The making of marketing decisions in modern marketing environments

Fredrik Nordin [a,*], Annika Ravald [b]

[a] Stockholm Business School, Stockholm University, SE-106 91 Stockholm, Sweden
[b] Department of Marketing, CERS — Centre for Relationship Marketing and Service Management, Hanken School of Economics, P.O.BOX 287, FIN-65101 Vaasa, Finland

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ABSTRACT

Currently, marketing is undergoing a major shift driven by environmental disruptions and advances in marketing technologies. This shift has implications for marketing decision-making. However, research on how marketing managers navigate modern marketing environments' complex, volatile, and data-intensive nature is limited. This study addresses this gap by qualitatively analyzing marketing managers' decision-making processes in 15 companies. Using the naturalistic decision-making approach and the situative perspective on cognition and action as theoretical lenses, we identify three key characteristics of decision-making in modern marketing environments—namely, agility, inventiveness, and reflexiveness. Our findings provide empirically grounded insights into the cognitive and behavioral processes involved in marketing decision-making and contribute to a deeper understanding of how managers navigate—and respond to—modern marketing environments' challenges.

1. Introduction

In the current business landscape, which is characterized by continuous flux and uncertainty (Minciu et al., 2020), and simultaneously flooded with data (Bradlow et al., 2017), the nature of marketing is undergoing transformation. Marketing technology's rapid development (Hoffman et al., 2022) brings increased opportunities to communicate and engage with customers, as well as follow and analyze their behaviors and sentiments (Holmlund, et al., 2020). These changing circumstances have altered marketing managers' decision-making behaviors (Hoffman, et al., 2022). On the one hand, the availability of specific real-time data implies opportunities for marketing managers to make informed decisions to meet their customers' dynamic needs and keep up with changes in the environment. On the other hand, the dynamics and complexity of marketing—combined with those of the business environment at large—challenge even experienced marketing managers (Moisander et al., 2020). Their current schemas for interpreting marketing problems and opportunities, including strategies for acting on these, might be insufficient or even obsolete (Laureiro-Martínez & Brusoni, 2018). Accordingly, to provide valuable insights for both scholars and practitioners, we propose conducting further research on how marketing managers handle decision-making in the complex,

data-intensive, and dynamic modern marketing environment.

Research on decision-making in marketing (DMM) from a general perspective has predominantly relied on Wierenga and colleagues' contributions (van Bruggen & Wierenga, 2000; Wierenga, 2011; Wierenga & van Bruggen, 1997). More recent research has provided insights into the role of organizational procedures and values, managerial perceptions, and experience-based rules in decision-making (Challagalla et al., 2014; Kashmiri & Mahajan, 2017), together with managerial dispositions toward intuition—rather than analytical evidence—in decision-making (Tarka, 2018). Another emerging research stream has examined the use of marketing technologies—including various analytics, such as real-time data processing (Jabbar et al., 2020) and artificial intelligence (Huang & Rust, 2021)—as support for decision-making. Although extant research has provided valuable DMM-related contributions, we contend that calls (Bauer et al., 2013; Wierenga, 2011, 2016) for further empirical research focusing on *how* managers make marketing decisions are still valid. The few exceptions that do exist tend to have a narrow focus on specific issues, such as pricing (Bogomolova et al., 2017). Decision-making during periods of uncertainty and flux has indeed attracted scholars' attention (Bogomolova, et al., 2017; Gilbert-Saad et al., 2021; Laureiro-Martínez and Brusoni, 2018); however, such conditions' implications on DMM have been overlooked.

Notably, there are a few exceptions (Chari et al., 2014; Read et al., 2009); however, we argue that the research stream explicitly addressing managers' behaviors when making marketing decisions under modern marketing environments' conditions is thin, fragmented, and inconsistent. A more general conceptualization is required.

Against this backdrop, this study addresses how marketing managers make decisions in modern marketing environments. We aim to contribute novel and empirically grounded insights; hence, we employ an alternative theoretical lens. We approach the research task from a naturalistic decision-making perspective (e.g., Klein, 1993; Orasanu & Connolly, 1993)—a perspective that examines how experienced decision-makers handle demanding decision-making situations in real-world settings. Additionally, we draw on the situative perspective of cognition and action (Elsbach et al., 2005; Greeno, 1998), which embraces the embeddedness of the decision-maker's cognitions and actions in the surrounding context, and the dynamic interrelations between actors and available decision-support systems. We consider the combination of these two perspectives as fertile ground to better understand decision-making's assumed tortuous nature in modern marketing environments. We synthesize our findings into the agility, inventiveness, and reflexiveness (AIR) model, visualized using the metaphor of a triple helix.

2. 2. Frame of reference

2.1. The making of marketing decisions in the modern marketing environment

Applying novel marketing technologies amplifies opportunities for marketing managers to acquire and make sense of market data and, thus, make more informed decisions. Simultaneously, the challenges of an infinite data set complicate decision-making and demand extensive cognitive effort when pursuing meaningful and correct interpretations to arrive at appropriate conclusions (Du et al., 2021; Skiera, 2016). Already in 2001, van Bruggen et al. (2001) emphasized that marketing managers risk becoming paralyzed by never-ending flows of market data. Since then, the data growth has been exponential. Numerous markets' increasing dynamism (Rust, 2020) and frequent discontinuities in the marketing environment's causal texture (Emery & Trist, 1965) exacerbate the challenges for marketing managers. When the marketing environment's volatility increases, marketing managers "will be hard-pressed to understand and interpret what is going on and constantly will revise their mental models of the market" (Wierenga and van Bruggen, 1997, p. 27). Modern marketing environments are complex systemic constructions with multiple and intricate connections among various constituents, including actors, technology, and contextual elements. Owing to collective action, the environment evolves along a trajectory that is not always predictable.

Evidently, in such decision-making contexts, making and reconsidering decisions swiftly and frequently on an ongoing basis as well as rethinking the schemas for handling DMM are needed. Hence, a logical consequence would be that marketing managers involved in decision-making continuously engage in observing, interpreting, and shaping behaviors both internally and externally. Furthermore, their actions are based on vast—but often incoherent—information.

2.2. Current state of knowledge in managerial decision-making in marketing

Research on decision-making is extensive, spanning various contexts, including turbulent and uncertain situations. Although the findings from this literature are applicable to marketing, Wierenga (2011) argues that marketing decisions' nature differs significantly from other types of organizational decisions. Marketing is a distinct professional field involving unique decision-making tasks, ranging from highly specific and operational decisions to broad and strategic decisions affecting both the firm's internal procedures and its role and legacy in its surrounding environment.

Wierenga's research on DMM is seminal, contributing to a comprehensive framework that integrates the factors influencing decision-making—with the problem-solving modes of managers and supportive systems that facilitate decision-making (Wierenga, 2011; Wierenga, 2016). The framework highlights that the modes that a marketing manager employs when making decisions—namely, optimizing, reasoning, analogizing, and creating—depend on the characteristics of the decision problem, decision environment, and decision-maker: A problem is more or less structured, the context more or less stable, and the decision-maker more or less analytical. These circumstances influence how a manager approaches a decision task—guiding, for example, whether to predominantly rely on quantitative data or more intuitively rely on creativity and previous experiences. This framework provides a generic overview of DMM, including details regarding the framework's structural constituents. Wierenga (2011, 2016) also highlighted the need for further research in several key areas, particularly marketing decision-makers' behavior.

Owing to the modern marketing environments' attributes, decision-making is seldom a straightforward process with clear routines, and the outcomes of marketing decisions can be difficult to anticipate and understand. One can assume that decision-making in marketing is characterized by exploration and experimentation, whereby managers learn along the process, and the strategy for how to proceed emerges en route. A toolbox of appropriate concepts is therefore required to empirically study and understand decision-making.

2.3. A naturalistic and situative lens on decision-making

In the naturalistic decision-making literature (e.g., Klein, 1993; Orasanu & Connolly, 1993), researchers have delved into how experienced practitioners make decisions "in the wild" under challenging conditions, including limited time, uncertainty, vague goals, and unstable conditions. In this research stream, decision-making is approached as a means to maneuver a continuous flow of actions toward a goal. Managers first "think a little, act a little, and then evaluate the results before they think and act a little more" (Orasanu & Connolly, 1993, p. 19) to arrive at a decision that seems most rational at that specific point of time for a particular situation. Thus, decision-makers are considered boundedly rational (Simon, 1955); they use heuristics to quickly arrive at satisfactory solutions to problems (Gigerenzer, 2004). Decision-making is an emerging process performed as a series of interventions ingrained in complex work practices (Alby & Zucchermaglio, 2006). We find this approach to decision-making highly relevant, whereby exploratory action shapes cognition and goals in an ongoing learning cycle (Connolly & Wagner, 1988).

In uncertain situations, managers draw upon their experiences and adopt a "recognition-primed" or perception-based decision process, making mental simulations to rapidly arrive at decisions on how to act (Klein, 1993). Based on experience and recognition of possible familiarity with the decision situation, managers leverage available information and mentally simulate successive steps and their potential outcomes. Furthermore, they reassess the situation to ensure that they consider any changes—or previously overlooked factors—that might impact their decision making. The situatedness and lack of structure of many managerial problems, require decision-makers to approach the decision situation and task from several angles, synthesizing isolated bits of data with experience, and intuition as well as rational analysis (Isenberg, 1984). The increasing possibility of inferring actions from retrospective and real-time data using modern marketing technology makes such an intervention of intuition and rational analysis—sometimes termed a dual-process approach to decision-making (e.g., Wierenga, 2011)—even more salient.

The situative perspective is a related stream of literature resting on the central assumption that human cognition and action arise from an

interplay between people and the material, technological, and discursive contexts in which they are embedded. This perspective's proponents (Brown et al., 1989; Elsbach, et al., 2005; Greeno, 1998) have emphasized that physical and cognitive actions are inextricably *intertwined* with the situation and not merely the *result of* situational factors or the mental structures of the individual actors. According to the situative perspective, all cognitions are transitory, temporally bounded, perceptual frameworks—subject to an individual's experiences and interactions in an environment that is "changing as the people involved act and interact with each other and their physical surroundings" (Elsbach, et al., 2005, p. 423–424). This implies that the decision situation evolves "in a process of co-construction and negotiation between participants and other systems involved in the situation" (Greeno, 1998). The actors involved do not merely *react* to the circumstances wherein they are situated. Additionally, they enact the situation through their *interactions*, allowing them to both perceive and author the situations in which they are embedded (Brown et al., 2015). The situative perspective views cognition as a dynamic, ongoing process evolving through intervention with the environment in multiple feedback loops (Shattuck & Miller, 2006).

According to Kirsh and Maglio (1994), actions are not merely a reaction to various external events or part of implementing a plan—so-called *pragmatic* actions. They demonstrated that actors can also perform so-called *epistemic* actions to reduce their cognitive load and resolve situations wherein specific data are lacking. For example, marketing managers may post information on social media to trigger informative customer responses. Marketing managers then employ such informational cues in a deliberate process of reasoning to reach "situated cognitions" regarding customers and the market; constructing explanations and developing mental representations of the current situation and how "the world presents itself" (Roth & Jornet, 2013, p. 464). Thus, to effectively navigate the environment and make informed decisions, decision-makers not only respond to the current situation as described in the adaptive decision-making research stream (Payne et al., 1993) but also take proactive steps to achieve a more comprehensive and accurate understanding of their environment.

2.4. Summary and specification of purpose

Combining the above-given theoretical threads, we tentatively characterize decision-making in modern marketing environments as an exploratory process whereby managers' experiences, cognitions, and actions are closely intertwined with the situations wherein they are embedded. By employing these naturalistic and situative lenses, we aim to make an empirically grounded contribution that complements the structural perspectives on decision-making in marketing (van Bruggen et al., 1998; van Bruggen & Wierenga, 2000; Wierenga, 2011; Wierenga & van Bruggen, 1997). This contribution is in the form of a behavioral layer. Accordingly, we investigate *the nature of marketing managers' decision-making behaviors*, and *unravel the specific decision-making actions that they engage in* to handle today's volatile, complex, and data-intensive marketing environments.

3. Methodology

3.1. Research design and sample

Per our literature review, a more in-depth study of decision making in modern marketing environments is needed. To this end, we selected an abductive approach (Dubois & Gadde, 2002) and iterated between empirical evidence and theory to first conceptualize—and then describe and illustrate—DMM in such environments. To increase our conclusions' transferability, we applied judgment sampling and aimed for a "maximum variation sample" (Marshall, 1996, p. 523). Our empirical data are derived from a set of 15 companies of different sizes and ages from different industries—offering a wide range of products and

solutions—in Sweden and Finland. This enables us to identify DMM's valid characteristics across industries and market segments. We scouted LinkedIn and our professional networks for marketing managers with at least five years of experience in senior positions. The sampling process proceeded stepwise. After conducting a set of interviews, we assessed the insights gained and added new informants that we expected to provide both complementary and contrasting experiences. We continued to add more informants until when further interviews did not seem to contribute significantly different insights (cf. Eisenhardt, 1989). Finally, we invited our interviewees to workshop discussions; herein, we shared our preliminary findings and conclusions to verify the validity of our interpretations. To these workshops, we invited also a few additional informants to again acquire nuanced, alternative inputs and reflections. Table 1 briefly describes the study sample.

3.2. Data collection

Interviews were conducted between 2018 and 2019, each lasting 1–1.5 h. The interviews were recorded and transcribed verbatim. We used an interview protocol (see Web Appendix A) to organize interviews with the informants and build a nuanced understanding of their everyday tasks and activities. The interviews were semi-structured and

Table 1
Informant descriptions.

Informant pseudonym	Position	Company pseudonym	Industry	Approximate size 2019 (employees / turnover in M€)*
Matt +	Head of Strategic Marketing	SysCo	Telecom	100,000 / 10,000
Catheryn √	Head of Campaigns	SysCo	Telecom	100,000 / 10,000
Hank +	Sales and Marketing Director	OfficeCo	Electronics	100 / 30
Stina +	Head of Marketing	TelCo	Telecom	20,000 / 10,000
Nolan √	Head of Marketing	TelCo	Telecom	20,000 / 10,000
Brent +	VP Marketing and Communications	MetalCo	Industrial	10,000 / 1,000
Janet √	Marketing Manager	MetalCo	Industrial	10,000 / 1,000
Neven §	Head of Marketing	CardCo	Financial technology	500 / 100
Johnny §	Head of Customer Care	EnergyCo	Energy	400 / 200
Ulrich §	Service Marketing Manager	IndustryCo	Energy	4,000 / 3,000
Jill §	Marketing Manager	ShippingCo	Shipping	100 / 20
Kenneth §	Marketing Director	PhoneCo	Consumer Electronics	300 / 2,000
Claude §	President	FurnitureCo	Furniture	10,000 / 100
Cynthia § x	Portfolio Marketing Manager	ITCo	IT Services	1,000 / 5,000
Erin §	Marketing Director	HouseholdCo	Household utensils	300 / 100
Tim §	Digital Marketing Manager	PowerCo	Industrial	20,000 / 5,000
Nick §	Implementation specialist	ITServiceCo	IT Services	50 / 10
Amy √	Marketing Manager	RealestateCo	Software	70 / 10

* €1.00 = US$1.21 at January 2021 (Oanda). × Online interview; otherwise face-to-face. + Informant participated in both interview and workshop; § interview only; √ workshop only.

conducted as dialogues instead of question-and-answer sessions, thus providing both focus and flexibility. Consequently, we could probe for depth into interesting details arising during conversations and further investigate their reasoning (Qu & Dumay, 2011).

To elicit naturalistic stories from our informants as practitioners, we asked them to provide narratives of recent real-life marketing decisions. By anchoring the interviews in the informants' own experiences, we could "reconstruct social events from the perspective of informants as directly as possible" (Jovchelovitch & Bauer, 2000, p. 59), as in the so-called retrospective debriefing method (Taylor & Dionne, 2000). By focusing on *recently* made decisions, our informants could reproduce the decision-making processes with relative ease, and we could discuss the steps, actors involved, difficulties, solutions, and considerations related to the decision. To obtain realistic and authentic—instead of idealized and normative—descriptions, we emphasized building a safe and trustworthy interview situation. During the interviews, we presented the informants with illustrative examples from other companies and asked for explicit examples from their everyday lives.

We presented and discussed the preliminary findings during two 3-hour workshops with four of the interviewed managers, three of their colleagues, and one additional informant. We refer to them collectively as our informants. These workshops aimed to share our findings, obtain further examples from practice, and challenge tentative interpretations. Following Guba (1978), three peer researchers participated in the workshops to enhance the findings' and conclusions' trustworthiness. They took notes from discussions, evaluated the preliminary analysis, and provided general feedback regarding the study. We emailed a summary of our analysis to all informants to verify our interpretations and conclusions.

To obtain a more complete picture of these companies, we studied their annual reports and websites. Thereby, we received a complementary picture of internal and external contextual factors, such as turnover figures and number of employees.

3.3. Data analysis

The analysis was abductive—a creative process of multiple iterations between data and theory (Dubois & Gadde, 2002). The tentative characterization of DMM served as a "vague starting point" (Ragin, 1992, p. 218) for an open, iterative, and reflexive thematic analysis of our empirical data (Braun & Clarke, 2021). We gradually refined and evaluated emerging insights by drawing on data from an increasing number of interviews and interpretations based on the literature. We assumed that our experienced informants would be equally effective at reflecting on their decision-making situations. This implied that we openly presented tentative interpretations of the informant's answers and asked follow-up questions during the interviews to verify that we had understood the inner meaning of their narratives correctly. Examples of the questions were "am I on the right track?" and "did I understand this in the same way you meant it?" (Carlson, 2010, p. 1195). Such continuous "member-checking" is advocated to secure the results' and conclusions,' validity, and qualitative studies' credibility (Doyle, 2007).

While we collected the data, we noted our individual reflections and emergent patterns as analytical memos (Saldaña, 2012). We continuously discussed these in parallel with ongoing data collection and comparisons with relevant literature (Dubois & Gadde, 2002). According to Morse et al. (2002), concurrent and iterative data collection and analyses are essential for reliability and validity. The interviews comprised approximately 200 single-spaced pages, or 100,000 words, of verbatim interview transcripts. Both researchers read all the transcribed interviews independently, and developed an initial synthesis of the results. Subsequently, we discussed our individual interpretations of the micro-level actions marketing managers engage in when they make decisions, and how these could be clustered into overarching characteristics of the process whereby they make marketing decisions. Further, we elaborated on the role of modern marketing environments'

attributes. Finally, we uploaded the transcriptions to QDA Miner Lite—a program for the computer-aided analysis of qualitative data—providing more systematic content analysis of the decision-making characteristics and their underlying actions. After several iterations and discussions of the results, we agreed on a coding structure that is reflected in the findings and model presented below.

4. Findings and analysis

4.1. A managerial outlook on decision-making in modern marketing environments

Based on the extant literature, we previously portrayed modern marketing environments as complex, volatile, and data-intensive, with significant consequences for DMM. Our informants confirmed this, as the following description and quotes in Table 2 illustrate.

The complexity of modern marketing environments arises from a highly interwoven web of interrelationships and interdependencies between technologies and actors across industries. It aggravates decision-making, as it obstructs the development of a satisfactory understanding of where the business is going, and even where it currently stands. The informants described how decisions are made "blindly," and that they often muddle along with inadequate comprehension of what decision is the best alternative, and what market responses to expect. They emphasized that digital technologies provide unprecedented opportunities to connect with various stakeholders, but that skillful exploitation of these technologies adds new aspects to decision making. They now raise questions as to what content to produce, for which channels and with what trackability, to successfully arrive at intended outcomes.

Our informants unanimously agree that environmental volatility has significant implications for DMM. This is not only for those who represent firms operating in emerging business fields or industries mainly driven by technological developments. The pace of development is rapid and sometimes highly unpredictable, inherently fast-moving, and versatile. This renders decision making difficult. Taking time to carefully consider the best action is rarely possible. Our informants emphasized the necessity of continuously keeping up with environmental changes. Furthermore, volatility implies that the validity of business opportunities is short, and the ability to act on them when they emerge is of key importance. In brief, our informants described decision-making as repeated parallel sprints during which managers, after finishing one heat, immediately jump to the next sprint based on their assessments of the situation.

According to the informants, new marketing technologies and digital solutions are welcomed. This is because they increase the availability of accurate and timely data, thereby simplifying decision-making. The

Table 2
Implications of attributes of modern marketing environments for marketing decision-making.

Attribute	Illustrative quotes
Complexity	*"New actors enter the scene of competition from everywhere at once, sometimes with completely different business models." Matt, SysCo* *"Today, when making decisions as compared to a few years back – it is much more difficult to predict what the outcome will be." Erin, HouseholdCo*
Volatility	*"Things happen really fast. If we think we did something very well and that we can draw our breath – we will get run by in two months." Matt, SysCo* *"We must act fast…because there is this window of opportunity right now. We cannot set up a 30 days' workshop – when we are finished no one will care anymore." Johnny, EnergyCo*
Data-intensity	*"The availability of data is an asset, but … to navigate these hurdles of information is a real challenge. I mean, you cannot take your time forever – a decision must be made, sometimes fast." Cynthia, ITCo* *"There is such an abundance of data that if you try to grasp it you can easily drown - you never arrive at an actionable conclusion and fail to get down to action." (Kenneth, PhoneCo)*

ability to measure the effects of, for instance, communication campaigns and track customer behaviors in real time provides important insights. However, they emphasized that data intensity, in terms of an abundance of multifaceted data, adds new challenges to decision-making. Data overload can lead marketing managers astray, absorbing time and capacity, and obstructing them from timeously reaching the decision point. Accordingly, the informants stressed the importance of being able to rapidly judge the validity of the available information to maintain speed and direction.

In the following section, we delve further into how our informants handle this situation in connection with the DMM.

4.2. Making marketing decisions—the AIR-model

Three intertwined characteristics associated with marketing decision-making emerged from our analysis: agility, inventiveness, and reflexiveness. Together, these constitute our AIR model, which captures how marketing managers navigate through the complexity, volatility, and data intensity of modern marketing environments. In the following section we explain what we mean by these three characteristics, including the specific actions that underpin them. We also include illustrative quotes from our interviews. We present additional quotes for each characteristic in Web Appendices B-D.

4.2.1. Marketing decision-making is agile.

The empirical data revealed that our informants shared a strong intention to make decisions that enabled their organizations to proceed in an appropriate direction at an appropriate speed. To this end, they pay attention to what is happening in a wider environment and keep a close eye on the effects of both ongoing and completed activities. They employ this information not only to further improve ongoing marketing activities, but also to initiate strategic turns in the organization. This is to keep it aligned with the continuous and sometimes rapid changes to the marketing environment. We characterize this decision-making behavior as *agile*, meaning that marketing managers attentively assess and act upon internal and external cues in an experimental and proactive way. This approach emphasizes the interplay between actions and the environment, similar to naturalistic and situative research traditions (Alby & Zucchermaglio, 2006; Connolly & Wagner, 1988; Greeno, 1998). According to our empirical data, agile decision-making behavior entails four micro-level actions that fall into two main categories: *surveilling* the business environment for signals of ongoing and emerging change, and *responding* to these in an efficient and fit-for-purpose manner. Table 3 contains illustrative quotes for each action.

Surveilling refers to actions that are essentially about staying abreast of relevant market changes by actively and attentively observing real-time data and signals in the environment. These include the activities of and responses from customers, as well as other stakeholders. Our

Table 3
Agile decision-making, underpinning actions, and illustrative quotes.

Actions		Illustrative quotes
SURVEIL	**Scan**	*"I look a lot at what is happening around us, and what is at the lips of people in various markets and segments."* Ulrich – IndustryCo
	Track	*"We track everything – from OBS-values to cut-through, including views, bounce-rates, reach and impact. Did the brand and message deliver, did the users like it?"* Kenneth – PowCo
RESPOND	**Turn**	*"Based on the research data we had – a lot – we decided to pivot a new technological solution and brand it from the user perspective instead of its technological aspects."* Matt – SysCo
	Tweak	*"It is important that we get things up and running quickly. Then we go back and re-iterate when necessary, for instance the digital campaign or the specs of the solutions we offer."* Cynthia – ITCo

interviews clearly showed that decisions evolve in interaction with the environment, and that managers keep track of this continuously. The first microlevel action belonging to surveilling is *scanning*. The market is continuously being scanned to identify relevant trends and developments related to competitors, technologies, and customer needs. For example, Cynthia (ITCo) said, "We have an entire team that works only with market insights and there is data at all possible different levels on which I base my decisions." Furthermore, our informants regularly engaged in focused surveillance activities such as follow-ups on the effects of specific campaigns and price adjustments. We refer to this as *tracking*. Neven (CardCo) explained that they "produce a discount code with a specific landing page and then track how different visitors respond to it". This can easily be accomplished in modern marketing environments. Several informants told us how they tracked banner ad performance through click-through rates in real time. The goal of scanning and tracking is to enable informed decisions, the effects of which are traced in a do-learn recursive cycle.

Responding, on the other hand, concerns actions conducted by marketing managers when they respond to various cues that emerge during surveillance. As suggested by the naturalistic perspective on decision making (e.g., Klein, 1993), decision-makers evaluate and adjust their actions based on new insights and what seems to work. In the instance of CardCo, the firm operates in an industry that moved rapidly into previously unchartered but highly competitive waters - where customer behavior changes rapidly. Neven (CardCo) stated that his marketing team is constantly attempting to develop its strategies and operations by adjusting its marketing content and social media portfolios based on insights gained from existing and potential customers during surveillance. Based on our interviews, we identified two types of micro-level actions through which marketing decision-makers respond. One is *tweaking*, that is, making minor adjustments to previously implemented actions and decisions after determining what works in the market and what does not. Our informants explained that there were seldom tried-and-tested courses of action to choose from. For instance, they adjust marketing content on social media platforms in a series of iterations to achieve better reach or higher impact. "Then we launch it, test it, get feedback, improve it, and so on. Today, we have shorter and much faster decision cycles", Matt (SysCo) explained. Our informants also described a more radical response, referred to as *turning*. The difference between tweaking and turning is that the latter implies a more fundamental shift. Here, the decision-maker initiates a larger shift in the organization and the business it operates, such as redefining strategic goals, approaching new segments, or even shifting the business model to exploit emerging business opportunities. For example, Stina (TelCo) explained how market research, including interviews and observations, led them to pivot their approach on a new technological solution and brand it from the user's perspective instead of its technological aspects. Stina's team had a strong conviction that this strategy would resonate much better with the needs of prospective users, and decided to make this turn.

4.2.2. Marketing decision-making is inventive.

In their roles as marketing managers, our informants emphasized their "midstream" position at the interface between the external environment and the company's internal operations. From that position, they actively strove to mobilize opportunities and resources in both internal and external environments to pursue both short and long-term organizational goals. This means that they attempted to influence and even co-construct the decision situation through an interactive process with stakeholders, both inside and outside the organization. These activities often employ various technological systems as described in the situative research stream (e.g., Greeno, 1998). Today's volatile and complex environment amplifies the importance of such behavior, which we call *inventive*. Using this term, we refer to how managers actively exploit specific resources and expertise to alter the decision-making scene and deliberately evoke a desirable path of development that aligns with the immediate goals and longer-term objectives of the

organization. Based on our analysis, we divide inventive behavior into two categories, each of which contains two micro-level actions. The first is *leveraging* opportunities and resources, and the second is *reframing* the mindsets of internal and external stakeholders. Table 4 presents illustrative quotes for each micro-level action.

More precisely, *leveraging* refers to mobilizing opportunities that are latent or arise suddenly. Our informants explained how they actively pushed for things to happen in the face of such opportunities. Leveraging is underpinned by two microlevel actions: *catching* and *hatching*. Marketing managers catch the opportunities that emerge and act upon them. These opportunities reside in broader market environments, such as when new market segments emerge as a result of technological developments. They can also result from changes in the market structure in a more immediate environment, or from opportunities rendered by new marketing technologies. Regarding the latter, our informants explained that they use such technologies for specific purposes, such as pretesting alternative marketing content or stimulating reactions from users on social media. They are also used experimentally, or as Neven from CardCo put it, "Sometimes we do these things just because we can". He explained that their digital skills constitute an asset that gives them a knowledge lead on the market. The other side of leveraging is *hatching*, and by this we mean micro-level actions through which marketing managers try to figure out how to exploit emerging opportunities in the most beneficial way. This is done to optimize use of available resources and the achievement of short- and long-term goals. Neven explained that organizations often enter new markets and must decide what content to produce, given the circumstances of the market, in order to obtain the desired effect. He described how the team, after setting an objective for the desired effect from specific campaigns or other activities, sits down and brainstorms on how to develop a plan. They combine all their shared experiences, digital skills, and creativity into one pot to deliver the best blend. "We have no legacy of doing things in a certain way. Rather, we start from scratch – How to do this given the situation at hand?", he explained. The other informants used similar approaches. As there are limited best practices to rely on in today's transforming landscapes, hatching often implies the experimental and iterative decision cycles presented in the section on agile decision-making above.

By *reframing*, we refer to actions taken to influence the mental models of internal and external stakeholders. The purpose is to build a deeper shared understanding of certain problems, needs, and opportunities and to gain support for alternative courses of action. Our informants noted that these types of actions are essential in dynamic contexts where things develop rapidly and unpredictably. Otherwise, it would be difficult to manifest the necessary developments, and there would be a risk of stagnation. Several informants acknowledged that they are often the first to realize the need of changing the strategic course in the organization. "In marketing, we are visionary and tend to see opportunities the future will bring… how we would like to wrap things and how the organization should operate, while in other areas of

the organization, people prefer to keep the old-school way of doing things…being very traditional about how things should be done" (Brent, MetalCo). Therefore, systematic work is required to change the mindsets of the relevant stakeholders, including top management. Microlevel actions that constitute reframing include *planting* and *trigging*. Through *planting*, marketing managers introduce their ideas to selected stakeholders to gradually gain support for alternative courses of action. This type of behavior can be regarded as so-called soft influence tactics (Kipnis et al., 1980). Ulrich (IndustryCo) explained how he talks "to influential people, share information of what is coming." At the same time, he fishes for support and warms up his network "to build a positive ground for what I want to happen, layer by layer." It "feels like being a politician," he concluded. We found that our informants employed the same approach to get targeted users to adopt new technological solutions such as machine learning. Matt (SysCo) described how they carefully listened to users' responses when communicating information about novel solutions and the benefits of adopting them. They then gradually strengthened arguments that seemed to deliver the best traction. These are arguments that make intended users more ready to adopt. Sometimes, these soft tactics are insufficient. In such cases, informants tend to act with more authority, calling for instant action from targeted stakeholders. This is what we call *trigging*. When a product failure occurred owing to an outdated production line at Furfurniture Co., Claude took instant action. He snapped a photo of the disaster and sent it to the top management with a clear call to action: "This is not ok! Invest now!". His efforts paid off as the management team took his advice and invested in necessary updates. Another example is when real-time data or other signals indicate that the brand is losing its position or that the user experience is deteriorating. Ulrich (IndustryCo) explained how he can get very pushy in such situations and attempts to get the green light instantly: "Hey, we really must do this now, or even yesterday!".

4.2.3. Marketing decision-making is reflexive.

Despite the messy decision situations that our informants often find themselves in, our study shows that they do their best to make as well-informed and valid decisions as possible. They not only critically evaluate the available underlying base of information (data, previous experiences, etc.), but also assess the short- and long-term fit of a tentative decision with the company's objectives and current state of business. This decision-making behavior is referred to as *reflexive*, meaning that marketing managers constructively and critically juxtapose and synthesize all pieces of information relevant to the decision at hand. This is reminiscent of ongoing cognitive assessment described from a situative perspective (e.g., Elsbach, et al., 2005). The conversations we had with the informants suggest that this is particularly important in complex and volatile environments where there is uncertainty regarding both the validity of the decision grounds and the consequences of alternative decisions. Reflexive behavior is manifested by four micro-level actions that can be divided into two categories. The first is *corroborating* and concerns strengthening combinations of data, experiences, and gut feelings linked to the situation and decision. *Challenging* on the other hand, relates to the critical intervention of all assumptions, data, and interpretations used as grounds for making a decision. Table 5 provides illustrative quotes for each action.

Specifically, *corroborating* entails different ways of lending support to a decision by making its underlying grounds clearer and more solid. Our informants emphasized that, especially for strategic decisions related to new business venues, one can never be sure of what conclusions to draw based on the available data. This is because it often provides an insufficient or one-sided picture of the decision situation. Accordingly, more nuanced information about customers, partners, orders, production costs, stock levels, and so on is needed. The first micro-level action derived from our analysis was that marketing managers strive to *substantiate* the grounds for a decision with as many facts as possible. These include data about customers and the market that is housed in internal

Table 4
Inventive decision-making, underpinning actions, and illustrative quotes.

Actions		Illustrative quotes
LEVERAGE	**Hatch**	*"If the market structure is not ready for our solutions, we work intensively with a variety of stakeholders to make see the benefits of changing their standards."* *Tim – PowerCo*
	Catch	*"We do all these things just because we can. We have the competence, the tools and the data."* *Neven – CardCo*
REFRAME	**Plant**	*"To progress internally, you must know how to wrap things so that they serve your own agenda."* *Kenneth – PhoneCo*
	Trig	*"When I get signals from my team and my global network on where the business is turning, I can get really pushy – Hey, what are you doing?! This is what we must do now!"* *Ulrich – IndustryCo*

Table 5
Reflexive decision-making, underpinning actions, and illustrative quotes.

Actions		Illustrative quotes
CORROBORATE	**Substantiate**	*"We had the market view, the prioritized customer segment view, the competitive view, and the test data. Plus extra research on desired functionality so we could show what the customers wanted."* Cynthia – ITCo
	Extract	*"We must classify or decide on what is the most important thing for us here and now."* Matt – SysCo
CHALLENGE	**Pressure-test**	*"One must search for discarding information and when we cannot discard something, it usually holds."* Kenneth – PhoneCo
	Rethink	*"It is fundamentally important to acknowledge one's own shortcomings. If my understanding is limited, I must be humble enough to turn to others who possess the experience and knowledge to secure a wise decision"* Claude – FurnitureCo

systems, as well as insights and experiences from colleagues. This is an approach to reduce bias, as Cynthia (ITCo) alluded: "We have data at all possible levels and almost everything we decide on is based on hard facts." Our informants also stressed the importance of *extracting* the meaning and implications of all collected data, given the decision task and situation. This action implies interpreting all information, such as market data and colleagues' opinions, uncovering its inner essence, and bolstering the conclusions and suggested measures using logical reasoning and analogies from previous experiences. Stina, who works on the marketing of new products and services at TelCo, explained that her team puts a lot of effort into understanding available data and information; and how they strive to build a sound logic for decisions to be made. "You'll never have absolute data," and therefore, arguments based on "pragmatic judgments" are needed. For example, data on customers' online behavior do not always reveal unambiguous patterns, and a deeper understanding of market dynamics may thus be needed.

Challenging refers to a skeptical aspect of reflexiveness and is about critically evaluating the assumptions, data used to make decisions, and the interpretations and conclusions drawn from these data. This implies that everything is judged in a predominantly distrustful manner. This type of behavior serves as a counterweight to corroboration, where decision-makers attempt to solidify decision grounds. Based on our analysis, we conclude that challenging may be carried out through a micro-level action we call *pressure-testing,* which exposes previous investigations and assumptions to additional data and alternative analyses. Our informants looked for contradictory data from other available sources, including social media, and made a determination if the analysis results were unchanged - even with these data and after other types of analysis. If the proposed course of action still holds true after such an assessment, the informants feel more confident in their decisions. Otherwise, they adjusted or discarded the decisions. Kenneth from PhoneCo described how they analyzed customer data they had collected and likened it to an "academic approach," where one looks for dismissive rather than supportive information. Challenging can also be realized as *rethinking.* In contrast to pressure-testing, this involves an attempt by decision-makers to reinterpret proposed courses of action based on available data and analyses. Our informants stated that for strategic issues, they usually rethink collaboratively within a management team composed of people with different skills and experiences, even involving critical colleagues to play the devil's advocate. The purpose was to obtain secondary opinions that might contradict the previous interpretations and conclusions.

5. Discussion of findings and contributions

This study aimed to investigate the nature of marketing managers'

decision-making behaviors and unravel the specific decision-making actions they engage in to handle today's volatile, complex, and data-intensive marketing environments. Based on the empirical findings presented above, we suggest that a "modern" approach to decision-making in marketing can be described as the *dynamic and purposeful optimizing of progress towards organizational goals in alignment with strategic agendas.* By this we refer to the general nature of decision-making as an expedition in which marketing managers pursue the best possible outcomes in an ongoing exploratory act over time. This is as opposed to solving specific marketing problems or tasks as discrete decisions. We understand this approach to decision-making as a direct consequence of the volatility and complexity that signify today's data-intensive decision-making scenes. The resulting uncertainties regarding appropriate courses of action and the potential consequences of different options call for a revised decision-making approach.

According to our study, DMM is characterized by agile, inventive, and reflexive behaviors realized through six groups of micro-level actions (surveilling, scanning, leveraging, reframing, corroborating, and challenging). The AIR model, shown in Fig. 1, integrates and visualizes our findings and conclusions. The visual metaphor of the triple helix illustrates the cyclical nature of the DMM and the dynamic interplay between micro-level actions and an evolving marketing environment. DMM is not agile, inventive, or reflexive. The DMM is simultaneously agile, inventive, and reflexive, and these characteristics constitute the three helices of the model. In sum, the agility of decision-making is a means of keeping up with the evolving outside world of customers and other stakeholders, which is not easily predictable. Inventiveness is about taking command of development, and proactively progressing the organization and its complex environment towards intended goals. Reflexivity holds everything together and ensures that decisions are as grounded and aligned with situational and contextual requirements as possible.

5.1. Contributions to theory

Our study offers new empirical insights into decision-making behaviors in marketing and addresses calls for research into how marketing managers make decisions (Bauer, et al., 2013; Wierenga, 2011, 2016). Unlike recent studies that have explored related phenomena (Challagalla, et al., 2014; Jabbar, et al., 2020; Tarka, 2018; Wedel & Kannan, 2016), our study adopts a managerial perspective and specifically examines the behaviors of decision-makers in evolving and dynamic modern marketing environments, where marketing practices are currently undergoing considerable transformation. Situative and naturalistic perspectives (Alby & Zucchermaglio, 2006; Brown, et al., 1989; Elsbach, et al., 2005; Greeno, 1998; Orasanu & Connolly, 1993), which have not been fully exploited in research on DMM, enabled us to discern and articulate the specific features of the AIR model. It also enabled us to craft a unique contribution to the DMM literature.

The most important contribution of the AIR model pertains to the inventive and reflexive characteristics of decision making. Extant decision-making models in marketing (Wierenga, 2011; Wierenga & van Bruggen, 1997) generally approach decision making as the solving of a marketing problem in a context that is "fixed," given the relevant set of antecedents. By contrast, the inventive dimension of our model recognizes the proactive role of marketers and views decision situations as malleable, which is also supported by the situative research tradition (Greeno, 1998). This dimension suggests that, through innovative action and effective resource and technology deployment, marketers can reframe the decision situation to make it more manageable or the environment more favorable to a desired outcome. In contrast, the reflexive dimension grounds decision making and ensures accuracy and stringency, particularly when operating under uncertainty. Our model emphasizes that it is crucial not only to critically scrutinize available data but also to consider how it relates to shared understandings, experiences, organizational goals, and strategic agendas. The "AIR
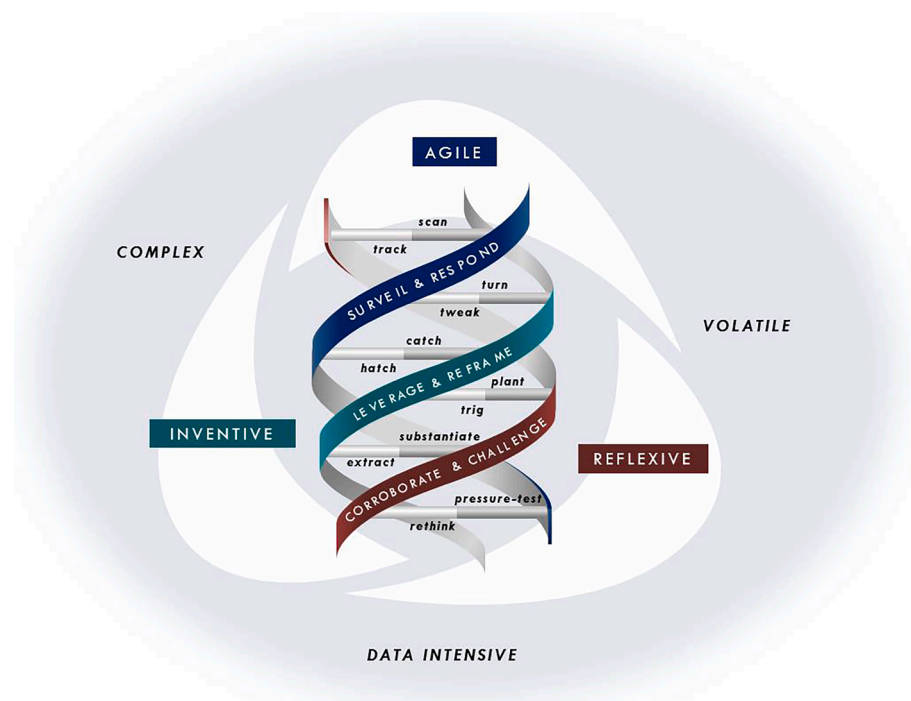
Fig. 1. AIR-model of the making of marketing decisions.

approach" to decision-making combines analytical calculations, intuition, gut feelings, experiences, and assumptions to inform the decision-making process in the presence of imperfect information.

We conclude that the AIR model significantly extends the current framework for marketing decision making. Compared with the seminal decision-making framework developed by Wierenga et al. (Wierenga, 2011; Wierenga & van Bruggen, 1997) the AIR model adds a new layer in terms of decision-making behaviors. The four problem-solving modes presented in Wierenga and van Bruggen's (1997) ORAC model are of course still valid and appear simultaneously or in different sequences when marketing managers make decisions in an agile, inventive, and reflexive manner. Furthermore, the AIR model highlights the role of organizational goals and strategic agendas as relevant antecedents and guiding premises for decision making. This aspect is emphasized in the naturalistic tradition (e.g., Orasanu & Connolly, 1993) but is largely overlooked in extant research on DMM. Above all, the AIR-model brings a dynamic, interactive, and purposeful guise to extant DMM frameworks through its agile, inventive, and reflexive characteristics.

5.2. Contributions to practice

Marketing managers are well-acquainted with the importance of being attuned to market trends and agile in their responses to shifts and changes in the business environment. It goes without saying that DMM is an ongoing strategic activity that can thrive only in close and continuous interactions with the external environment. However, our study opens new facets that we believe will noticeably benefit managerial practices. We suggest that marketing managers adopt an exploratory approach to decision-making in marketing (DMM). Instead of struggling to make the best one-shot, finite decision given a certain marketing task, DMM should be handled by making several intermediate decisions as recursive cycles of testing, learning, and revising, to step-by-step, as safely and purposefully as possible, arrive at desired outcomes. In these types of test-learn-revise feedback loops, the marketing manager and his team can avoid making incorrect, decisive, and non-recursive decisions in situations characterized by the uncertainty implied by complex and volatile environments.

We also suggest that marketing managers approach the decision-making situation as malleable rather than fixed, proactively seeking to shape it, if necessary. If elements such as problem structuredness, data availability, or organizational culture obstruct an effective DMM, they can reframe the situation through inventive action. Through inventive action, marketing managers can engage internal stakeholders to build ground for new offerings or even revisions of current strategies. They can recover ill-structured problems by mobilizing missing information and ignite movements in the market to establish themselves as thought leaders. We encourage marketing managers to strategically mobilize their available range of resources and skills.

It is also clear from our study that data-driven decision-making is not a panacea. Lately, there has been a big hype around data and being data-driven but our results suggest that marketing managers would benefit more from a "data-driving" approach. This involves open-mindedly and experimentally using digital technologies to mobilize the data required to make a certain decision to reach a certain purpose. This approach enables marketing managers to add missing information, reduce cognitive load, and ultimately make better decisions in the long run that align with organizational strategic goals and agendas.

Our research demonstrates the importance of reflexive decision-making behaviors. Marketing managers must safeguard their decisions as thoroughly as possible, when everything is in flux. They need valid data of different types - hard, soft, solicited, unsolicited, owned, and in the possession of third parties. These data should be juxtaposed with the experiences and feelings of marketing managers and others. Over-reliance on hard data while ignoring human insights may turn marketing into reactive, mechanistic, and standardized work operations. Furthermore, we emphasize the importance of inviting alternative perspectives, searching for discarding information, and mobilizing and integrating different types of information in meaningful ways. In summary, we suggest that marketing managers adopt not only a dual-process approach (Wierenga, 2011) but also a plural perspectives approach. In addition to combining mathematical analyses with intuition and gutfeel, we found that marketing managers strongly benefit from building a marketing dream team comprising an effective set of skills and capabilities. These can include technicians, analytics specialists, marketing specialists, and behavioral social scientists. Marketing managers should construct a resource network of insights consisting of people

representing other industries and surrounding areas around him or her.

Finally, we highlight the importance of considering organizational strategic goals and agendas as guiding references in the decision-making process for marketing managers. This is particularly so in situations where they must act rapidly or on shaky grounds. These goals and agendas serve as beacons to steer marketing managers through challenging decision-making scenarios.

5.3. Limitations and future research

Our research provides valuable new insights, but is not free from limitations. First, it relies on marketing managers' ability to accurately and honestly recapture both past and ongoing decision-making processes. As we studied decision-making retrospectively, our findings should be corroborated using longitudinal process methods. Furthermore, action and/or ethnographic research methods could be employed. Using such methods, the naturalistic process of DMM can be studied longitudinally in real time, with our findings as a starting point. The so-called insider/outsider research teams (Bartunek & Louis, 1996), where the insiders' deep understanding and direct and personal access constitute key resources, would be a commendable option in this respect. "Think-aloud protocols" and other techniques described by Merluzzi et al. (1981) to study individuals' decision-making in natural settings also constitute valuable research tools. More depth and further nuances could be added to the inventive and reflexive characteristics of decision-making in modern marketing environments, which, based on our study, are unexplored but important features of decision-making.

Second, our study captured only marketing managers' interpretations and experiences. DMM is, in many respects, a collective endeavor in which decisions result from teamwork. There are also situations in which a decision is beyond the authority of a marketing manager because of its strategic magnitude. The inclusion of the views and experiences of other members in the team or organization at large might have added alternative findings. Hence, to obtain a wider outlook on DMM, future research could be expanded vertically (top management and the board) and horizontally (marketing teams and other stakeholders in the organization).

Third, although modern marketing technology plays a natural role in the empirical context of our study, it has not been the primary focus. A promising research avenue is to focus on different technological tools and platforms. It can include investigating how marketing decision-makers use these for various purposes in DMM, to on one hand benefit from data intensity and, secondly, to counter the volatility and complexity of modern marketing environments. Our study only scratched the surface of the research topic.

Finally, as the intent of our research was to explore and discern the general pattern of DMM, our findings were primarily based on the depth of our analysis, rather than its breadth. As such, it would be inappropriate to make any definitive claims regarding the discernible distinctions in DMM between various industries and managerial personas and their respective decision-making styles. A logical progression of this study would be conducting a comparative examination of DMM in industries that vary in terms of clock speed, maturity, and customer engagement.

CRediT authorship contribution statement

Fredrik Nordin: Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization, Writing - original draft, Writing - review & editing. **Annika Ravald:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jbusres.2023.113872.

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Fredrik Nordin is Professor of Business Administration at Stockholm Business School, Stockholm University (Sweden). His research interests lie primarily in business-to-business marketing in industrial and high-tech firms, focusing on how providers of technology products and services can help customers create value. He has previously published in, e. g., Industrial Marketing Management, Journal of Business Research, Journal of Business-to-Business Marketing, and Journal of Service Management.

Annika Ravald is Associate Professor in Marketing at Hanken School of Economics (Finland). Dr. Ravald's research has a strategic and managerial focus and covers topics such as market shaping and ecosystem strategy in emerging business fields, business model transformation, value creation system logics, user experience management, managerial decision making in VUCA-environments, and the role of marketing in organizations. Her publications can be found in Industrial Marketing Management, Journal of Business Research, Journal of Interactive Marketing, Journal of Service Research, Journal of Service Management, Journal of Services Marketing, and European Journal of Marketing.