes
Defining management attention	Openness to new ideas	Control of processes and operations
Attitude toward training	Consistency of training, mistakes being structured to create the 'experience base'	Training is only necessary to know how to properly perform functions; analysis of mistakes being a waste of time
Information flows	Possess high speed and are independent on the organizational structure. Information is provided on time in the required quantity and quality	Greatly controlled and protected. There is always a lack of information, and it is provided with a delay

What needs do modern-day clients have? Which of these requirements is met, and which isn't? Analysts should continuously monitor this "area" to comprehend consumer behavior and create scenarios for product expansion.

What are the fundamental skills of the organization and how may they be applied? It is imperative to consistently seek out opportunities for more business expansion and diversification.

As shown in the table above, only companies with highly developed information infrastructures can continuously develop their strategic intelligence. The information infrastructure is a fundamental tool for supporting strategic intelligence.

2. Artificial Intelligence definition and characteristics

Nowadays, Artificial Intelligence (i.e. AI), as a result of the fourth technological revolution, is redefining and transforming relevant management processes of industries (Kolbjørnsrud et al., 2016). Industrial applications impregnated by AI make a big change in terms of solving several production problems and fostering critical thinking, which finally improves performance levels by reducing costs and gaining time (Faccia et al., 2019; Unhelkar & Gonsalves, 2021).

Tech- startups are at the forefront of this revolution brought about by AI tools at an unparalleled pace. In other words, AI presents an opportunity to deliver innovative business models that may leapfrog traditional solutions and reach the underserved in emerging markets. The business model represents a representation of an organization's underlying core logic and strategic choices to create and capture value inside a value network (Shafer et al., 2005).7.

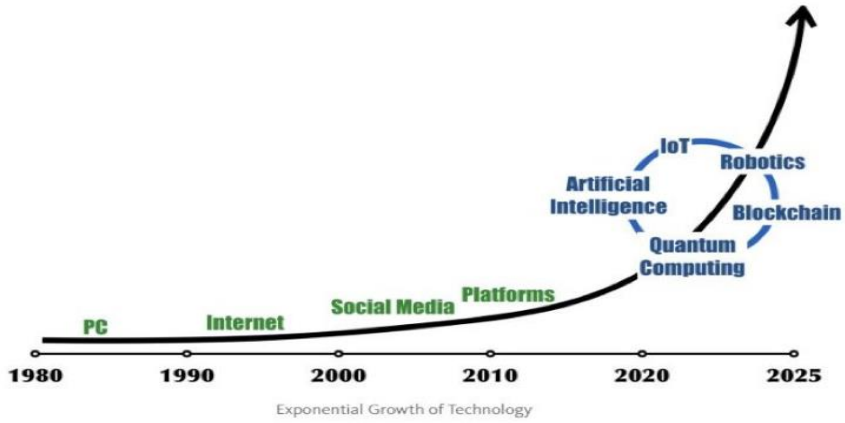
Moreover, harnessing the power of AI helps promote shared prosperity and solve critical development challenges, although much remains to be done in the organization to increase competitiveness thanks to commercial opportunities resulting in terms of re-engineering products or services (Wamba-Taguimdje et al., 2020).

So, what is the possible contribution of Artificial Intelligence tools to improve strategic intelligence practices?

2.1. Definition

According to Schoech et al., (1985), Artificial Intelligence appeared as a discipline in the 1950s, but its first commercial application was seen until the 1980s. Its success has accelerated due to Moore's Law (1965) analyzing the exponential growth of available computing power. Then the historical evolution of technologies shows that we are in the presence of a real transition from the Internet stage to Artificial Intelligence, Blockchain, Robotics, and other disruptive technologies as we can see in the figure below.

Figure 7.1: Exponential growth of technology



Artificial Intelligence means "the science and engineering of making machines intelligent, particularly intelligent computer programs (McCarthy J., 1956). In other words, AI represents an imitation of human cognition by computers (Jha & Topol, 2016).

Moreover, according to Y. Yang & Siau, (2018), AI is related to software that imitates human intelligence by using computer science, statistical models, mathematical formulas, and data science to resolve complex problems. Scott & Scott, (2002), argue that AI accurate predictions which can be made by algorithms through using statistical techniques like classification, regression, ranking, and clustering.

Furthermore, AI offers the aptitude of firms to use data, processes, methods, and people to generate new possibilities for automation, decision-making, collaboration, and other advantages that would not be possible by conventional means (Schmidt et al., 2020). Indeed, AI is characterized by the potential to bring unprecedented benefits to humanity, and the continued evolution of scientific research aims to explore ways to maximize these advantages (Russell et al., 2015).

Additionally, AI is impacting organizations in three forms. Firstly, it aids improve contact and experience using AI mediators. Secondly, it processes data to simplify the expectation of events and also the making-decision process, and thirdly, it supports change in human skills and behaviors (Soni et al., 2019).

For Murray (2018), a significant stake in global organizations would use AI tools to redesign business processes and increase competitiveness. Undeniably, different fields are concerned with AI applications, such as marketing (Kumar et al., 2019), finance (Kumar et al., 2019), besides social sciences (Sartori & Theodorou, 2022), and medical sciences (Jiang et al., 2017).

AI tools can also increase customer value and an organization’s profits due to a full approach to business optimization by analyzing business strategy, commercial process modeling, and quality assurance. Charif & Awad, (2014), argue that AI leads innovation when real-time data analytics are cohesive into business processes by developing impactful ways to advise industries with actionable tasks and probable impact.

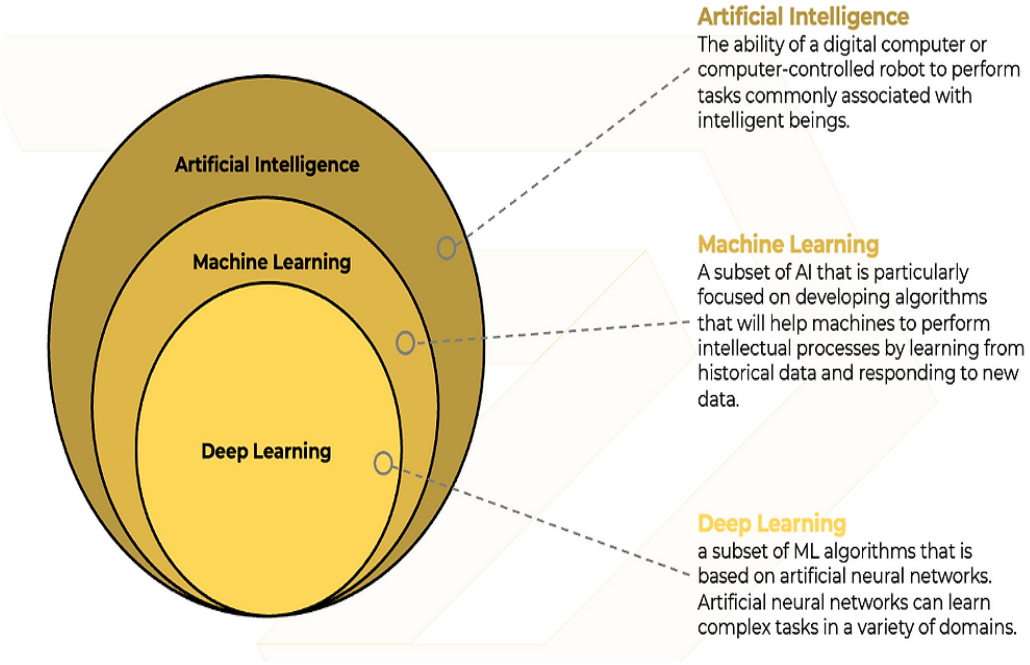
According to Agrawal et al., (2018), the extensive application of statistical learning techniques has led to notable cross-fertilization and integration within AI, statistics, machine learning, and other fields. The development of common theoretical frameworks, as well as the accessibility of data and processing power, can be advantageous to organizations. Since they help with increased productivity and better decision-making, algorithms that enable accurate future predictions have been recognized as an organization's competitive advantage. Thanks to AI tools organizations can practice strategic intelligence to detect opportunities to seize and threats to avoid.

AI has stimulated several research topics, from economics to entrepreneurship, as economists believe that further research is necessary to maximize AI's economic advantages and reduce its possible negative implications especially for novice entrepreneurs.

2.2. Artificial Intelligence techniques

According to Kitchin and Lauriault, (2015) Artificial intelligence includes a diversity of terminologies, namely: Machine Learning (ML) and Deep Learning (DL) techniques, as presented in the figure below.

Figure 7.2: defining Artificial Intelligence, Machine Learning and Deep Learning



Source: https://www.globalperformanceinsights.com/

While traditional AI problem-solving relies exclusively on specialized approaches, ML and DL seek to repeatedly evolve a knowledge of data without the need to comprehend any rules. By optimizing a performance criterion and reducing the error rate at each learning stage, the system can develop and generate predictions automatically, adjusting its settings if needed (Alpaydin, 2016).

Besides, we note also the following types:

2.2.1. Artificial Neural Networks

In real-world applications, non-linear functions are frequently described by artificial neural networks (ANNs), a sophisticated modeling tool. ANNs are composed of basic processing units called "artificial neurons," which are triggered by a "activation function." In other words, ANNs are a type of deep learning that mimics the structure and function of the human intelligence in terms of image, natural language processing, speech recognition and outcome prediction. According to Abiodun et al. (2018), ANNs can be expanded into hybrid models for increased accuracy and can operate in either supervised or unsupervised modes.

2.2.2. Natural Language Processing

A branch of artificial intelligence called natural language processing, or NLP, focuses on teaching machines to comprehend and interpret human language.

NLP integrates methods from computer science, computational linguistics, and machine learning. It’s employed in chatbots, sentiment analysis, and language translation, among other things.

2.2.3. Robotics

Several sectors, including manufacturing, healthcare, and transportation, use robotics. The field of robotics within artificial intelligence is concerned with the design and development of autonomous robots. It combines aspects of computer science, electrical engineering, and mechanical engineering.

2.2.4. Automation

Automation is the process of using technology to carry out operations that otherwise call for human involvement. Finance, transportation, and manufacturing are just a few of the businesses that use it. By automating repetitive operations, automation can help increase efficiency and decrease costs.

2.3. AI characteristics and capabilities evolution

AI research grew rapidly between 1957 and 1974 as computers became more affordable, faster, and able to store larger amounts of data. Algorithms for machine learning also advanced, and individuals got better at determining which algorithm to use for a given situation. However, there were few and far between popular applications, and funding for AI research started to dry up. In the 1960s and 1970s, AI researchers like Marvin Minsky had an optimistic outlook that didn't seem to be gaining traction.

In the 1980s, advances in computing and data storage brought AI research back to life. An AI renaissance was fueled by fresh money and algorithms. John Hopfield and David Rumelhart made "deep learning" techniques prominent around this time, enabling computers to learn through experience.

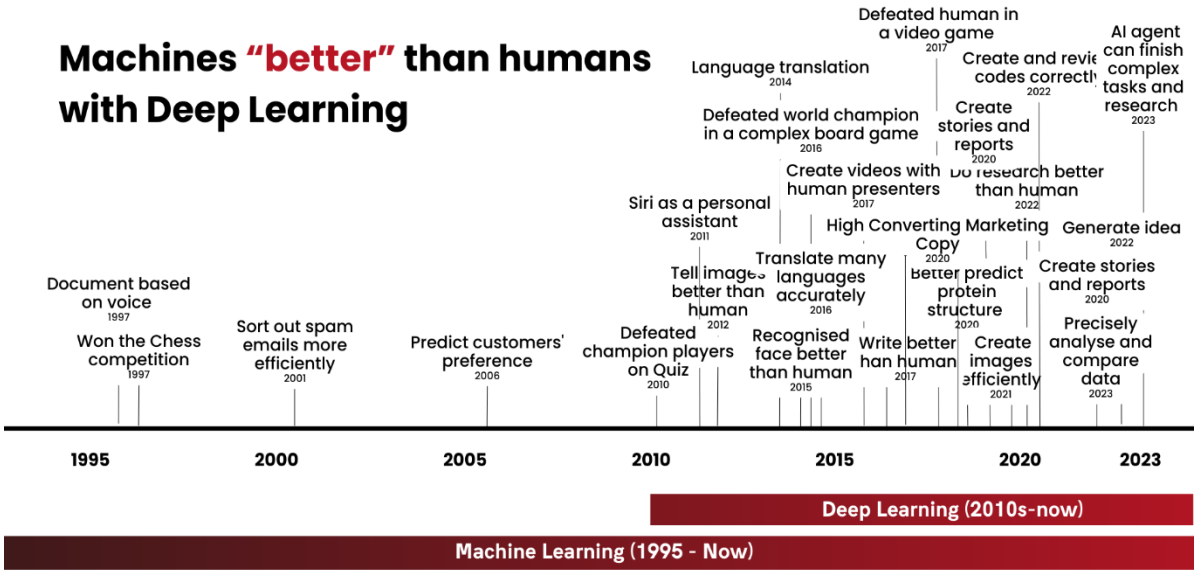
Following this milestone, a few historic occasions occurred. Grandmaster Gary Kasparov, the current global chess champion, was defeated in 1997 by IBM's Deep Blue computer. The current world chess champion had never before lost to a computer. The same year saw the general release of Dragon Systems' speech recognition software. By traveling 131 miles on an uncharted desert track without assistance, a Stanford robot vehicle won the 2005 DARPA Grand Challenge. Two years later, a car from Carnegie Mellon University took first place in the DARPA Urban Challenge, having driven 55 miles on its own while avoiding traffic jams and obeying all traffic regulations.

Large language models (LLMs) that have been trained on enormous amounts of unlabeled data have emerged as the foundational models for a variety of specialized tasks in 2018. AI skills have advanced with the introduction of more current models, like DeepMind's Gato in 2022 and OpenAI's GPT-3 in 2020. A far greater variety of applications can now benefit from AI thanks to these generative AI models.

With generative AI, new text, images, or other content can be created based on input prompts, whereas previous uses of AI were primarily about recognition (e.g., identifying defective parts in a product line), classification (e.g., recognizing faces in a video feed), and prediction (e.g., determining the path of an autonomous vehicle).

The figure below shows the capabilities evolution of AI over time.

Figure 7.3: Capabilities evolution of AI (1995-2023)



source: https://courses.cfte.education/skills-in-ai-world-2023/

According to Bawack (2019), the capabilities of AI have evolved over time due to Deep Learning and Machine Learning evolution. Indeed, to perform tasks and solve complex problems, the key capabilities of AI lead organizations to communicate, comprehend, know, learn, listen and speak, think, search, reason, process data, and recognize patterns. Those capabilities emulate human intelligence and performance in several fields.

3.AI tools and entrepreneurship success through Strategic Intelligence

When making difficult decisions that call for a multi-criteria assessment of the viability and consequences of certain actions, strategic intelligence is especially crucial during the digital transformation process. It functions as a radar scanning the periphery and aids in setting the priorities in the context of new product and investment areas in the most impartial way possible.

The presence of anticipatory training systems and their capacity to evolve into self-learning ones are critical components for the efficient operation of strategic intelligence within an organization. The organization fosters an ongoing interchange of ideas, expertise, and information while consistently enhancing the competencies of its teams and employees,

enabling them to quickly adjust to changes in the market. Without this prerequisite, strategic intelligence runs the risk of becoming a collection of expensive intellectual support tools with nebulous roles and user-specific orientation, failing to fulfill its primary aim of conveying foresight and readiness for the future.

3.1. AI tools and entrepreneurship success

According to Mishra and Tripathi (2021) and Sjödin et al. (2021), the majority of AI studies have concentrated on integrating AI into various business model types, the role of AI tools in business model innovation, and how AI technology has allowed current enterprises to build business models for the digital era.

Indeed, AI tools used proactively can spur the development of novel business models, claim Lee et al. (2019). The most common use cases, according to studies, might be risk assessment (Khalid et al., 2022) and projecting the evaluation of business plans (Verma et al., 2021) to gather subjective data about an organization according to Rambocas and Pacheco (2018). For Reutterer et al. (2017), Artificial Neural Network algorithms, machine learning, and fuzzy logic are integrated into artificial intelligence leading novice entrepreneurs to anticipate a business's profitability and success by identifying useful insights.

Furthermore, according to Rogge-Solti and Kasneci, (2014), it’s capable of automatically identifying potential abnormalities in business processes and providing recommendations. The practicality and feasibility of their business ideas determine whether aspiring entrepreneurs are successful in starting a new company. Foss and Saebi, (2017), explain that business models are therefore crucial for entrepreneurs to organize their new ventures.

Indeed, business models also assist novice entrepreneurs in managing the unpredictability that comes with the difficult startup phase. Nevertheless, Tomy and Pardede (2018), argue that novice entrepreneurs lack the tools necessary to assess their influence on company performance and have insufficient resources to create a successful business model.

According to Hosaka (2019), artificial intelligence (AI) applications are more accurate at predicting results since they don't depend as much on human judgment and may recognize patterns that might be too subtle for people to notice. Fruhwirth et al. (2020) went on to say that inexperienced business owners need innovative approaches that combine data and analytics perspectives. According to the authors, data analytics could make use of the ability of business models to provide desired results in outcome-driven business models.

Consequently, software and digital instruments help create efficient ex-ante evaluations of business models, claim Szopinski et al. (2020). When digital technologies and AI are used together, data becomes a vital resource for boosting confidence in the parameters of the business model (Engelbrecht, 2016), and finally, AI can have intriguing commercial effects.

3.2. Predictive future of AI use in strategic intelligence

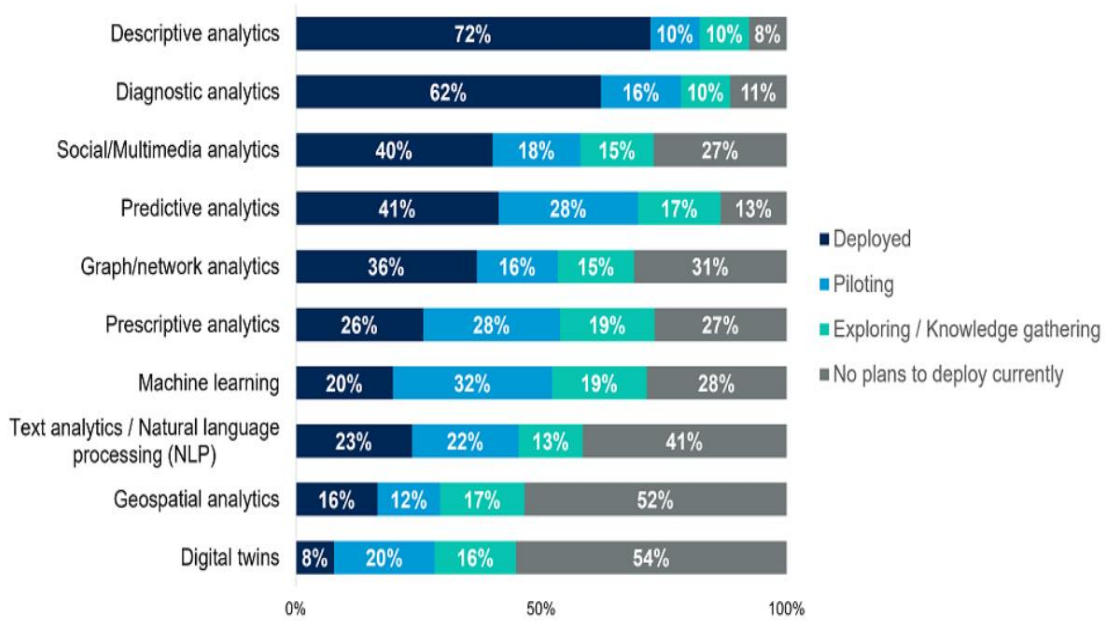
79% of corporate strategists believe AI and analytics will be essential to their success over the next two years, according to a Gartner survey (2023).

Approximately, half of the activities involved in strategic planning and execution may be automated, according to strategists; at the moment, just 15% are. Between October 2022 and April 2023, 200 corporate strategy leaders from a range of industries, revenue levels, and company sizes in North America, Western Europe, Asia/Pacific, and Australia/New Zealand participated in the study. David Akers (2023), Director of Research at Gartner, stated that one of the main possibilities and difficulties facing corporate strategists this year is leveraging analytics and AI to make more effective, perceptive strategy decisions.

"Strategists have advised their clients for years that going digital is essential if they want to maintain effectiveness and competitiveness. Presently, they seem prepared to implement those recommendations in their workflows.

Although the majority of corporate strategists stated that they use diagnostic and descriptive analytics, fewer than half indicated that they use more sophisticated tools like graph, prescriptive, or predictive analytics as shown in the figure below. Therefore, these tools represent the several results of strategic intelligence process.

Figure 7.4: Corporate Strategists' Use of Analytics (% of Respondents)



n = 209, excludes "discontinued or planning to discontinue use"
Q: Please review the below list of analytics techniques and indicate if your Corporate Strategy Function is currently using or planning to use them? Please select one answer. Source: Gartner 2023 Strategy Leader Technology Survey
Note: Numbers may not add to 100% due to omission of a "discontinued or planning to discontinue use" option.

Source : Gartner July 2023, https://www.gartner.com/en/newsroom/press-releases/2023-07-05-gartner-survey-finds-79-percent-of-corporate-strategists-see-ai-and-analytics-as-critical-to-their-success-over-the-next-two-years

According to the survey, only 20% of strategists said they worked with AI-related tools like natural language processing or machine learning. Still, a sizable portion of strategy executives stated they are either testing these technologies or looking into possible applications. As an illustration, 51% of respondents stated they are looking into machine learning, while 45% said the same about predictive analytics.

4. Opportunities and Risks AI

According to Davide Strusani and Georges Vivien Houngbonon (2019), the opportunities offered by AI tools as well as their risks are presented in the table below.

Table 7.2: Opportunities and Risks AI (Strusani & Houngbonon G., 2019, p3)

Opportunities	Risks
• New products and business models—including leapfrogging solutions, solutions for bottom-of-pyramid individuals, and easier access to credit • Automation of core business processes—leading to lowerproduct costs • Human capital development • Innovation	• Obsolescence of traditional export-led path to economic growth • Increased digital and technological divide • Transformation of job requirements and disruption of traditionaljob functions • Privacy, security, and public trust

AI has the potential to significantly broaden and boost development prospects in emerging economies in a variety of manner.

Lower manufacturing costs can be achieved by automating essential business operations and investing in human capital development, which will increase business efficiency. Productivity growth facilitated by AI increases output and employment directly and indirectly through higher consumption.

Enhanced accessibility to finance, a vital benefit that AI technologies are already providing, together with cost savings from the automation of specific tasks might work together to lower overall business expenses. Market and industry competitiveness may rise as a result, as well as the number of bankable business prospects. With the backing of product innovation in the form of new business models and leapfrogging solutions designed to target previously unserved and underprivileged people, AI solutions can also aid in overcoming the lack of infrastructure and significant information asymmetries in emerging countries. Artificial intelligence has the potential to significantly reduce costs in many areas of essential business

operations, including marketing, accounting, inventory control, and human resources management. Using AI technologies, for example, the employee recruitment task of reviewing dozens of candidate profiles throughout the hiring process can be automated.

Thanks to automation, investments in human capital may be made more profitably, which also boosts productivity. With carefully targeted and personally tailored human capital expenditures, AI has the potential to transform high-quality education and learning. Combining AI with online learning presents a chance to increase learning and employment in emerging countries, as well as provide access to inexpensive education. Edtech businesses with the potential to provide upskilling recommendations are those such as Coursera, Andela, and Udemy, which are producing data on student performance in emerging markets.

Due to AI's ability to automate credit scoring a procedure that traditional financial institutions require human resources for financial services may become more accessible. Mobile phone data can be parsed by machine learning algorithms to provide customers in developing nations with quick credit scores. The scoring algorithm keeps getting better by incorporating credit history information once a consumer is offered a loan offer. Branch, a fintech startup in Africa (Kenya and Nigeria), India, and Mexico that provides microloans to clients without bank accounts and first-time borrowers, is an illustration of this strategy in action.

AI is also fostering innovations in business models by automating the delivery of more reasonably priced services, opening up the market to underserved customers. To match customers with taxi drivers in Cote d'Ivoire at a cheaper cost than traditional taxis, TaxiJet, a ride-hailing startup with a business model like to Uber's, uses artificial intelligence.

Increasing productivity, lowering entry barriers, and developing and expanding markets can all lead to more output and, eventually, higher consumption. Market development and expansion can boost demand and contribute to employment creation, which benefits the economy as a whole. For example, by increasing the supply of goods and services, increasing the productivity of assets, and igniting demand in remote areas, online marketplaces that use AI solutions across Africa are predicted to generate almost 3 million employments by 2025 according to the Boston Consulting Group study done in 2019.

However, Artificial intelligence and other disruptive technologies pose major risks to social and economic inclusiveness. The nature of labor is changing due to technologies, which may also make national disparity worse. The demand for labor and technology-enhancing abilities might change, rewarding those who have access to new technologies and talents at the expense of others who do not. Highly skilled routine tasks could be affected by developments in AI and ML. Therefore, there will be a priority placed on talents that are complementary to technology, such as creative, socio-behavioral, and technical skills, as these will promote higher adaptability and lifetime learning.

Advanced artificial intelligence (AI) applications, such natural language processing, have the potential to displace outsourced customer care services, which employ thousands of people in nations like Morocco, South Africa, and Vietnam. Similarly, autonomous AI might replace hundreds of thousands of labor in Ethiopia and Bangladesh by allowing machines to sew. Job displacement could further widen the gap between developed and emerging

countries, increase inequality within countries, and limit opportunities for upward mobility for the emerging middle classes. This is accentuated by the declining significance of cross-country labor cost arbitrage and combined with slower output growth.

Because they are more competitive, successful AI-enabled firms draw in more clients and gather more data, which enhances their AI algorithm and strengthens their original competitive advantage. When mobile operators use artificial intelligence (AI) to enhance their distribution networks and provide electronic financial services, this is frequently the case. Businesses won't be able to seize new possibilities, which might lead to greater productivity gaps, greater first-mover advantages, and growth accelerations restricted to particular industries and regions if the climate that allows them to compete does not change.

A developed digital economy and an entrepreneurial ecosystem that can spur innovation and draw funding are critical barriers to the adoption of AI solutions, as is the lack of local AI expertise and government support in crucial areas like open data access, system interoperability, trust, and acceptance of trial and error.

Advanced AI applications like speech and face recognition need a broadband connection to transfer bandwidth-intensive items like audio and images, but basic AI applications like credit scoring and online platforms (whether mobile or fixed) can rely on conventional connections like 2G. Similarly, a 5G-like network architecture and a web of interconnected objects are needed for autonomous vehicles to operate smoothly.

Despite being an essential component of high-speed computation and parallel computing, data centers are still lacking in many emerging economies, especially in Africa.

Chapter 8: Strategic Intelligence and Strategic Foresight

The characteristics of today's environment are increasingly complex, unpredictable, and turbulent. Effectively, recent years have been marked by unusual events and very challenging with COVID-19, climate change, wars, hunger, and a global energy crisis. These challenges necessitate quick response and action. Besides, they cannot only be approached through crisis management, but should be seen as signs of deeper shifts and transformations (H. Grove et al., 2023).

According to Kristalina Georgieva, manager director of the International Monetary Fund, in her speech presented on 6th October 2022 at Georgetown University, Washington, "We are moving from a world of relative predictability to a world with more fragility, greater uncertainty, higher economic volatility, geopolitical confrontations, and more frequent and devastating natural disasters- a world in which any country (or company) can be thrown off course more easily and more often".

Moreover, these challenges represent signs of long-term underlying megatrends which constitute a key element of strategic foresight playing a crucial role in the development of future global industrial strategies. As companies face disruptions and crises, the boards of directors and management teams must adopt a proactive and strategic approach, acknowledging that the future will not be what it once was. To guarantee competitiveness, organizations should identify upcoming opportunities and threats very early and integrate them into strategic planning on time. Instead, they must try to acquire multiple views that describe a whole window of opportunities.

By embracing scenario management, as an approach for strategic foresight, adaptability, and transformative thinking, companies can position themselves not only to survive but also to thrive in the future.

Therefore, the Strategic Foresight process involves scanning the external environment to capture weak signals of change, identifying emerging trends and potential disruptors, and also exploring multiple scenarios to inform the strategic decision-making process. Indeed, Strategic Foresight represents an increasingly important discipline for organizations seeking to stay ahead of the curve in an ever-changing and unpredictable environment. It seems that strategic intelligence enhances strategic foresight to allow leaders to make effective strategic decisions.

1. Strategic Foresight Definition

Strategic Foresight represents a capability of organizations to explore, imagine, and anticipate the future in an open yet structured manner (Haarhaus & Liening, 2020; Hamel et al., 2022; Hery &Malemfer, 2020; Nascimento et al., 2021; Rohrbeck & Gemunden, 2011; Scolic, 2020; Devesa et al., 2021; Volkova & Dominiece-Diasa, 2019).

Strategic foresight is the systematic process of gathering future-relevant information through environmental scanning activities to extrapolate different plausible scenarios that could benefit the strategic development of an organization. Thus, strategic foresight can help identify and explore opportunities emerging from different signals and drivers of change shaping the decades to come (Grove, Clouse, Xu, 2023, p 9). It can act as a trigger for developing strategic options navigating the complexities in a context full unknowns. Moreover, human capital can anticipate and prepare for future opportunities and challenges through scenario planning and align their innovation planning and goals accordingly.

The results of research established by PricewaterhouseCoopers and presented in the 26th Annual Global Survey (2023) on one hand, and the findings of the research established by the World Economic Forum on other hand (Woeffray & Carvalho, 2023) show that:

- Nearly 40% of chief executive officers do not think their companies will be economically viable in the next decade if they continue on their current path and do not transform.

- 75% of organizations are not prepared for the pace of change within and around their industries, such as renewable energy for the oil and gas industry.

However, despite the urgency of the situation, strategic foresight remains an underexplored area in the corporate governance literature (Fergnani, 2022).

2. Scenarios Definition

A scenario is a generally intelligible description of a possible situation in the future, based on a complex network of influence factors. A scenario project supports entrepreneurial decisions by the creation and use of scenarios. Scenarios can be used to obtain several different ends: scenarios are internally coherent pictures of possible futures. They are among the most useful tools and have a wide range of uses. For example, they can dramatize trends

and alternatives, explore the impacts and implications of decisions, choices, strategies, and provide insights into cause-and-effect sequences (Slaughter, 2000, p 117).

3. Scenario Project Phases

According to Fink & Shlake (2000, p38), scenario project typically runs through five phases, namely:

1.Scenario preparation: this process focuses on a particular object, an enterprise, a product, or a technology.

2.Scenario field analysis: is created and precisely adjusted to the decision-making process. The most frequently used scenario fields are corporate scenarios, industry scenarios, market scenarios and global scenarios.

3.Scenario prognostics: is the heart of the scenario creation, where the view into the future is carried out.

4.Scenario development: in this phase scenarios rely on plausible and consistent combinations of projections.

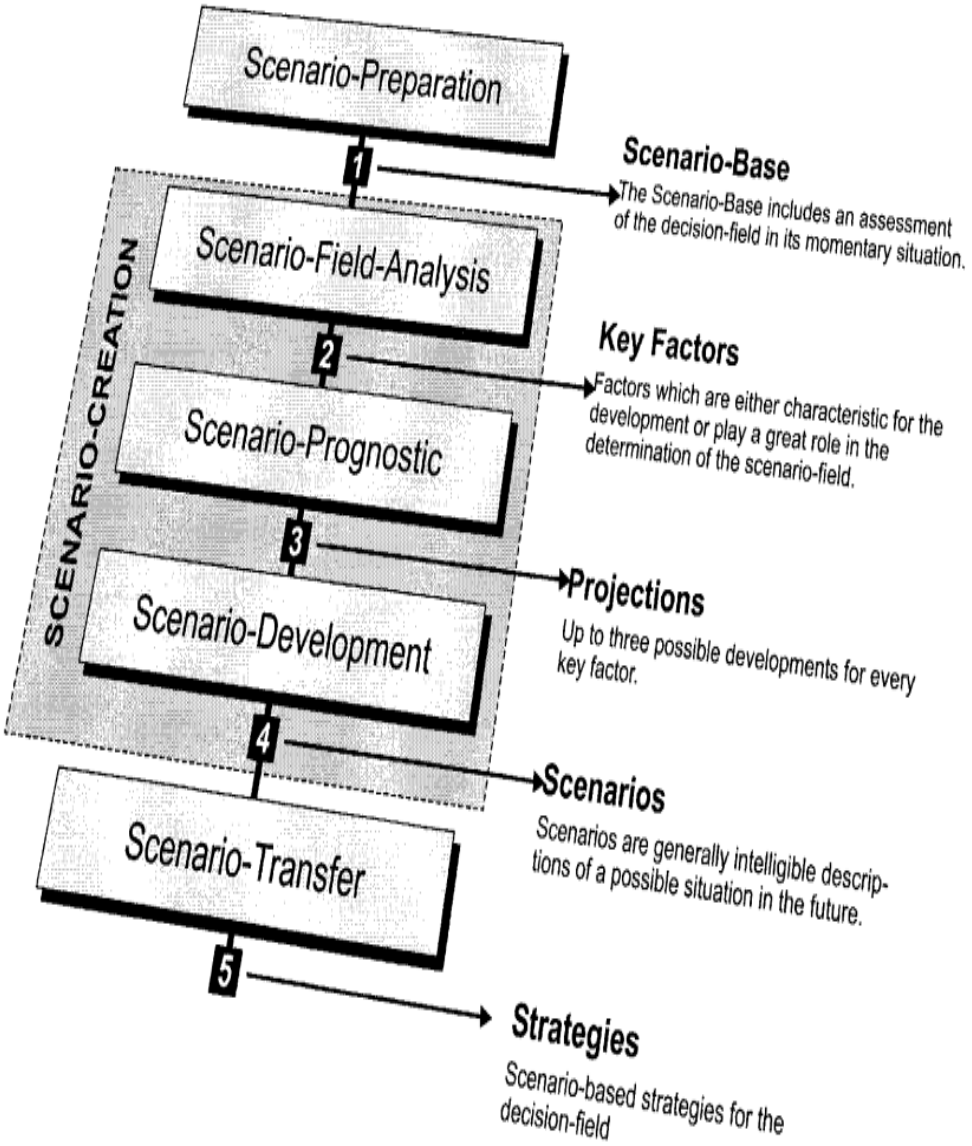
5.Scenario transfer: using scenarios in strategic management begins with an analysis of the effects they have on the business. Using this consequence, analysis is rehearsing the future.

After the identification of opportunities and threats in the external environment, organizations have to develop different strategies. For Makridakis (1990, p 170-171), corporate strategies can be carried out one of three ways, depending on the specific planning and the corporate culture of the organization:

- planning-oriented strategy founded on the belief that some environmental fluctuations can be predicted and strategists can make specific decisions and take specific actions in anticipation of forthcoming changes;
- preventive strategy based on reacting to environment changes, and the aim is to cope with unforeseen change;
- and proactive strategy based on the belief that a wide range of environmental changes are unpredictable and purposeful action can be taken by the organization to bring about desired change that would not have occurred otherwise or would have happened later.

The figure below shows the five phases of scenario approaches.

Figure 8.1: The five phases of scenario management (Fink & Schlake, 2000, p 39.)



4. The key principles of strategic foresight

There are five key principles underpinning strategic foresight approach. These principles include:

4.1. Systems thinking

Strategic foresight considers the complex and interdependent systems that shape the future and seeks to understand how different trends and drivers of change interact.

According to Woeffray & Carvalho (2023), in order to have a better strategic foresight level, human capital need to use three types of thinking, namely:

- Future-open Thinking which is related to the ability to embrace uncertainty and to explore, think about, and perceive alternative futures.
- System thinking including the ability to explore the bigger picture, to analyze factors and interactions that could contribute to a possible outcome.
- Exponential thinking related to the ability to fully comprehend that something very marginal today could become very prominent and impactful very quickly.

4.2. Anticipation

Strategic foresight involves a forward-looking approach that seeks to anticipate and prepare for different possible futures rather than simply reacting to events as they unfold. Moreover, strategic foresight is based on the following fundamental elements:

- The recognition and acceptance that the future is a space of possibilities that cannot be predicted;
- The need to focus on the long-term;
- Embracing peripheral and systemic views;
- Looking above and beyond;
- And the inclusion of a multiplicity of perspectives to overcome potential individual and group biases.

In other words, strategic foresight can support organizations building future preparedness through exploration, orientation, innovation, visioning, and strategy. Innovation identify and explore ideas that can propel and ignite new avenues for growth and impact. Visioning include strategic vision considering what is desirable and what can happen, and what can be

done in an open, complex, and uncertain context. Strategy informs and stress-test the organization's strategic options and broader strategy.

4.3. Tools

There so many tools used in the area of strategic insight such as:

- Scenario planning used to explore multiple plausible futures and to identify the key uncertainties and critical factors that could shape the future.
- Horizon scanning is about identifying and analyzing emerging trends and weak signals that could significantly impact on the organization in the long term.
- Trend and Technology Radars which make foresight work tangible, and improve collective decision-making and reporting to management;
- Delphi Method which involves collecting and analyzing expert opinions on a particular topic or future trend to understand possible outcomes better and develop informed strategies;
- Backcasting which is envisioning a desired future state and working backward to identify the actions needed to achieve that vision;
- and Trend Analysis involving identification and analysis patterns and trends in data over time to gain insights into potential future developments.

However, the most well-known and powerful methods are Scenario planning and Horizon scanning. The table below presents the differences between those both tools and an example of companies that use it.

Table 8.1. Comparison between Horizon scanning and Scenario planning

Horizon scanning	Scenario planning
Include 5 items, namely: Megatrends, Trends, Weak signals, Wildcards, and Uncertainties.	Simulation of possible futures but are not predictions. They articulate the 5 items of horizon scanning, in stories about the future
Example : Ageas Group, a Belgian insurance company which developed Think2030 Horizon Scan Project	**Example:** Royal Dutch Shell's Strategic Planning Group which developed Scenarios for more than 5 decades in exploring possible futures
Result: 4 types of trends identified : no-brainers; speed-ups; observatory; and parking	**Result**: Managing internal change by foresight, rather than by crisis, is only possible if the change in the environment is seen on time. The ability to learn faster than your competitors may be the only sustainable competitive advantage" (Arie de Geu, 1990)

Source: established by us according to Grove, Clouse & Xu, 2023, p 9-10.

4.4. Human capital and collaboration

Strategic foresight success depends mostly on human capital. Collaboration between the different actors within and without the organization is needed for better strategic foresight level. The scheme below shows that all employees within the organization must be involved in the strategic foresight process.

Also, there is two critical elements to building strategic foresight successfully.

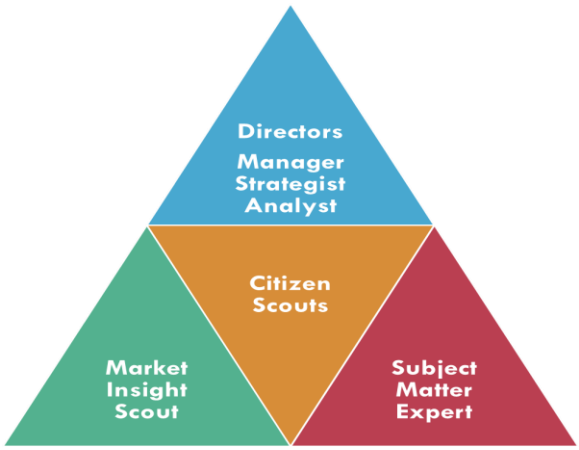
First, it needs to be championed by the top leadership and decision-makers.

Thanks to teamwork the following tasks can be achieved.

Second, companies that effectively utilize foresight capability tend to have in common a drive to democratize foresight across their staff.

Foresight is practiced both centrally and in decentralized units, being approached as an organization-wide skill, capability, or even culture.

Figure 8.2: Strategic Foresight actors



Thinks to teamwork the following tasks can be achieved:

- Researching emerging trends and technologies that may impact the organization's future and develop a roadmap for future innovation;

- Developing scenarios that explore different possible futures for the organization;

- Analyzing data and synthesizing insights that can inform the organization's strategic decision-making process;

- Creating reports and presentations that communicate foresight insights to key stakeholders;

- Collaborating with other departments within the organization to ensure that foresight insights are integrated into the organization's strategy;

- Identifying potential opportunities and risks that the organization may face in the future;

- Providing training and support to other departments within the organization to help them use foresight insights in their strategic decision-making process.

Human capital, as an intangible asset, plays a crucial role in the strategic insight process through partnering with other stakeholders in the organization. In other words, the foresight team may have access to valuable insights and knowledge about the future, but they must work collaboratively with other stakeholders to translate these insights into actionable strategies

The organization's executive leadership team is often the primary audience for foresight insights. They are responsible for making strategic decisions that will shape the organization's future, and foresight insights can help them make informed decisions that consider potential future scenarios.

Also, the innovation management team is responsible for identifying and developing new products and services to help the organization stay ahead of the competition.

The foresight team can help the research and development department, which is responsible for developing new technologies and products, through identifying emerging technologies and trends that may impact the organization's research priorities and indeed guide its investments in R&D field.

Besides, the foresight team can help the strategic planning team, which is responsible for developing the organization's long-term strategic plan, through anticipating future trends and developing scenarios that explore different possible futures for the organization.

Also, the foresight team can help the marketing and sales team to understand changing customer needs and preferences and develop strategies to meet those needs and consequently developing and implementing the organization's marketing and sales strategies.

On another side, partnerships with external stakeholders such as customers, suppliers, and industry experts can provide valuable insights into emerging trends and customer needs.

4.5. Action-orientation and communication findings

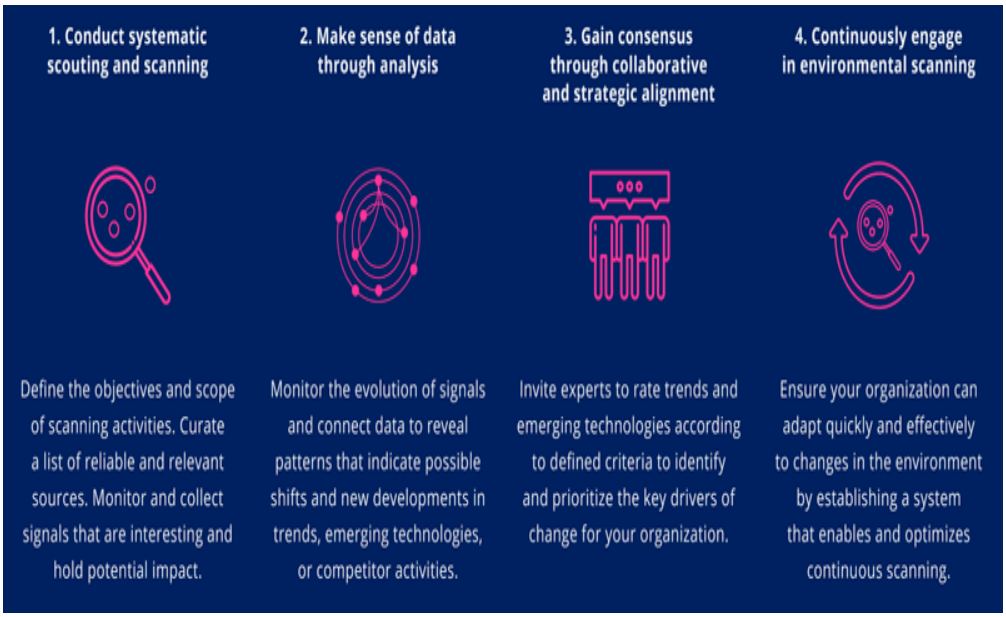
Strategic foresight is ultimately focused on action and seeks to inform strategic decision-making that leads organizations to better adapt to change, shape their desired futures, and build a more robust and effective approach to develop the capacity to navigate uncertainty and complexity with greater agility and resilience.

Besides, real communication of foresight intelligence is crucial for organizations to stay ahead of the competition. Thus, organizations that can interpret and apply foresight intelligence to their decision-making processes can gain significant market positioning, product development, and competitive advantages. Dedicated channels and formats for communication are essential such as reports, presentations, and newsletters.

The figure below shows the fundamental stages of the strategic foresight process starting from systematic scouting of the environment, then analysis of data, and gaining consensus through collaborative and strategic alignment. Finally, continuously engaging in environment scanning is needed to lead the organization to adapt quickly and efficiently to changes.

Therefore, by engaging with a wide range of internal and external stakeholders, the foresight team can ensure that their insights are relevant, actionable, and aligned with the overall strategy of the organization.

Figure 8.3: Strategic Foresight process



Source: https://www.itonics-innovation.com/strategic-foresight-guide

5. Measuring Foresight Success through Scenario Approaches

There are so many key performance indicators (KPIs) used for measuring strategic foresight success, through scenario approaches, such as metrics including the following elements:

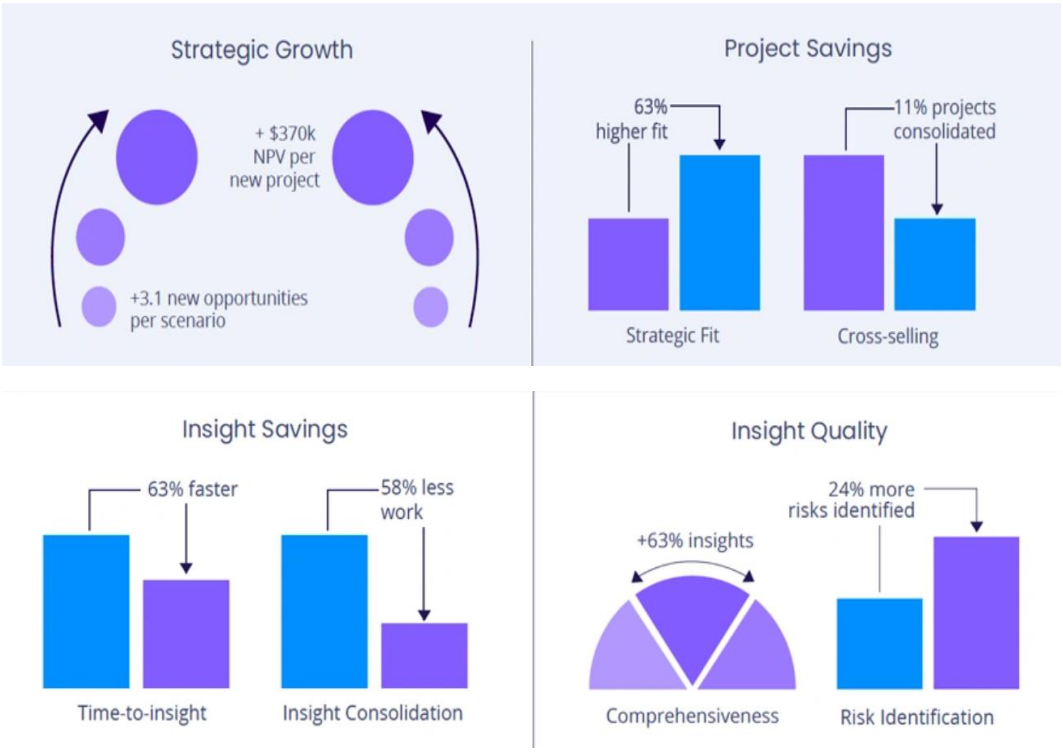
- the number of foresight projects completed,
- the accuracy of future predictions,
- the ability to identify emerging trends and technologies,
- and the extent to which foresight insights inform strategic decision-making.

Other ways to measure success include stakeholder feedback from senior management, customers, and employees (Surveys, interviews).

At its core, strategic foresight is a systematic and structured approach to anticipating and shaping the future.

The scheme below shows the different results obtained through strategic foresight in terms of performance.

Figure 8.4: Key Performance Indicators of Strategic Foresight



Source: https://www.itonics-innovation.com/strategic-foresight-guide

Through strategic foresight, organizations can realize strategic growth by detecting new opportunities in the external environment. It's the case of supplying new products or services or penetration to a new market.

Also, strategic foresight leads organizations to increase strategic fit and decrease time to insight and insight consolidation. Therefore, scenario approaches permit organizations to identify more risks. Increasing employee satisfaction and engagement level due to collaborative work.

Scenarios are an effective tool for helping an organization to be successful in its competitive environment (Fink, A., Shlake, O., 2000, p37)

By using a range of tools and techniques to analyze trends, identify potential disruptions, and explore multiple scenarios, strategic foresight enables organizations to be more proactive and agile in responding to emerging challenges and opportunities.

In other words, by cultivating foresight, organizations can address emerging trends, navigate uncertainties, mitigate risks, engage their workforce, seek new opportunities, and foster sustainable growth.

According to Sami Mkelaien, head of foresight at TELSTRA company, "Strategic foresight through scenario approach is not about predictions but rather about exploring the range of plausible and probable futures and ensuring that the future doesn't catch us by surprise. This goes hand in hand with rapidly adapting to changing conditions, and that's a skill we need more of, not less of."

According to Mietzner and Reger (2005, p235), scenario approaches lead organizations to have several strengths such as the following elements:

Scenarios do not describe just one future, but that several realizable or desirable futures are placed side by side (multiple futures).

The use of scenarios can change the corporate culture, compelling its managers to rethink radically the hypotheses on which they have grounded their strategy.

Scenarios are an appropriate way to recognize weak signals, technological discontinuities, or disruptive events and include them in long-range planning; as a consequence, the organization is better prepared to handle new situations as they arise and to promote proactive leadership initiatives.

Scenarios can improve the creation of a common language for dealing with strategic issues by opening a strategic conversation within an organization.

During the scenario process the aims, opportunities, risks, and strategies are shared between the participants which supports the coordination and implementation of actions. Indeed, the organizational learning and the decision-making process are improved.

The ways of building a scenario are very flexible and can be adjusted to the specific task/situation.

However, scenario approaches can present some weaknesses related to the time of making scenario building. Data and information from different sources have to be collected and interpreted which consumes more time.

Also, the qualitative approach has to put a strong emphasis on the selection of suitable participants/ experts, and in practice, this could not be an easy task to fulfill.

Chapter 9: Strategic Intelligence and Crisis Management

One of the more recent but historically significant ideas in management science is crisis management. The idea that organizations are subject to many crises has emerged as a result of the rapid changes in the political, social, cultural, economic, and technological fields. As a result, corporations are now required to concentrate on crisis management techniques and assess the efficacy and efficiency of various approaches. It is now clear that crises have an impact on all industries. This means that studying crisis management techniques is a crucial prerequisite that needs to be met. Organizations must thus embrace a mindset and strategy that complements these approaches, called strategic intelligence.

Beyond just considering how to confront and manage crises, strategic intelligence can turn crises into opportunities for the company in the future by determining the best course of action. As a result, the organization gets better and gains a distinct advantage over other organizations.

In order to anticipate and predict the future and to develop long-term plans that reflect their foresight and future vision, taking into account the modern technologies and rapid developments, organizations, regardless of the sector in which they operate, must adopt strategic intelligence. It also entails taking into account the organizational contexts, both internal and external.

1. Crisis Definition

A crisis is defined as a dangerous event that poses a serious threat to fundamental values and necessitates quick decisions in an extremely uncertain environment. Crises can take many different forms and result in increased losses and harm to the social, economic, and political systems.

They also develop and worsen with increased environmental uncertainty and fluctuations, which increases the demand on an individual's unprogrammed ability to make decisions (Xue et al., 2022). According to Baba et al. (2023), there is no denying the impending catastrophe, but it is difficult to come to a consensus on its constituent parts. Nevertheless, despite the ambiguity, the crisis has six features: it is uncommon, significant, high-impact, and ambiguous. It is urgent and involves high risks, as it is a situation in which the basic values of the organization are threatened and the stability of the organization and its stakeholders is destabilized, which calls for critical decisions, so crisis management has become a necessary and urgent need for the survival and prosperity of life.

2. Crisis Management

According to Abu Fara (2020), crisis management is a broad concept that encompasses planning for and handling a variety of emergency scenarios. It is also an integrated system that gives organizations a coordinated and orderly systemic response to a variety of crisis situations; this allows the organization to carry on with operations, continue to produce goods and services, make profits, and so on, all while the crisis is successfully managed.

In addition, the term "crisis management" refers to the administrative process that organizations use to address crises in the context of their preparedness, knowledge, awareness, and available resources, skills, and administrative patterns. This process includes not only dealing with crises as they arise but also preparing for them in advance, which calls for the availability of an operations room, trained teams, emergency equipment, and consideration for how to handle any losses that may arise from the crisis (Alkshali, 2015).

Over time, crisis management becomes more and more important. The biggest challenges are the size and unpredictability of these crises. To manage them better, many options support crisis management, including utilizing new tools, training staff, enhancing processes and methods, and modifying the environment and structural substratum (Fonio et al., 2023).

3. Crisis Management Styles

Different approaches have been taken to crisis management; there are classic approaches as well as non-traditional (or modern) approaches. Non-traditional crisis management approaches are seen as a better way to handle crises since they rely on creativity and innovation to confront crises and resolve them constructively rather than destructively as do the traditional approaches (Alkshali, 2015).

3.1. Changing Path

When faced with serious situations that cannot be prevented from getting worse, the changing-path approach is employed to veer off course and toward something less dangerous (Mahmoud, 2017). This method is also applied to crises that can be averted by rerouting their course to take other, more direct routes, which makes the task of containing them easier (Laznum, 2020, 44). According to Al-Zoubi (2022), this method is intended to handle serious and destructive crises that are hard to contain. The crisis driver's vehicle is reportedly being boarded and driven as far as possible, changing its course and trying to divert it into other routes away from the crisis' epicenter.

3.2. Crisis containment

In order to prevent the crisis from becoming more complicated, this approach relies on containing or capturing it to a limited level, freezing it at the point it has reached, and absorbing the pressure the crisis creates in order to lessen its destructive force (Al-Shafei, 2003). According to Karam (2018), the organization can lessen the crisis's impact and spread by containing it until it reaches a point when it freezes, absorbs the pressures it creates, and eventually loses its destructive force.

3.3. Crisis Fragmentation

The best approach in a dangerous or severe crisis is to fragment it. This involves looking at all the elements of the crisis to determine which forces are in alliance, defining the framework of conflicts of interest and potential benefits for the members of these alliances, and working to defeat them by forging artificial leaderships and generating gains and benefits for these trends that are incompatible with the alliances' continuation. This breaks the major crisis up into smaller, more manageable crises (Al-Sayed, 2004).

According to Al-Faqih (2012), this style of management looks at the forces and competing interests of the crisis and then breaks them down into small pieces. However, the risk of using this style is that it can cause chaos, which over time can turn the crisis into a bigger one.

3.4. Reserve mobilization

When there is a crisis involving raw resources or a lack of liquidity, this technique is frequently employed to identify weaknesses, vulnerabilities, and potential causes of crisis and to construct a precautionary reserve to be used in such an event (Abdulsalam, 2015). The reserve mobilization style, according to Al-Shafei (2003), is predicated on identifying vulnerable areas that the crisis's factors and causes can penetrate. This is followed by the creation of a preventive reserve, which serves as an extra line of defense against any breach that might happen in any of the identified barriers or those areas of vulnerability.

4. Strategic Intelligence and Crisis Management

Some researchers tested the impact of strategic intelligence on crisis management, such as the Sharif and Muhammad study (2023), which aimed to determine the reality of the practices of crisis management units for strategic intelligence dimensions at the University of Asyut, Egypt. According to the study, there is a relationship between the phases of crisis management and the dimensions of strategic intelligence. This is because staff skills have assisted universities in recognizing impending crises and developing strategies to either avert or lessen their harmful consequences. Looking ahead makes it easier to foresee the crisis and respond to it in a proactive rather than reactive manner. Systemic thinking makes it easier to take preventive action to lessen the crisis's negative effects. Having a future vision also makes it possible to evaluate the various devices and identify strengths and weaknesses. As for motivation, it helps with the best use of the resources at hand, seizing opportunities that arise with the crisis, and avoiding risks, but in terms of collaborations, it enables academic institutions to draw lessons and learned mechanisms to deal with crises.

On the other hand, Al-Asmari's (2022) study, which examined the effect of strategic intelligence on crisis management, was conducted in the Saudi banking industry in the Assir region. The study discovered that strategic intelligence has an impact on crisis management and that the four strategic intelligence dimensions—vision, systemic thinking, partnership, and motivation—are applied frequently. This provides a concrete example of the significance of strategic intelligence in crisis management and indicates that creating forward-thinking plans will aid in making better decisions when faced with crises.

Yassin's (2020) study at Hamdaniyah University in Iraq examined how strategic intelligence management affected crisis management effectiveness. The findings indicated that strategic intelligence enhances crisis management effectiveness and that the more strategically applied information is, the more effective crisis management is in organizations. This helps organizations achieve excellence, formulate strategies, respond to crises, and manage change—especially in the context of a business environment that is changing quickly.

the study of Al-Olimat and Alkshali (2023) reveals a significant impact of strategic intelligence on the reserve mobilization style at Al Al-Bayt University. This can be attributed to the fact that strategic intelligence enables the university to make appropriate decisions that help it confront crises and address the severe shortage of resources, so the university focuses on contingency planning aiming to have a strategic material and financial reserve that enables it to face all crises and mitigate the negative effects resulting from them.

Case Study of Strategic Intelligence Practices in Algerian Organization

There are several studies conducted in the field of strategic intelligence within the Algerian economic organization, including "The role of the communication system in activating strategic intelligence" (Alaoua, S., 2017). This researcher highlighted the reality of the Algerian economy and the extent to which it keeps pace with the knowledge economy, by presenting its indicators: economic incentives, the level of education and scientific research, creativity and the reality of information technologies, and the development of the Internet. She concluded that Algeria is still at the bottom of the global ranking in this field despite all the endeavors and efforts. The study touched on the reality of interest in the communication field and strategic intelligence, as the state has initiated a set of reforms despite its delay, by issuing a guide to economic intelligence and helping a group of national organizations to establish a system of strategic intelligence. The researcher concluded that the institution needs new means, such as strategic intelligence, to feed its decisions in order to anticipate the future and confront challenges. This means, in turn, needs support to ensure its continuity and achieve its goals effectively, which is what the activator guarantees by ensuring effective communication, and consequently great attention is paid to the type and quality of the communication system. It is considered a basic and necessary condition for strategic intelligence, which is based on the principle of collective action. To ensure this principle, work must be done to deliver the appropriate information to the right person at the right time using the appropriate means.

According to Godjil, N., (2012), Strategic Intelligence is not the product of the twentieth century, but has existed since the existence of the organization and has been used in other fields, such as the military field. Strategic intelligence provides information to the organization scientifically and thoughtfully, and this is what allows it to make decisions with a strategic dimension and enables it to stay in touch with its surroundings, to discover all new risks, threats, or probable opportunities. Moreover, the success of strategic intelligence depends on the material and human resources provided by senior management and the extent of the combined efforts of the organization's employees.

Benaidja A., (2010), argues that Internet integration into the organization's marketing communications strategy is done in balance with other traditional means of communication. The marketing department within the "iPad Foundation" uses electronic means in marketing communications and relies heavily on its websites on the Internet, which gives it the ability to interact and build a communications model at the same time, and this is what the organization does not do in a planned and permanent manner. Given the results of previous

studies, we aim in this study to clarify the effective role of the Internet in establishing strategic intelligence, which requires the availability of other factors.

1. **Strategic Intelligence Practices within Algeria Telecom Company of Oran (Boudaoud, 2019)**

In this study, we relied on the descriptive analytical method, and the tools used were the survey and direct interviews with the respondents.

From this study, we conclude that some indicators suggest the beginning of interest in the concept of strategic intelligence and media and communication technologies in general and the Internet in particular in the Algeria Telecom Corporation, despite Algeria's lag in this area. Algeria Telecom Corporation adopts the concept of strategic intelligence, as it tracks, monitors, and controls its external environment by including various departments in the organization that work to collect the necessary information from several internal and external sources permanently within the framework of the strategic intelligence process.

One of the most important sources used to carry out the strategic intelligence process in the Algeria Telecom Corporation is the Internet and the analysis of customer complaints, and this confirms the validity of the first hypothesis. The Algeria Telecom Corporation seeks to implement strategic intelligence as a management method that enables it to contribute to decision-making, and there are a number of factors that help it in this. The information obtained is analyzed by experts and a specialized committee, as well as marketing officials, led by managers. This information is exchanged within the organization to a large extent via e-mail, while other means are not given much importance.

Information is collected from the external environment by studying the market to a large extent and carrying out advertising campaigns and advertisements to have sufficient knowledge of what is going on around it. Through this, it became clear that strategic intelligence has a large and effective role in knowing the opportunities and threats surrounding the institution, giving a comprehensive view of growth towards the future, and finding a balance between the interests of the institution, and the customer's interest by serving market sectors.

Strategic intelligence contributed to meeting the needs of customers better by studying their complaints and taking them into account. The credit for this goes to a group of vigilant people who are not considered a burden on the organization for their effective

role and the great return of this system that allows searching and processing various information of interest to the organization.

Information is considered the primary material for strategic intelligence, and it is circulated through the use of media and communication technologies in the Algeria Telecom Corporation, which invests a lot in this field and deals with specialists and consultants. Information and communication technologies have become an essential and indispensable factor in carrying out the organization's tasks, including communicating with customers and suppliers, evaluating employees from supervisors, and working outside working hours, as they have changed and developed the method of work in the organization. Information and communication technologies have a great connection with the decision-making process through strategic intelligence. And helping to improve the quality of services and products provided to customers, and knowing the organization's external environment and interacting with it, and this confirms the validity of the second hypothesis.

Information Technologies have become an essential and indispensable means in the management of the organization. The results of the study showed that the Internet plays an effective role in the Algeria Telecom Corporation in the field of collecting and exchanging information and improving the quality of service provided, but this is linked to the efficiency of employees in using the computer. It is preferable to use the Internet due to the density of information obtained, and it is used to evaluate customer services to a large extent and evaluate the prices of various offers. The Internet constitutes a strong support for the decision-making process, which is one of the goals of strategic intelligence, and this confirms the validity of the third hypothesis. The Internet has a positive impact on the strategic intelligence of the Algeria Telecom Corporation.

Recommendations

Strategic intelligence allows analysis of the organization's external environment and gives its managers a comprehensive vision by diagnosing the organization's internal and external factors, identifying internal strengths and weaknesses, analyzing the available opportunities and potential threats in the environment, and thus knowing the organization's competitive position. This leads to the effective exploitation of the organization's resources according to what is required. It contributes to exploiting possible opportunities, taking advantage of available strengths, avoiding surrounding threats, or at least reducing their impact, reducing internal weaknesses, and strengthening the organization's competitive position.

The process of strategic intelligence can only take place thanks to the effective role of media and communication technologies that contribute to searching for, selecting, processing and disseminating information, especially the Internet.

Strategic intelligence is a process of research, processing, distribution, and dissemination of information. It has several basic stages, no matter how researchers differ in defining its stages. It is not possible to establish an intelligence system within any institution without respecting its stages. Among its most important stages is the exchange of information with the external and internal environment and the application of information and communication technologies in general and the Internet. In particular, it is characterized by a large flow of information at the required time and at the lowest costs, which helps decision makers and vigilantes in performing their work. This means that there is a correlation between the Internet and strategic intelligence and makes it an important, fundamental and indispensable role in establishing it within a telecommunications organization.

Information Technologies have become an essential means in the Algeria Telecom Corporation that cannot be dispensed with in the process of monitoring the external environment, internal and external communication, processing and disseminating information, researching what is new and addressing it in a contemporary manner to make various effective decisions for the management of the institution.

The Internet in particular, and information technologies in general, have a positive impact on the strategic intelligence of the Algeria Telecom Corporation and an effective role without which the studied institution cannot exist, as it constitutes a strong pillar in building the system of strategic intelligence and its success in all its stages and reaching better results, which ensures the continuity and progress of the institution and keeping pace with all developments taking place.

Through the interviews we conducted with the respondents, we noticed basic factors for the success of the intelligence system in the Algeria Telecom Corporation, including:

Organizational factors: The alert system is available, but it is still new, and therefore care must be taken to develop it. On the other hand, there is a strong culture of sharing and sharing information and knowledge among employees, while there is almost an intersection with managers and officials. Lack of motivation despite the presence of creativity among some employees.

Human factors: The official appointment of an intelligence official or activator is surrounded by ambiguity, as it is not known to all employees.

Material factors: Algeria Telecom employees have high competencies in the field of using information and communication technologies. The company is a telecommunications institution and possesses the highest levels of technology in this field.

Among the difficulties and weaknesses that we noticed in the institution that hinder the system of strategic intelligence are:

- Weak awareness: The institution does not care to a large extent in making individuals aware of the importance of strategic intelligence;

- Weak training in the field of intelligence: The institution does not care about training its employees in the field of intelligence or motivating them for it.

In light of the collected information, we propose a system of strategic intelligence through:

Targeting: By determining the need for information and the partial objectives of the research process, determining who is conducting the research, identifying the relevant sources, the methods used, the budget and the period required for this.

Information: All members of the organization are informed of the established objectives and information needs without disclosing sensitive strategic information.

Collection: Using tracking of persons assigned to do so by collecting information from internal sources for research, whether electronic, documents, information, or mental knowledge of individuals, then external interests, and focusing on all information, even rumors, as they may be weak signals.

Use to anticipate: All stages are useless if they are not used to make proactive decisions that may avoid the organization from a threat or allow it to seize opportunities.

Using various new and advanced information technologies, especially the Internet, and motivating workers and giving them training opportunities in developed countries. Strategic intelligence is a vital activity, so it must be directly under the supervision of the public administration, that is, in the form of a central unit. The administration is the one that identifies the need for information and informs it to the strategic itelligence members in a

clear way so that there is a clear and unified vision that directs the process of searching for information. Paying attention to training all members of the organization in the field of monitoring the environment and collecting information from its various sources and methods of analyzing it, in addition to methods of preserving and disseminating it.

2. Example of Strategic Intelligence Practices in the Trade function

Testimony

Christophe Marnat, Director of Development, at AMI Software said: “The competitiveness of a company depends on the relevant information that you know how to collect and use at the right time. While our current growth is mainly linked to the quality of our products and our R&D efforts, our control of information related to our market, our customers and our competitors allows us to be highly responsive and often proactive.”

Information Needs and Uses

- As a Sales Manager, it is imperative to be informed of all relevant information about your market, customers and competitors.
- Mapping a customer’s decision cycle: Identify the real decision-makers in a client, understand the hierarchical structure, track its timeliness and identify the decision cycle.

Functional & Organizational Answers

Establish a daily watch on all account updates and in particular on restructuring and change of people. If the public information in the press is interesting, the information that emerges from the indiscretion of employees will be of much greater value if it is used wisely.

Technical answers

- Use the surprise report management system.
- Using graphical representation solutions to create organizational charts (ex: MindManager, or PowerPoint).
- To go further: through the implementation of an information analysis software solution for automatic network mapping (exemple : AMI Enterprise Intelligence, Luxid).

Warning

When it comes to information analysis, watch tools only provide users with clues, but it is above all human intelligence and business knowledge that will make the difference.

Analyze the strategy of a competitor and anticipate its new business actions: monitoring their evolution (economic situation, appointments of managers), deployment to new markets, prospecting customers, launching new products, and recruitment of new employees.

Functional & Organizational Answers

- Establishment of a system of field information by merchants following their contacts with customers, suppliers, partners, etc. We then talk about the management of “surprise reports”.
- Make a daily check on the website of your competitors on the pages “product”, “new”, and “news” to track product ads or recruitments.

Technical answers

Establishment of a system for the management of information retrievals:

SMEs: through the establishment of a dedicated mailbox to centralize information. To go further: through the implementation of a software solution for the collection and capitalization of information (plate-forme de type AMI Enterprise Intelligence, Digimind7, KeyWatch, Qwam-QES, etc.). Simplified solutions allow for simple monitoring of competitors' pages (exemple : Copernic Tracker, Global Finder, KBCrawl, etc.).

Warning

The success of this type of approach will go first and foremost through the involvement of the employees, which will be effective only from the moment they find their interest in it. Managing the behavior of change is then a key element.

3. Examples of Strategic Intelligence Practices in the Marketing function

Testimony

Sylvain Forthias, Chief Marketing Officer, at Thales Terre and Interarmées, said: "Marketing is the key element in generating knowledge of customers and markets within the company. In order to do so, it participates in the transmission of information between the commercial teams, operating in the short and medium term and the strategy operating rather in the long term. Finally, Economic Intelligence, by structuring the processes of sharing knowledge and accelerating the decision-making process, participates in the company's responsiveness to its market."

Information Needs and Uses

- Mapping all the players evolving in its market (competitors, suppliers, subcontractors, decision makers, prescribers).
- Follow market developments to detect changes or even break-ups in advance (technologique, juridique, sociale). Knowing these developments allows you to adjust the company's messages, to better understand its "seasonality" (important fairs, budget announcements) or to properly schedule the campaigns.

Functional & Organizational Answers

- Establishment of a human network responsible for raising field information through the sending of surprise reports, meeting reports, presentations, and other documents. All employees of the company must be involved, whether in a SME or a large company.
- Make a daily watch on all the news related to your sector both on external data (press, websites, specialized databases, forums, blogs, etc.) and internal to the company (databases and data and mail servers).

Technical answers

- Organize the pickup of field information by setting up a mailbox designed to centralize all the information collected by employees.
- Subscribe to RSS feeds from specialized sites to collect information. The use of a stream aggregator or a portal allows them to be centralized. Examples of free solutions: RSS Reader, FeedReader, Netvibes.

- Establish an information processing software solution that enables various security functions:
    - Simple solutions allow monitoring of external sites: press, competitors, specialized sites. Example: Copernic Tracker, Global Finder, KBCrawl, etc. More comprehensive platform-type solutions enable an external watch and capitalize the data by classifying them by headings. The data from the information retrieval process can thus be retrieved and shared. Example: AMI Enterprise Intelligence, Digimind7, KeyWatch, Kaliwatch, Qwam-QES etc. Some solutions also enable tracking of internal data, providing custom edge tables and, above all, analyzing the information collected and mapping the links between the detected actors (exemple : AMI Enterprise Intelligence).
    - Use a Relational Tool: Tools such as Analyst's Notebook7 or AMI Enterprise Intelligence enable you to capitalize on information about people, products or companies. This information can then be exploited in a cartographic way to establish links between two or more subjects.
    - Collaborative work tool for project mode: Tools like Blue Kiwi or XWiki, by setting up asynchronous work processes allow a group formed around a project (marketers + specialists and experts) to share information and knowledge on the same topic The aim is then to get the best possible knowledge of a problem before starting the decision-making process. Solutions such as Jamespot Pro also enable the dynamic intranet of a company by allowing the personalized dissemination of information, and by facilitating the exchange of information between experts through a "social network" approach.

Warning

- Do not neglect direct listening, which can be promoted by events such as user club, breakfast, lounges, etc.
- Monitoring the reputation and image of a product. Functional & Organizational Answers
- Conduct an evening to study the impact of the launch of a new product, determine its popularity and the image that customers or consumers have of it.

Technical answers

- Use an Internet trend analysis tool and track places of public expression such as blogs and discussion forums. Example: AMI Opinion Tracker or Digimind7.
- Research companies specialized in these areas can also be used (e.g.: LH2, IFOP, TBWA, Publicis Modem, References, Bolero, IE Decision, or the eyes of the web).

Warning

Do not confuse notoriety and image!

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Content

Title	Page
Preamble	1
Chapter 1: Strategic Intelligence Concept	**3**
1 Concept Evolution	3
1.1.Data, Information, and Intelligence	4
1.2.Business Intelligence	5
1.3.Competitive Intelligence	6
1.4. Strategic Intelligence	6
2. Strategic Intelligence Cycle	8
2.1. Planning 2.2.Collection 2.3. Processing and Analysis 2.4.Dissemination and Exploitation 2.5.Feedback	8 8 8 8 9
3. Lifecycle Intelligence	11
4. Intelligence Analysis at Differing Organizational Level 4.1. At the strategic level 4.2. At the Tactical Level 4.3. At Operational Level	12
Chapter 2: Historical Evolution of Strategic Intelligence, Typology, and Characteristics	**13**
1. Historical Evolution of Strategic Intelligence Approach 1.1. Traditional Approach 1.2. Functional Approach 1.3. Process Approach	13 14 15 17
2. Strategic Intelligence and Strategy Formulation Process	19
3. Porter's Five Forces analysis 3.1. Competitive Intelligence 3.2. Marketing Intelligence 3.2.1. Training and motivation programs for the Sales Force 3.2.2. Encouraging Distributors and Retailers to seek Market Intelligence 3.2.3. Keeping a check on the competitors 3.2.4. Setting up Customer Suggestion Panel 3.2.5. Taking advantage of government Data Resources 3.2.6. Purchasing information from Outside Suppliers 3.2.7. Using customer feedback 3.3. Technology Intelligence 3.4. Governmental Intelligence 3.5. Environmental Intelligence	20 21 22 24 24 24 24 25 25 25 26 28 28
4. Dimensions of strategic intelligence 4.1. Foresight 4.2. Visioning 4.3. Partnership	29 29 29 29

4.4. Intuition	29
4.5. Intuitive Intelligence	29
4.6. Creativity	30
5. Strategic Intelligence Objectives and Challenges	30
Chapter 3: Organizational Behavior and the Analyst's Role	**31**
1. Organizational Behavior and Strategic Intelligence	31
1.1. Organizational Behavior Definition	31
1.2. Organizational behavior associated with Strategic Intelligence	32
2. Focus on Anticipatory Management	34
2.1.Proactive management Model taking into consideration weak signals	36
2.2. Strategic intelligence is shaped by anticipatory training	37
3. The Analyst's Role	38
3.1. Identifying Organizational Needs	39
3.2. Having a necessary research focus	39
3.3. Understanding Data Sources	39
3.4. Performance Measurement	43
3.5. Managing Upward and Laterally	43
4. The Analyst's Responsibilities	45
4.1.Selling the ideas and concepts	45
4.2. Maintaining Intellectual Rigor	45
4.3. Developing Conceptual Models	46
5. The Analyst Challenges	46
5.1. Risk Taken	47
5.2. Professional Development	47
5.3. The Analyst as a Creative Thinker	48
Chapter 4: Strategic Intelligence, Economic Intelligence, and Knowledge Management	49 49
1. Economic Intelligence Concept	49
2. Knowledge Management and Strategic Intelligence	50
3. Economic Intelligence and Strategic Intelligence	
Chapter 5: Strategic Intelligence and Competitive Advantage	56 56
1. Competitive Advantage Definitions	57
2. Dimensions of Achieving Competitive Advantage	57
2.1. Creativity	57
2.2. Flexibility	57
2.3. Costs	58
2.4. Differentiation	58
2.5. Quality	58
3. Attributes of Competitive Advantage	59
3.1. Value	59
3.2. Rarity	59
3.3. Imitability	59
3.4. Non-substitutability	60
4. Competitive Strategies	61
5. Competitive Advantage and Strategic Intelligence	

Chapter 6: Strategic Intelligence and Innovation Capabilities	63 65
1. Innovation Concept	65
2. Innovation Capabilities	67
3. Innovation Dimensions	67
3.1. Incremental Innovation	67
3.2. Radical Innovation	68
4. Innovation and Strategic Intelligence	
Chapter 7: Strategic Intelligence, Information Technologies, and Artificial Intelligence	70 70 70
1. Information Infrastructure as a Basis for Strategic Intelligence	71
2. Artificial Intelligence definition and characteristics	75
2.1. Definition	75
2.2.Artificial Intelligence techniques	76
2.2.1. Artificial Neural Networks	76
2.2.2. Natural Language Processing	76
2.2.3. Robotics	76
2.2.4. Automation	76
2.3. AI characteristics and capabilities evolution	77
3. AI tools and entrepreneurship success through Strategic Intelligence	78
3.1. AI tools and entrepreneurship success	79
3.2. Predictive future of AI use in strategic intelligence	
4. Opportunities and Risks AI	
Chapter 8: Strategic Intelligence and Strategic Foresight	80 81
1. Strategic Foresight Definition	85
2. Scenarios Definition	86
3. Scenario Project Phases	87
4. The key principles of strategic foresight	88
4.1. Systems thinking	88
4.2. Anticipation	89
4.3. Tools	90
4.4. Human Capital and Collaboration	92
4.5. Action-orientation and communication findings	94
5. Measuring Foresight Success through Scenario Approaches	
6.	
Chapter 9: Strategic Intelligence and Crisis Management	97 97
1. Crisis Definition	98
2. Crisis Management	98
3. Crisis Management Styles	98
3.1. Changing Path	99
3.2. Crisis containment	99
3.3. Crisis Fragmentation	99
3.4. Reserve mobilization	
4. Strategic Intelligence and Crisis Management	

Case Study of Strategic Intelligence Practices in Algerian Organization 1. Strategic Intelligence Practices within Algeria Telecom Company of Oran 2. Example of Strategic Intelligence Practices in the Trade function 3. Examples of Strategic Intelligence Practices in the Marketing function	101 102 107 109
References	112
Content	116

Table and Figure	Page
Figure 1.1: The different levels of Intelligence	7
Figure 1.2: Sigmoid Curves	10
Figure 1.3: Elements integrated in the lifecycle Intelligence	11
Figure 1.4: Different Intelligence types associated with organizational level within organization	13
Figure 2.1: Strategic Intelligence Model	18
Figure 2.2 : Strategy formulation process	19
Figure 2.3: Porter's Five Forces analysis	20
Figure 2.4: Types of Strategic Intelligence associated with the Porter's 5 Forces	21
Figure 2.5: Steps for Competitive Intelligence	22
Figure 2.6: Marketing Intelligence as a part of Market Intelligence System	23
Figure 2.7: Market Intelligence Implementation Steps	26
Figure 2.8: Technology Intelligence Process	27
Table 2.1: Strategic Intelligence Objectives and Challenges	30
Figure 3.1: The different organizational behavior regarding to response time	32
Figure 3.2: Adaptive Management and Proactive Vision	33
Figure 3.3: Key Element of Anticipatory Management Model	34
Figure 3.4: Strategic intelligence objectives during digital transformation	35
Figure 3.5: Anticipatory management process structure	36
Figure 3.6: External and Internal Data Sources	42
Figure 4.1 : Machlup's sources of Insight	50
Figure 4.2: Economic intelligence and KM as part of strategic intelligence	52
Figure 4.3: From Data to Intelligence	53
Table 4.1: Activities, Methods and Tools for different stages of the Economic Intelligence Process.	55
Table 5.1: Competitive Advantage Definitions	56
Figure 5.1: Attributes of Competitive Advantage	59
Figure 5.2: The business information value chain	61
Figure 6.1: Innovation capabilities of the firm	66
Table 7.1: Organizations with high and low information infrastructure maturity	71
Figure 7.1: Exponential growth of technology	73
Figure 7.2: defining Artificial Intelligence, Machine Learning and Deep Learning	75
Figure 7.3: Capabilities evolution of AI (1995-2023)	78
Figure 7.4: Corporate Strategists' Use of Analytics	80
Table 7.2: Opportunities and Risks AI	81
Figure 8.1: The five phases of scenario management	87
Table 8.1 : Comparison between Horizon scanning and Scenario planning	90
Figure 8.2: Strategic foresight actors	91
Figure 8.3: Strategic Foresight process	93
Figure 8.4: Key Performance Indicators of Strategic Foresight	94