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Article

Design-driven external analysis: A framework for adaptation and innovation in digitally native enterprises

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Abstract: Analysing external factors with a design-thinking approach is crucial for adaptation, identifying opportunities, and mitigating risks in native digital enterprises. This research introduces a framework rooted in design principles and future scenarios for external analysis, with the aim of meeting current market needs. The study employs a mixed qualitative-quantitative research approach, incorporating methods such as literature review, workshops, and surveys. These methods enable the collection and analysis of both qualitative and quantitative data, providing a comprehensive and accurate understanding of the research topic by using it in a DNVB case study. Developing a conceptual framework using a design-thinking approach which we call ASPECT contributes to a comprehensive interpretation of complexity, intertwining collective and individual factors. This reduces the risk of overlooking essential elements when making strategic decisions in ambiguous, uncertain, and volatile contexts. This method contrasts with traditional external analysis frameworks like CAME, Pestle, and SWOT. The document aims to contribute to the literature by exploring new models of external analysis based on the design process. This framework combines the conventional stages of a design thinking process with methodologies for future scenarios to identify relevant external factors for organizations. It provides an innovative conceptual framework for creating new business models and growth strategies for digital enterprises.

Keywords: business model; external analysis; trends; innovation; design thinking; digital business; SDG 9

1. Introduction

This paper aims to comprehend the new dynamics of society and the market in a context characterized by constant evolution and uncertainty. In this shifting environment, the use of strategic analysis tools plays a crucial role in gathering essential information to identify behaviour patterns that guide strategic decision-making (Marcazzan et al., 2022).

With this purpose, this paper introduces a new market external analysis tool based on the discipline of design, seeking to gather the necessary information in uncertain and volatile scenarios. The tool is conceived as a resource for formulating effective strategies in a world characterized by instability and rapid transformation. This is achieved by linking market environmental analysis with the field of futures studies (Berenskoetter, 2011; Brown and Kuratko, 2015; Decoufle, 1974; Godet and Adam, 2006; Ito and Howe, 2016; Kuosa, 2010, 2016; Mojica, 2005; Schwartz, 2012).

In this approach, strategic decision-making requires establishing new and different observation points to refine responses to market context questions in future scenarios. Thus, we consider the application of design-thinking principles crucial for innovating in the detection, classification, and organization of information about

environmental changes (Dorst, 2011; Oxman, 2017; Visser, 2006). This method involves multi-stage analysis of gathered data and proves effective in situations involving volatile information and a high degree of obsolescence (Manetti et al., 2021; Manetti et al., 2022).

For this reason, we have conducted research to develop a new strategic analysis tool that we call ASPECT, and argue why design-thinking methodology (Rowe, 1987) is effective in achieving our research goals. This new approach employs mixed research methods (Creswell, 2015; Curry and Núñez-Smith, 2015; Dagnino et al., 2020; Ramírez-Montoya and Lugo-Ocando, 2020) in combination with design methodologies (Manzini, 2015) to create new formulas for studying the evolution, impact, and behaviour of trends in the analysed markets in order to capture the information necessary to establish a map of future changes for decision-making.

This paper seeks to initiate a discussion on the application of external analysis frameworks in the context of the Fourth and Fifth Industrial Revolutions, highlighting the insufficient consideration of critical dimensions or factors observed in recent industrial developments. It builds on the work of Manetti et al. (2021), which highlights the importance of developing new tools for innovation, and further research on the future (Manetti et al., 2022a, 2022b), especially in terms of singularity (Lara-Navarra, 2024a, 2024b), and researching the use of digital trend maps to navigate these complex industrial changes, along with the ability to understand business environments (Font-Cot et al., 2021, 2023, 2024). Finally, we discuss the tool's application for future analyses with a case study based on the DNVB Incapto and provide our research conclusions.

2. Research context and framework

There is extensive literature on different tools used for business analysis that assess the external and internal aspects of a company or business to make strategic decisions (Bock et al., 2016; Zakeri et al., 2018; Pröllochs and Feuerriegel, 2020). The academic community has also conducted critical and advanced analyses of the tools and methodologies used in strategic management. These studies include assessing the strengths and limitations of current strategic analysis techniques, recommending the adoption of more advanced statistical methods for data analysis. A more integrated and dynamic approach is advocated for understanding strategic processes and practices, crucial for addressing the challenges of the fourth and fifth industrial revolutions (Borrero and Henao, 2017; Hill and Westbrook 1997; Hulland, 1999). The purpose of this work is not to analyse the use or effectiveness of tools such as SWOT, PESTEL, CAME, and STEELE, but to offer a concise description outlining the framework of the tool we propose. Brief descriptions of the main characteristics of the most commonly used strategic analysis tools are presented below.

A. SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats): This tool assesses a company's resources and capabilities to identify its internal weaknesses and strengths, along with the threats and opportunities perceived from the environment. The objective is to maximize the use of opportunities and minimize threats (Helms and Nixon, 2010; Benzaghta et al., 2021).

B. CAME Analysis (Correct, Address, Modify, Exploit): This tool aims to apply

the conclusions and action plan derived from the SWOT matrix. It provides a strategic roadmap for adapting to the environment and establishing an active strategy within the identified scenarios. The objective is to exploit opportunities and turn them into strengths (Ruá et al., 2021).

C. PESTEL Analysis (Political, Economic, Social, Technological, Environmental, Legal): This tool helps companies analyse the external environment in which they operate. It encompasses politics, economics, society, technology, the environment, and legislation. It helps companies identify factors that may impact their performance and enables them to make strategic decisions (Yüksel, 2012).

D. STEEPLE Analysis (Social, Technological, Economic, Environmental, Political, Legal, Ethical): This tool aims to assess a company's external environment. It is used to identify factors that may affect a company's performance, such as the economy, technology, the environment, legislation, and ethics. Its use helps companies make strategic decisions and prepare for environmental changes. It is an evolution of the PESTEL or STEPLE tool, containing all their elements and adding the element of ethics as an important factor for strategic decision-making (Shtal et al., 2018).

The description reveals a lack of coverage of dimensions or external factors crucial to the recent changes and advancements of the fourth and fifth industrial revolutions. SWOT analysis is one of the most-used strategic tools worldwide (Benzaghta et al., 2021; Helms and Nixon, 2010). The existing literature on SWOT analysis has been criticised for its binary approach in assessing business strengths and weaknesses (Charis, 2019) Within the conventional framework of SWOT analysis, it is commonly assumed, albeit implicitly, that the opportunities and threats emanating from the external environment exert a uniform influence across all socioeconomic entities, without any exceptions (Vlados, 2019). Conventional SWOT analysis offers only a limited perspective on the environment and employs terminology that can confuse users, hindering their clear understanding of the factors that influence an organisation's situation (Palazzo and Micozzi, 2024). Thus, traditional SWOT analysis can lead to incorrect business decisions (Cusi et al., 2023)

In the field of strategy application, SWOT analysis does not provide the full information on the environment of PESTEL analysis, nor does it provide any clues on how to use the results obtained when formulating the strategy, unlike CAME analysis. This view is not new, but was already being discussed in the late 20th century (Hill and Westbrook, 1997). For all these reasons, it is not surprising to see new proposals appear that can help decision-making in volatile environments, that help understand the increasingly dynamic environment (Cusi et al., 2023), and with added environment variables explaining the transformation and evolution from PESTEL to STEEPLE methodologies, for example (Kozel et al., 2017).

The use and approach of such tools vary depending on the context and specific industry; hence, it is important to tailor the analysis to the company's particular characteristics (see **Table 1**).

All of the above invites us to make a more integrative proposal, and above all, one that meets the challenge of characterizing digitally native brands (DNVB), new types of companies that are born, evolve and transform digitally; thus, in the next section we characterize DNVBs and make a strategic analysis proposal (ASPECT methodology) that responds to all these challenges.

Table 1. PESTEL method factors in the case of native vertical brands.

Political	**Technological**
E-commerce and digital trade regulations.	Advances in e-commerce technology (digital payment, UX/UI, logistics).
Privacy and data protection regulations.	Adoption and availability of broadband and mobile technology.
Policies supporting digital startups.	Innovations in digital marketing technologies (SEO, online advertising).
Economical	**Environmental**
Access to capital for digital startups.	Environmental norms and regulations on packaging and shipping.
State of the digital economy and e-commerce.	Consumer attitudes towards sustainability in e-commerce.
Online consumer spending trends.	Impact of climate change on logistics operations.
Sociocultural	**Legal**
Changes in online consumer purchasing behaviour.	Laws related to e-commerce and consumer protection.
Attitudes towards online shopping and home delivery.	Regulations on advertising and digital marketing.
Demographic trends affecting the use of technology and e-commerce.	Intellectual property laws related to content and digital technology.

2.1. Characterization of digitally native brands

To address the increasing need for more detailed information and effective decision-making in a constantly changing business environment, we explore the realm of small digitally native companies, commonly known as DNVBs (Digitally Native Vertical Brands). A DNVB is a specific type of start-up with a digital focus, a vertical business model, and an orientation to building a robust brand (Dunn, 2016). They differentiate themselves from other start-ups by focusing on a specific market niche and emphasizing the development of a strong, distinct brand.

In understanding the DNVB phenomenon, we observe that Direct-to-Consumer (D2C) e-commerce sales by digitally native brands will reach 44.6 billion USD in 2023, with a forecast of 51.69 billion USD in 2024 (eMarketer, 2022). These enterprises are intrinsically associated with various aspects such as logistical management, inventory control, supply chain, customer service, online user experience, data analysis, artificial intelligence implementation, and e-commerce technology. Among the essential components are customer purchasing experience, product/service design, and marketing. Comprehensive analysis of the environment and trends is fundamental for understanding these keys to New DNVBs (IAB, 2018) due to several reasons:

- Constantly changing environment: The business environment is dynamic and continually evolving.
- Opportunity identification: Analysing the environment and trends allows DNVBs to identify emerging opportunities.
- Risk mitigation: Environmental analysis helps to identify potential threats and risks.
- Informed decision-making: Basing decisions on robust data and analysis is

fundamental for business success.

- Adaptation and flexibility: In a constantly changing business environment, adaptability is essential.
- Enhanced innovation: Understanding consumer trends and changing needs can drive innovation.

It is crucial for new strategic analysis frameworks to consider customer value creation as a central element in strategy formulation (Carnoy, 2017). Furthermore, digitally native brands are distinguished by their ability to fully leverage technological advantages and digital platforms for growth. These enterprises are constantly seeking new ways to use technology to optimize operations, enhance the customer experience, and differentiate themselves from competitors (Lipskier, 2019). Consequently, strategic analysis frameworks must include a meticulous evaluation of the opportunities and challenges arising from digital technology and how these can be exploited for sustainable competitive advantages.

In the growth strategies of the large brands that work with the D2C model, there has been an increase from 75.6 billion USD in 2020 to 161.2 billion USD in 2024. However, it has been observed that these large brands are starting to grow through the Direct-to-Consumer (D2C) model while simultaneously applying trends generated through DNVBs, which are becoming serious competitors in terms of business volume.

By using intuition, not just data, to comprehend the changing needs of customers, these businesses find success in intuitively meeting digital consumers' demands. They prioritize the customer experience to foster loyalty, not just to cut costs. D2C brands understand the value of exceptional customer service and quality user experience. As brands with a D2C model, they iterate rapidly in product development and marketing to align with customer trends, using megatrends. They also harness 'influencers' to gain presence on digital platforms, creating authenticity for brand affinity and growth.

We see, then, how D2C Brands follow trend analysis and increasingly apply DNVB strategies. These DNVB strategies require market analysis that encompasses futures with elements such as: User Experience (UX) and customer-centred design; Technology integration and design; Branding and design strategies; Personalization and co-creation; Sustainability and eco-friendly design; Digitalization and interface design; Omnichannel experience; Customer collaboration and feedback; Visual aesthetics and compelling content; Constant innovation and adaptability.

Integrating these trends into the analysis of the DNVB environment gives us a more comprehensive and updated perspective on the challenges and opportunities facing the enterprise. This allows DNVBs to anticipate changes, adjust their strategic approach, and leverage megatrends to drive innovation and growth. Megatrends may vary depending on the context and specific industry in which the DNVB operates, so it is crucial to tailor the analysis to the company's particular characteristics. Therefore, it is essential for each company to evaluate and prioritize challenges according to its specific situation.

2.2. Evolved proposal for a new design-driven analysis framework: ASPECT

It's crucial to note that environmental trend analysis is a complex issue given the

directional nature of trends and their oscillation over time. The trends we examine are not past events but rather predictions of what will occur at a specific time in the future (Vejlgaard, 2007). Therefore, trends must be studied and revised at different stages and be supported by qualitative and quantitative evidence. The collected data will aid in interpreting trend behaviour across multiple scenarios. For example, the mixed research model proposed in Creswell (2015) and Creswell and Creswell (2017) includes a Multi-Stage Evaluation Design, a process with specific phases for development, testing, implementation, and refinement. O'Halloran et al. (2018) argue that mixed models use qualitative and quantitative data to assess needs, conceptualize, develop instruments, implement and test, monitor, and refine (Guetterman et al., 2015). The approaches in Creswell (2015), Creswell and Creswell (2017), and O'Halloran et al. (2018) pave the way for innovation in the field of futures studies through design thinking.

In this context, theories and concepts of design thinking are widely accepted by the scientific community. Design thinking is a process of exploration and creative strategy. The process defined by Oxman (2017) involves the search for a solution, exploration, emergence of a solution, reflection, modification, refinement, adaptation, and means (the latter term involves concepts such as algorithm design and artificial intelligence (Bonami et al., 2020)).

Therefore, we are convinced that design thinking and mixed research methods are the most suitable techniques for creating, studying, and analysing trends, their temporal variations, and the need to incorporate social behaviours (Lara-Navarra et al., 2018). According to Campbell and Fiske (1959), multiple research methods are required to identify trends and their variations as trends vary depending on society's needs. Hence, evolving environmental analysis tools to study and analyse social behaviours is necessary (Pereira-Perez, 2011). Consequently, the study and analysis of the nature of trends must be supported by new tools that capture this complexity, as proposed in the ASPECT methodology.

2.3. Description of the elements of the ASPECT tool

The objective of this paper, while not directly assessing the usage or efficiency of tools such as SWOT, PESTEL, CAME, and STEELE, is to offer a succinct description that outlines the framework of the proposed tool, emphasizing the lack of coverage of dimensions or external factors that are critical in the context of the industrial advancements witnessed during the fourth and fifth industrial revolutions. This discussion is supported by Manetti et al. (2021), who emphasize the need for new tools in open innovation, and by further exploration of future casting possibilities (Manetti et al., 2022), which underscores the need for designing digital maps of trends to navigate these complex industrial changes (Font et al., 2023)

The ASPECT tool is a proposed evolution of analytical tools such as PESTEL, specifically aimed at including the conceptual and applied domains for studying business factors in the development of business activities and new projects (start-ups). It integrates the design process as a fundamental part of its innovation strategy. To define the variables in the external environment that generate the most significant impact on the present and future of established or emerging companies (start-ups) or

"design-driven" projects, a new technique is proposed. This technique evolves some elements of PESTEL analysis and introduces innovative elements we consider valuable for understanding volatile, uncertain, complex, and ambiguous environments, which we term ASPECT (see **Figure 1**).

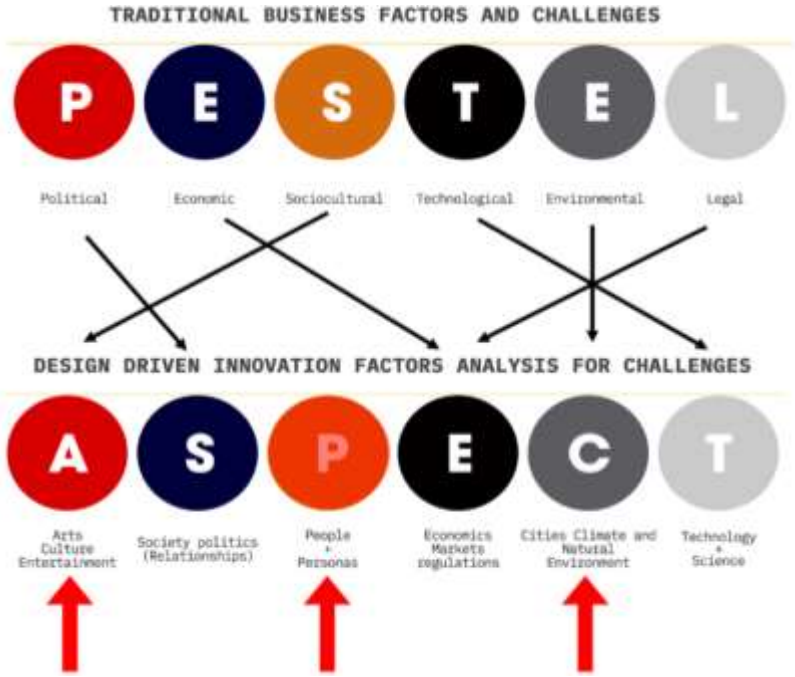

Figure 1. From PESTEL analysis phases to ASPECT analysis phases.

The six groups that make up the ASPECT tool are described in detail below:

Arts, Cultures, Entertainment. The first group of fields referring to the letter "A" brings together "Arts, Cultures, Entertainment" the artistic, cultural, leisure, recreational and sporting elements. These elements are not traditionally considered as important factors at a transversal level for a company, but they must be considered particularly relevant for a company that focuses its development and innovation axis on competitive factors linked to design. The cultural factor has historically been underestimated by companies in the phase of accessing new markets belonging to geographically distant territories and, in several cases, how much it is taken into consideration has determined the failure or success of a brand, a specific product or a service. Design plays an important role as a decoder and interpreter of the cultural message and can bring closer, help to understand, and integrate cultural elements in the cultural territories concerned. Finally, the entertainment element is another factor traditionally considered irrelevant to the development of a business.

Society, Politics, Ethics. The second group of fields referring to the letter "S" brings together "Society, Politics, Ethics" the socio-political and ethical elements related to social structure and stratification, organizational systems in key social sectors such as energy, telecommunications, infrastructure, and transport, as well as the political system, its form of government, the ideologies and values on which it is based, the respect for basic rights inspired by democratic principles, its decline from an ethical point of view, and its degree of stability or instability. These elements are traditionally considered as important cross-cutting factors for a company that decides

to enter an international market belonging to a politically established state.

People, Personas, Psychology. The third group of factors, which refers to the letter "P", brings together "People and Psychology", the elements linked to demographics—birth rate and ageing for example—the evolution of the population as a group of people and their particular dimension as persons and individuals, their behaviour, their lifestyles, their relationships and thinking, their human experiences, and above all, the elements that make them different from their traditional status as a "target audience", i.e. their cognitive capacity as intelligent beings and the psychological implications underlying the act of using or buying a product or service, as well as the overt or subliminal emotional consequences that lead to one decision over another among the different possibilities. This last element is linked to the application of analyses linked to neurosciences and at the same time is the real novelty factor compared to traditional systems of analysis of factors external to a company. Moreover, it is directly inspired by the design methodology which is—since its systematization as Design Thinking—a procedure focused on understanding the end-user experience and in some aspects on co-creation with the end user.

Economics, Markets, Regulations. The fourth group of factors referred to by the letter "E" brings together "Economics, Markets and Regulations", the elements linked to macroeconomic factors such as GDP (Gross Domestic Product), income distribution, currency fluctuation, devaluation or appreciation, monetary policy, inflation, the cost of labour, the unemployment rate, the level of state intervention or the volume of private investment in a market. Microeconomic factors are associated with macroeconomic factors: private consumption styles, predisposition to entrepreneurship, propensity to risk, and the systems of social and labour protection, intellectual protection and industrial patents; in short, the entire regulatory environment of a given country or market. The factors in this group can be considered the "classic" elements of analysis that have multiple considerations in the final decision to choose one market over another.

Cities, Climate, Natural Environment. The fifth group of factors referring to the letter "C" brings together "Cities, Climate and Natural Environment", the elements linked to environmental factors which in recent years have become increasingly important due to the growing impact of extreme weather phenomena across the planet traceable to global warming. The ASPECT model places special emphasis on the metropolitan environment, defining the urban area as the first factor of analysis, the city as a potential design laboratory with its elements of interaction between spaces, users and the system of services and products. This urban priority is defined by the megatrend of rapid urbanization present in all the world's geographies. The relationship between urban areas and natural environments is another important element to consider with regard to the potential medium- and long-term consequences of climate change. An example of how important this group of factors can become is the analysis of the capacity of the natural territory to provide raw materials and rare metals, which are indispensable for the evolution of many industrial sectors.

Technologies, Sciences. The sixth and last group of factors referring to the letter "T" brings together "Technologies and Sciences", the elements linked to technological factors, both in the digital environment and in the physical and material environment, in their real, virtual and hybrid dimensions. The other associated element is that

determined by scientific research with its different branches and disciplines, including mathematics, physics, chemistry, astronomy, geology, biology, and genetics. As indicators in this group of factors, it is essential to consider the volume of investments in public and private research and development in the different industrial and economic sectors; the rate of launching new technologically advanced products, the presence of consolidated technological companies, start-ups and STEM training institutions in a given country, area or city, and the technical and technological qualification of the professional workforce.

Before describing each of the factor groups, some premises need to be addressed:

External analysis can be conducted by applying all variables or through a selection based on the project's scope and typology, and the time available for the analysis and research phase. ASPECT is an acronym that integrates related fields.

Like all classifications, the boundaries between one group of variables and another are subtle, interdependent, and blurry. The ASPECT classification is primarily understood as a tool to describe the complex environment in more detail and depth, considering both the present and future perspectives.

Start-ups should understand how these variables influence their current and future business cycles, organizational structures, and their interactions with the company.

Certain economic theorists emphasize the importance of finding a proper balance between the company's strategies and its macro environment, a unique combination defining the best possible positioning (Chandler, 1962). On the other hand, others argue that managers should have various strategy options, more or less aligned with the external environment (Child, 1972). We believe that the central goal of this tool is to create the foundational conditions for a differential value proposition for both current and potential users while respecting the essential principles of global sustainability in the present and near future.

The ASPECT analysis tool stands out from existing tools in the theoretical and professional framework of strategic analysis of business risks and opportunities because it references the essential elements to be considered in applying all phases of the design-thinking methodology associated with trend analysis and forecasting. This methodology involves the following stages: empathy and problem/opportunity understanding, user and contextual research, insight gathering, point of view definition, idea generation, prototyping, and project/venture implementation testing.

3. Research design and method

The methodology employed in the research is the case study approach. This approach is commonly used to address questions such as "who" and "why" within a real-world context (Yin, 2014) and in theory construction (Eisenhardt and Graebner, 2007). Moreover, this methodology enables the reduction of assessor bias and, conversely, increases external validity (Eisenhardt and Graebner, 2007; Yin, 2014). Findings from a case study are not typically expected to be broadly generalizable, but rather to contribute more substantively to formulating new hypotheses and enable subsequent research according to other research designs (Sellitto, 2018).

3.1. Data collection

Data collection took place in May 2023. A total of 24 interviews and 3 workshops were conducted. The interviews lasted approximately 60 minutes each and were carried out via teleconference using a semi-structured questionnaire. The questionnaire comprised two sections: the first section focused on the structural characteristics of the start-up (e.g., number of employees, revenue, year of foundation), while the second section addressed the different ASPECT elements. Twenty-four transdisciplinary and transgenerational experts participated in the study. Gender equality was ensured in the selection. The final selection included thirteen women and eleven men between the ages of 23 and 65. The interviewees were individuals with substantial knowledge of the DNVB, holding executive positions such as CEO, Co-CEO, CFO, CPO, COO, and CMO, and we sought the involvement of staff. The interviews were recorded, transcribed, and a report was drafted for each case study. Moreover, the interviewees' feedback on the questions was used to modify the interview protocol for subsequent interviews. In cases where information was unclear or absent, the interviewees were contacted for clarifications.

3.2. Data analysis

The analysis of the case studies was conducted in two phases: firstly, an analysis of individual case studies, and secondly, an analysis of the workshops to integrate the results and additional data (Saorín and Pastor-Sánchez, 2018).

Specifically, in the first phase, a content analysis of the individual cases was conducted using an approach derived from grounded theory (Strauss and Corbin, 2008). The interviews were conducted separately by at least two authors to allow comparison and discussion of any instances of divergent interpretations. Coding of the interviews was performed to identify relevant concepts (Pratt, 2009) and the relationships between them. First-order concepts were grouped into second-order themes that describe the data at a higher level (Martínez-Martínez and Lara-Navarra, 2014). Finally, second-level concepts were aggregated into three composite dimensions (Silva, Costa, Fernandez, 2021). In the second phase, the results emerging from the within-case analysis were compared through cross-case analysis to further refine the identified concepts at each of the three levels from the first phase to achieve a version with an acceptable degree of internal coherence between cases and data adaptation (Martínez-Martínez and Lara-Navarra, 2014). The outcomes from the cross-case analysis were subsequently analysed to identify similarities and differences among the case studies.

4. Results and discussion

Practically, to address our research objectives, three consecutive workshops were conducted. On the first day, the integration of the ASPECT analysis tool in future studies, combined with design methodologies, was explored to generate prospective scenarios for the challenges faced by DNVBs. The team focused on merging the ASPECT tool into the DeflyCompass future envisioning methodology (Manetti et al., 2021) and a trend map (Manetti et al., 2022). Additionally, a specific case study, particularly involving the DNVB Incapto, was chosen to apply the method. This fusion

of outcomes aimed to validate the effectiveness of the ASPECT method and identify potential limitations or challenges in its implementation (see **Figure 2**).

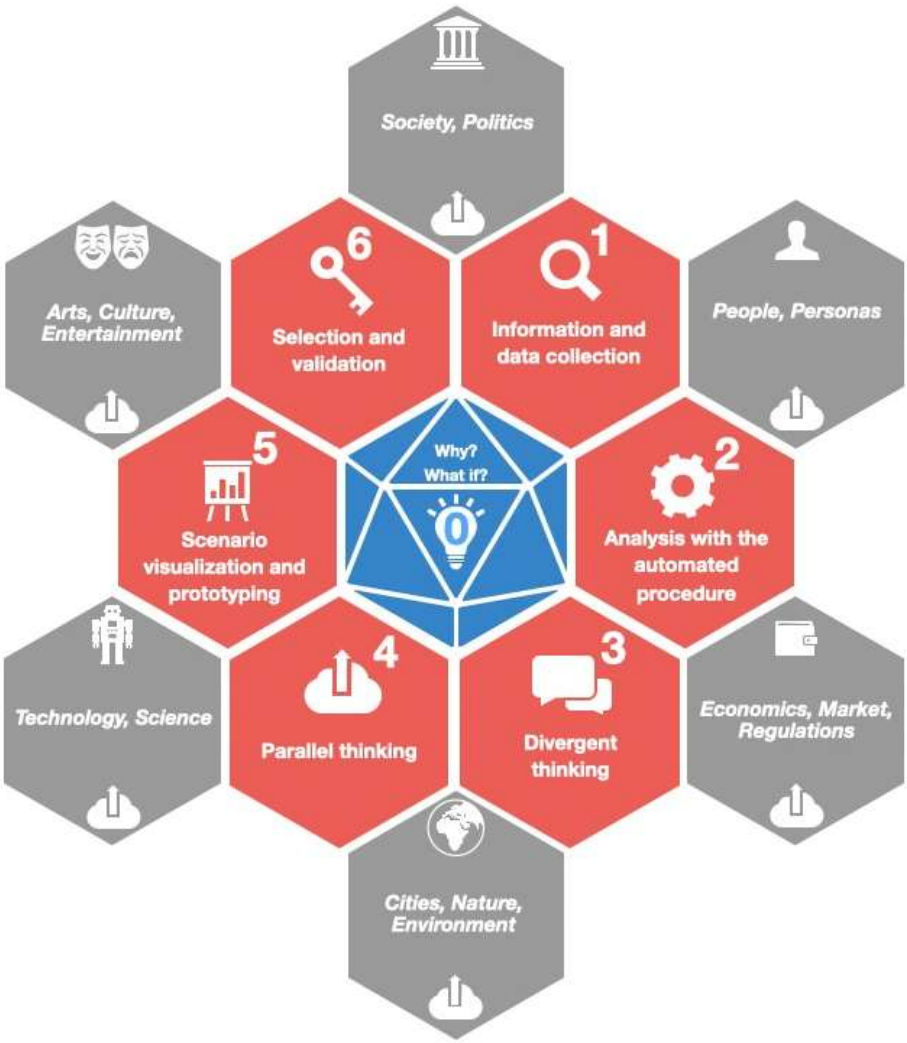

Figure 2. ASPECT analysis phases integrated in the trend methodology.

Incapto, a Digitally Native Vertical Brand (DNVB) in the specialty coffee industry, was selected for this case study to illustrate how modern companies operating in digital and niche markets can benefit from the proposed strategic analysis tool. Incapto's focus on direct-to-consumer sales, sustainability, and leveraging online platforms epitomizes the unique characteristics and challenges faced by DNVBs. It is also one of the biggest DNVB startups in the European foodtech industry, and has a very high profile in the specialty coffee sector. The case study aims to demonstrate the effectiveness of the new strategic tool in addressing the specific needs and dynamics of digital-first brands like Incapto, navigating the complexities of the current business landscape.

Additionally, the fields of interest were established to pose the research questions and search formulas. The expert group identified ten key elements for studying the environment, which were established as follows: Intense competition; Rapid changes in consumer trends and preferences; Economic volatility; Accelerated technological changes; Logistic and supply chain challenges; Maintaining customer trust;

Regulatory and legal changes; Resilience in the face of crises; Developing strategic alliances; Effective management of online reputation.

Following this, the group developed strategies for information retrieval, working together to find the best response to the research question. After selecting the best strategies, the session continued with group reading. This was followed by a debate in which speakers argued for the sources that should be included in the environmental analysis process. The workshop led to the selection of key strategic consultancy and business reports, such as McKinsey, Fjord, Deloitte, and the World Economic Forum.

The second-day workshop mainly focused on analysing how creativity can contribute to the development of 20-year scenarios. Participants used the "Six Thinking Hats" method (De-Bono, 2000), a technique that addresses problems and situations in an imaginative and creative manner. The first task was to organize the information from the previous day to establish the scenarios. From the review of the reports, 224 trends were identified and grouped into the 6 macro fields of ASPECT: A (Art, Culture, Entertainment), S (Society, Politics, Ethics), P (People, Psychology), E (Economy, Markets, Regulations), C (Cities, Climate, Natural Environment), and T (Technologies, Sciences) (see **Table 2**). Trends associated with fields A and C represented 25.89% of the total, while the remaining trends were evenly distributed across the other groups. Once the macro fields and associated trends were established, the group discussed the trends impacting the criteria of the DNVBs (see **Table 2**).

Table 2. Classification of trends according to Group A and their connection with DNVBs.

	Megatrends	**Applicable to a DNVB**
"A": Arts, Lifestyle, Entertainment, Culture and Sport	Customization/Personalization	x
	Standardization/cultural convergence/remix	x
	Individualisation/empowerment	x
	Experience More	x
	Reinvention of gender roles	x
	Premiumization	x
	Multiculturalism	x
	Shopping Reinvented	x
	Digital Rights	x
	Social Platform crisis	x
	Digital Communities	x
	Hybrid Sports	
	Beyond Globalization (2.0)	x
	Work and Leisure blurring lines	x
	She-economy	
	The Artisan Wave	x
	Racial and religious integration/inclusive brands	x
	Situationships/fluid relationships/VR dating	
	Augmented Entertainment	
	Segmented tourism and travelling	

Table 2. (*Continued*).

	Megatrends	Applicable to a DNVB
	Meta-inclusivity	
	Multiversal Brands	x
	Ageless Play	x
	Virtual Flavors	
	zero-proof lifestyles	x
	Survivalist dining	
	Clubstaurants	
	Affirmational beauty	
	Multiversal Design	x
	Hyper-private Luxury	x
	Preppers movement	
	Few Strong Many loose relationships	
	Precarious Lifestyles	
	Fempowerment	x
	Appreciation of social and comm skills	x
	Digital Culture pervarding all daily life	x
	Digital Natives: communication, participation	x
	Individualism	
	Ambiguity	
	Tribalism	
	Freedonism fun ultimate antidote for fear	
	transparency revolution for brands	x
	joying meaningful connections in a lonely world	
	Power to people	x
	State of place 0 km products	x

On the third day, our focus was on developing the ASPECT environmental analysis along with the specific trends concerning the Incapto case, aiming to identify concrete actions based on the results obtained from the study of external factors. The following provides a breakdown of the actions taken for each ASPECT section.

A (Art, Culture, Entertainment):

Transparency Revolution for Brands: Incapto's utilization of the ASPECT analysis tool acknowledges the importance of transparency as a revolution in modern brand strategies. This approach aligns with the evolving preferences of digital-savvy consumers who value openness and authenticity. In the case of Incapto, these startups provide total traceability of the breakdown of the final price of the cup, avoiding intermediation and providing total transparency in costs. The comparison depicted in **Figure 3** illustrates that Incapto's Free On Board (FOB) price, at $6.49, exceeds the industry's average of $4.20. This results in a final product cost for Incapto that is higher than the industry standard, with the increased value distributed across the value chain, beginning with the coffee producers.

While using the ASPECT framework, the vice president of product at Incapto

said:

> *"The Aspect framework allowed us to take an honest and organized approach to addressing the megatrends under 'A'—Art, Culture, and Entertainment. It's clear that today's consumers value transparency and authenticity. We've taken this to heart by providing total traceability of our coffee's cost breakdown. As a result, we've gained the trust of digital-savvy consumers."* (see **Figure 3**).

Figure 3. Each coffee has traceability in price and origin.
Source: created by Incapto.

Customization/Personalization: Recognizing the demand for personalized experiences, Incapto can leverage customization and personalization strategies to offer tailored coffee products and engagement, catering directly to individual preferences. Hence, Incapto offers personalized subscriptions differing in frequency, different origins, roasting level, etc. Every subscription can be customized to every home or business (**Figure 4**).

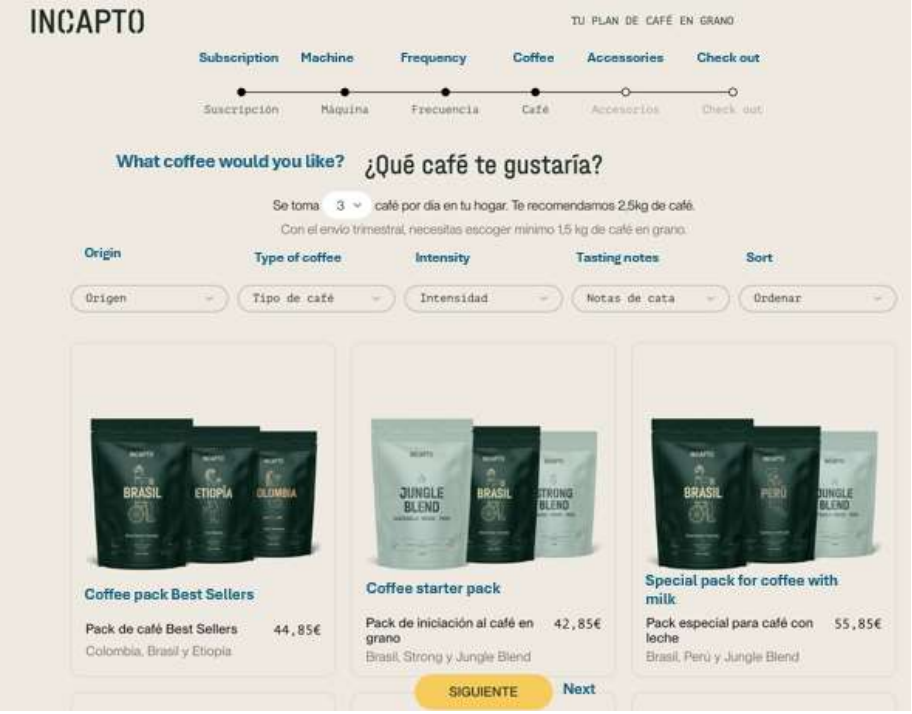

Figure 4. Coffee subscription plan of Incapto.
Note: Original version in Spanish, English translation in blue.
Source: created by Incapto.

Digital Natives: New Forms of Communication, Participation, and Organization: Incapto's engagement with the ASPECT analysis tool allows it to adapt to the communication patterns and participation behaviours of digital natives, fostering a deeper brand-consumer relationship. Customers can interact with the company 24 hours a day through WhatsApp or social media and the company answers in real time by working with different remote teams in two continents.

S (Society, Politics):

Crowd Creation Funding: By understanding the trend of crowd creation funding, Incapto can explore innovative ways to engage its community in funding initiatives, fostering a sense of collective ownership and loyalty. In practical terms, Incapto has successfully tapped into this concept, having secured funding twice through an equity crowdfunding platform called Dozen Investments. This venture led to the acquisition of over 1 million euros from numerous investors who concurrently evolved into valued customers and enthusiastic advocates (**Figure 5**).

Figure 5. Incapto equity crowd funding campaign at dozen investment platform, the Spanish crowd-funding platform for startups.

Note: Original version in Spanish, English translation in blue.

Source: created by Dozen Investments and Incapto.

Regarding ASPECT and the crowd-funding strategy the founding team of Incapto said:

> *"When we delved into 'S'—Society and Politics, it became evident that crowd creation, funding, and sustainability are crucial areas for us. We understand the power of community engagement, and that's why we've successfully utilized equity crowdfunding through an equity crowdfunding platform. It's not just about funds; it's about building a loyal community around our brand. Additionally, our commitment to sustainable practices, from eco-design to electric cars, reflects our dedication to addressing environmental concerns."*

Climate Change Crisis/Extreme Weather/Resource Scarcity: Incapto can address environmental concerns by incorporating sustainable practices in its operations, sourcing, and packaging, aligning with the growing awareness of climate change and resource conservation. Indeed, Incapto was established with a clear mission: to provide a sustainable coffee experience centred on whole beans, while simultaneously eradicating detrimental practices prevalent in the industry, particularly the usage of capsules. Their commitment extends to the application of eco-design principles to each product, tirelessly seeking the most environmentally responsible approach to coffee roasting and delivery. Incapto firmly upholds the notion that convenience should not entail wasteful or unsustainable behaviours. Their approach eliminates the need for post-coffee mess, eliminates the necessity of discarding coffee filters or pods, and alleviates the burden of environmentally damaging habits, resulting in a guilt-free and responsible coffee experience.

All Incapto's management team understands the importance of sustainability and having a sustainable mindset is at the core of its values (see **Figures 6** and **7**).

Figure 6. In collaboration with 'Bolet ben Fet', Incapto delivers its organic coffee grounds to Bolet ben Fet, who use them to feed the mushrooms.
Source: created by Incapto.

Figure 7. Incapto is a BCorp Company since May 2023.
Source: created by Incapto.

P (Economics, Business, Politics):

Sustainable Living: Incapto can position itself as a brand that promotes sustainable living, resonating with environmentally conscious consumers and contributing to a more sustainable future. Incapto advocates for a simplified coffee consumption model, one that shuns plastics and superfluous products, demonstrating a commitment to eco-friendliness and responsible consumption.

Simplicity: Embracing simplicity aligns with the preferences of modern consumers seeking streamlined and meaningful experiences. Incapto possesses the capacity to accentuate the straightforwardness ingrained within its offerings, workflows, and communications. Evidently, the company presents itself as a bona fide substitute to coffee capsules by delivering entirely automated machines and coffee beans. This approach brings the supreme coffee experience directly to residences and workplaces, requiring nothing more than a press of a button to relish a freshly ground coffee delight.

According to the brand manager while using the ASPECT framework to analyse Incapto:

> *"In the realm of 'P'—Economics, Business, and Politics, we've realized the importance of positioning ourselves as advocates for sustainable living. Consumers today are increasingly conscious of their choices, and we want to make it easy for them to make eco-friendly decisions. By simplifying coffee consumption and eliminating wasteful products like capsules, we're promoting responsible consumption."*

E (Ecology, Environment):

Sustainable Manufacturing: The ASPECT analysis tool guides Incapto toward sustainable manufacturing practices, aligning with the increasing demand for environmentally friendly products and production processes. Incapto integrates eco-design principles into the process of crafting designs. It also extends the lifespan of machines by emphasizing repairability and facilitating second-hand sales.

Decarbonization: Incapto can adopt strategies to reduce its carbon footprint, supporting the global push for decarbonization and sustainability. They roast with no footprint, deliver the coffee in electric cars, and use 100% recyclable packaging. Also, they only roast organic coffee, free of pesticides.

When it comes to ecology, one of the founders said:

> *"The 'E'—Ecology and Environment category is where we've found our true purpose. Sustainable manufacturing and decarbonization of the coffee industry have become our primary focus. Just as the ASPECT framework guided us, we understood that we couldn't tackle every megatrend, but we could excel in these areas. Our commitment to eco-design, repairability, and a carbon-neutral approach to coffee roasting and delivery aligns perfectly with our mission to combat climate change. It's one of our foundation pillars"* (**Figure 8**).

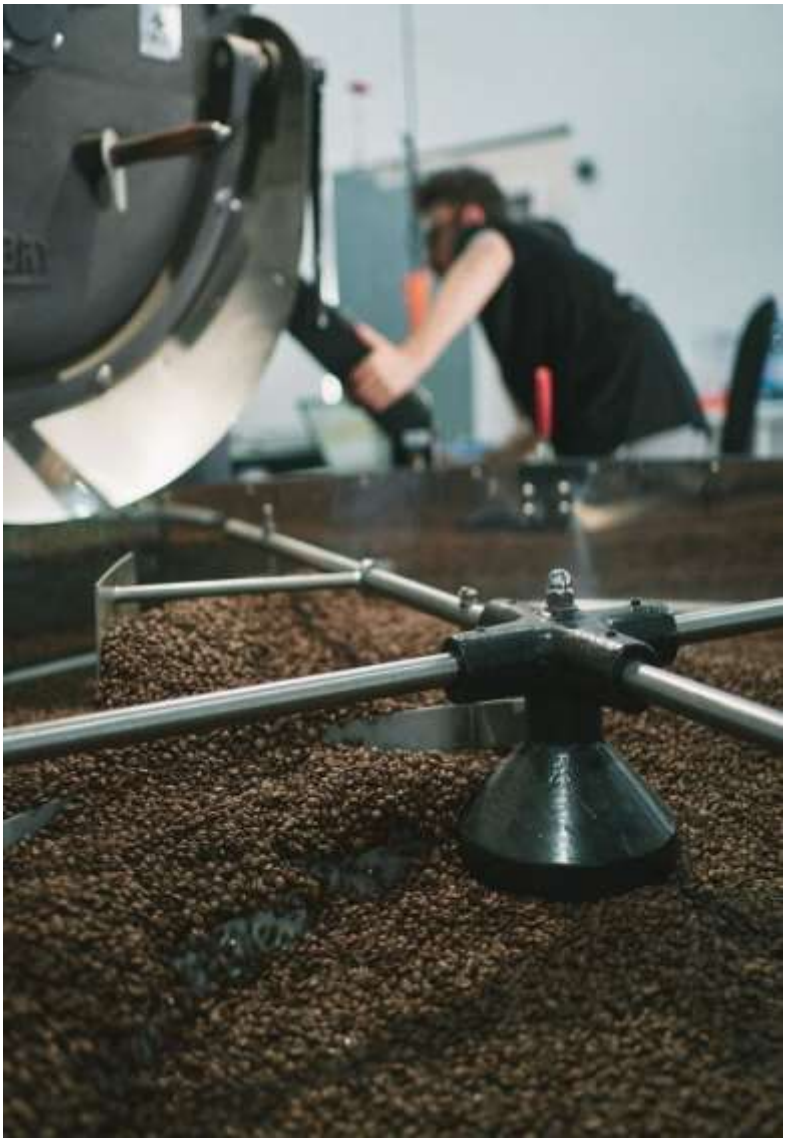

Figure 8. From bean to cup. Roasting process with electric roasting machines powered by solar panels.
Source: created by Incapto.

C (Customer):

Sectorial Transformation: By understanding sectorial transformations, Incapto can proactively adapt to shifts in the specialty coffee industry, ensuring its products and strategies remain relevant.

Brand Beings: The ASPECT analysis tool helps Incapto view its brand as a dynamic entity, fostering connections that go beyond transactions and creating a sense of the brand "being" in customers' lives. Incapto believes in simplicity, sustainability, direct relationships with consumers and farmers, and improving the coffee experience through digital enhancements.

While using the C section of Aspect Framework, the CMO reflected:

"In the realm of 'C'—Customer, we've recognized the importance of adapting to sectorial transformations and fostering a deeper connection with our audience. Our brand philosophy revolves around simplicity, sustainability, and direct relationships with consumers and farmers. We're constantly improving the coffee

experience through digital enhancements and customer-centricity."

T (Technology, Digital):

Applied Observability: The concept of applied observability encourages Incapto to gather actionable insights from customer interactions and behaviours, informing product enhancements and business decisions. Being customer-centric and using customer feedback is key for Incapto. Like every DNVB, Incapto gathers information from thousands of customers to apply to new products and improve customer experience and retention (**Figure 9**).

Figure 9. Design applied and personalized at every packaging through AI.
Source: created by Incapto.

Emergence of Internet of Things: Incapto can leverage IoT to enhance the coffee experience, from smart brewing solutions to connected consumer engagement initiatives.

Incapto has developed an intelligent coffee platform capable of extraordinary control and variability. Because the machine is Wi-Fi connected, it can learn, track, and communicate with the company. By knowing the coffee consumption, they can send freshly roasted coffee to every home or office.

All the management team agreed that Technology made a big difference at Incapto, and one of the Co-CEOs said:

"'T'—Technology and Digital has been a game-changer for us. Applied observability has allowed us to gather invaluable insights from our customers, driving product enhancements and smarter business decisions. Additionally, our embrace of the Internet of Things (IoT) has revolutionized the coffee experience. Our intelligent coffee platform, with its Wi-Fi connectivity, ensures we're always in touch with our customers and can deliver freshly roasted coffee right to their doorstep." (**Figure 10**).

Figure 10. Every machine is connected and coffee can be paid and delivered through QR identification and every mobile payment method.
Source: created by Incapto.

5. Discussion

The evolving significance and appropriateness of strategic frameworks in diverse business scenarios, especially for companies emerging in the fourth and fifth industrial revolutions, underscore the need for scholarly exploration. Historical literature has long advocated for a critical reassessment of traditional tools like SWOT and PESTEL, highlighting the need for criteria-based comparison to align with the complexities of modern business environments (Burgelman, et al., 2018; Hill and Westbrook, 1997; Hulland, 1999). Tools like ASPECT are pivotal for entities born in these advanced technological eras, suggesting a shift towards more dynamic and holistic analytical methods that capture the essence of digital and knowledge-driven economies.

The evolving landscape for Digitally Native Vertical Brands (DNVBs) necessitates new strategic analysis tools that incorporate design thinking, futurization, and megatrends (Dumitriu et al., 2019; Galizia et al., 2020; Hollebeek and Macky, 2019; Lau and Lee, 2016; Shibuya, 2020). This approach is essential for navigating the complexities of modern digital marketplaces, where traditional models may not fully capture the dynamic changes and opportunities presented by technological advancements and societal shifts. While PESTEL has been a foundational framework for assessing the macro-environmental factors affecting organizations (Yüksel, 2012), the digital era demands a more nuanced approach, recognizing the importance of art, culture, entertainment, society, ethics, and technology. This paper leverages the comprehensive analysis of Benzaghta et al. (2021) to deepen our insight into strategic frameworks, suggesting ASPECT as an enhanced method for capturing the complexity of the current business environment. ASPECT's holistic approach is crucial for DNVBs, as highlighted in Carnoy (2017) and Dunn (2016), offering insights into the

unique challenges and opportunities presented by the digital marketplace.

Theoretical Implications:

ASPECT's integration into strategic planning underscores a shift towards recognizing the influence of non-traditional factors on business strategy, aligning with Dorst's (2011) advocacy for design thinking in addressing complex problems. This approach reflects a broader trend in strategic management, moving beyond conventional boundaries to incorporate elements like design, futurization, and innovation (Brown and Kuratko, 2015; Manetti et al., 2021), which are vital for DNVBs navigating the digital landscape.

Managerial and Practical Implications:

For managers of DNVBs, adopting ASPECT means embracing a framework that accounts for the rapid technological and societal changes shaping consumer behaviour (eMarketer, 2022; IAB, 2018). This approach not only facilitates a more comprehensive analysis but also encourages innovation and adaptability, essential traits for success in the digital age (Lipskier, 2019; Oxman, 2017).

To sum up and regarding the case study, Incapto's immersion in the ASPECT analysis tool empowers the brand with an enriched comprehension of significant megatrends. This newfound insight enables Incapto to not only harmonize its strategies with dynamic consumer inclinations but also navigate through the currents of evolving societal norms and technological progress. As a result, Incapto emerges as a pioneering force within the specialty coffee realm, poised to not only meet the demands of the present but also to shape the future of its industry.

Unlike the conventional PESTEL analysis, which tends to provide a more static and compartmentalized view of external factors, the ASPECT analysis method offers Incapto a multifaceted and interconnected understanding. ASPECT's focus on design thinking methodology seamlessly integrates artistic, cultural, and entertainment dimensions, allowing Incapto to capture the nuances of consumer behaviour and preferences in the digital age. Moreover, ASPECT's holistic approach facilitates a more comprehensive analysis of sociocultural, economic, environmental, and technological trends, enabling Incapto to anticipate shifts and capitalize on emerging opportunities with agility and innovation.

In essence, ASPECT acts as a compass for Incapto, guiding its strategic decisions by not only revealing external forces but also illuminating the interplay and potential synergies between them. This, in turn, grants Incapto a distinct advantage over competitors, as it crafts a future that is not merely responsive, but actively influential, in the ever-evolving landscape of specialty coffee.

Finally, if we focus on DNVB's analysis of external factors, ASPECT is more aligned with the unique requirements of DNVBs than PESTEL, because it specifically caters to the dynamic and digital-centric nature of these businesses. ASPECT includes factors such as Art, Culture, Entertainment, Society, Ethics, and Technology, which are crucial for understanding the nuanced consumer behaviours and market trends of the digital economy. It provides a more comprehensive and relevant analysis for companies operating in the fast-paced, innovation-driven environments characteristic of the fourth and fifth industrial revolutions, enabling them to strategically navigate and leverage contemporary challenges and opportunities.

6. Conclusions, limitations, and avenues for future research

This paper intends to present the results obtained in ongoing research (Lara-Navarra et al., 2024a, 2024b; Manetti et al., 2021, 2022a, 2022b). The use of analysis tools based on design-thinking methodology allows for the generation of robust and effective future scenarios. The learning generated in the workshops about the ASPECT analysis tool had a positive impact, generating a solid foundation of information for the development of 11 specific proposals that cover each of the proposed objectives.

This tool presents an opportunity for small digital companies to compete with large enterprises, through enhanced external analysis, potentially aiding them in conceptualizing new business models.

Compared to tools like SWOT analysis, PESTEL, or the Business Model Canvas (Osterwalder and Pigneur, 2010), commonly used by companies for strategic decision-making, ASPECT offers greater flexibility as a more comprehensive and exhaustive analysis tool, combining a wider range of variables. ASPECT also provides enhanced analysis capabilities at a detailed level, allowing for a deeper understanding of how changes in each variable affect decision-making, considering critical factors such as technology, sustainability, or entertainment. This enables companies to make more informed decisions, with greater confidence and a higher likelihood of success. This is because ASPECT provides a more global and comprehensive view of the company's situation, facilitating more accurate decision-making by utilizing and conceptualizing significantly more information. Starting from the basis that one of the major challenges for companies, especially in initial phases with a great deal of uncertainty and information to analyse, is to make decisions based on the simplification of all this data, we consider ASPECT a more advanced decision-making tool compared to those used in recent decades.

The key differences between ASPECT and PESTEL in the analysis of the market for Digital Native Vertical Brands (DNVB) lie in the aspects each addresses and how they focus on different areas. Here are some key differences:

Scope: PESTEL covers six broad categories - Political, Economic, Socio-cultural, Technological, Environmental, and Legal. On the other hand, ASPECT focuses on more specific areas, such as art, culture, entertainment, society, ethics, people, psychology, economics, markets, regulations, cities, climate, natural environment, technology, and sciences.

Inclusion of contemporary aspects: ASPECT focuses on more contemporary and specific aspects relevant to DNVBs, such as art, entertainment, and psychology, while PESTEL may not address these aspects in as much detail.

Consideration of the human dimension: ASPECT includes elements related to people, emotions, and psychology, which is especially relevant to understanding customers and creating emotional connections with them. PESTEL, on the other hand, may not cover these aspects in depth.

Levels of breakdown: ASPECT breaks down each category into more specific areas, allowing for more detailed and contextual analysis. PESTEL, on the other hand, provides broader categories without such a detailed breakdown.

In conclusion, ASPECT offers a more exhaustive analysis tool for strategic decision-making, with greater flexibility and depth of analysis. This allows companies

to make more accurate decisions and with a higher probability of success by simplifying the complexity of the environment and providing a more comprehensive view of the situation. This tool not only assists companies in making better decisions but also contributes to the creation of better futures by allowing design professionals to interpret evolutionary phenomena in a creative and innovative way to generate sustainable solutions.

In conclusion, while ASPECT provides a more comprehensive framework than PESTEL for understanding the complex environments in which DNVBs operate, it is important to recognize its limitations. The broad scope of ASPECT might require extensive resources for thorough analysis, potentially making it challenging for smaller DNVBs with limited capabilities. Furthermore, the rapidly evolving digital market might introduce new factors that ASPECT currently does not fully address.

Future research should explore the integration of emerging technologies and digital trends into the ASPECT framework to ensure its continued relevance. Additionally, empirical studies assessing the practical application of ASPECT in various DNVB contexts would provide valuable insights into its effectiveness and areas for refinement. This could include comparative studies with other strategic frameworks to further validate ASPECT's utility and adaptability in the face of the fourth and fifth industrial revolutions.

Finally, the use of ASPECT as a tool for analysing external factors will be employed in future research as part of a framework to be presented, focused on assisting early-stage startups in transitioning to the scaleup phase. This framework is called 'The Scaling Wheel'.

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