

Marketing Automation and Decision Making: The Role of Heuristics and AI in Marketing

by Simone Guercini

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The pervasive use of artificial intelligence (AI) is revolutionizing all aspects of business, echoing past transformative periods in management history, such as the shift from the industrial revolution to the knowledge economy. Much like the rise of assembly lines in the early 20th century that redefined production and efficiency, AI is now reshaping marketing – one of the most affected areas – due to its reliance on vast amounts of customer data (Guercini, 2020, 2022). As Henry Ford’s assembly line allowed for unprecedented scale and speed, AI’s ability to analyze massive data sets and provide real-time insights enables marketers to optimize campaigns, refine customer segmentation, enhance predictive analytics and personalize communication (Davenport *et al.*, 2020; Muldoon, 2020; Huang and Rust, 2021; Magni *et al.*, 2024). This mirrors earlier management revolutions, where new technologies and methods transformed traditional practices, allowing for more precision and agility in decision-making (Jain *et al.*, 2024; Scuotto *et al.*, 2024).

However, while AI-backed tools are revolutionizing marketing with innovative solutions, it is crucial to remember that decision-making should – and ideally will – remain with humans whose cognitive limitations often lead them to make suboptimal choices (Simon, 1957; Cristofaro, 2017). In this context, marketers frequently turn to heuristics (i.e. mental shortcuts based on experience that often provide efficient ways to find answers; Gigerenzer and Gaissmaier, 2011) to simplify complex decision-making processes, especially in today’s dynamic and uncertain business landscape (Guercini and Freeman, 2023). Indeed, although heuristics may lack the computational power of AI algorithms, they provide speed, flexibility and essential human insight. Hence, humans and machines must work together, with AI handling more analytical tasks while human skills like intuition and empathy become more valuable, ultimately requiring human judgment to guide AI’s application and enhance its effectiveness (Campbell *et al.*, 2020).

Simone Guercini’s *Marketing Automation and Decision Making: The Role of Heuristics and AI in Marketing* addresses the complex challenges marketers face in balancing AI’s data-driven precision with the irreplaceable value of human intuition (Eriksson *et al.*, 2020; Huang and Rust, 2022). Guercini crafts a comprehensive framework that emphasizes AI’s transformative potential and reaffirms marketers’ importance in guiding strategic choices by bridging the gap between algorithmic decision-making and human judgment. Rather than



viewing AI as a replacement for human insight, the book positions it as a powerful complement – an evolution in marketing tools that enhances, rather than diminishes, the marketer’s role. This approach underscores the continued relevance of human intuition in areas where creativity, empathy and contextual understanding are essential, ensuring that marketers remain indispensable as technology advances.

To explore this interplay, Guercini opens the book by outlining key themes such as the rise of marketing automation, the integration of AI into decision-making, and the role of heuristics. Central to the book’s thesis is the argument that heuristics remain vital, especially as marketers integrate new technological tools. Guercini, drawing on the work of [Gigerenzer \(2022\)](#), emphasizes that greater awareness and legitimacy of heuristics are essential in this new context. Consequently, AI should be seen as a tool that enhances intuitive decision-making, which is necessary for effective marketing strategies, by complementing heuristic thinking and bolstering human intuition rather than replacing it. This sets the tone for the book’s broader exploration of how marketers can effectively blend AI with human insight in their decision-making.

Building on this, Guercini, in Chapter 2, explores the theoretical basis of heuristics, highlighting their efficiency in reaching conclusions compared to traditional, slower, systematic approaches ([Gigerenzer and Brighton, 2009](#)). Guercini challenges the notion that marketing should rely solely on analytical methods by legitimizing heuristics, emphasizing the continued relevance of intuitive decision-making in an automated age. He references the “fast and frugal heuristics” approach ([Gigerenzer and Todd, 2012](#)), suggesting that AI can empower marketers to leverage data insights while still relying on their instincts and experiences. Guercini addresses the practical implications of applying heuristics in marketing by presenting a comprehensive framework that focuses on two key dimensions. On the one hand, he examines consumer heuristics from the perspective of marketers as “choice architects,” emphasizing how they can strategically design decision environments to influence consumer behavior. On the other hand, he analyzes the role of heuristics in marketers’ own decision-making processes, highlighting how they employ cognitive shortcuts to enhance decision efficiency in complex or uncertain conditions.

Linked to this, in Chapter 3, Guercini analyzes the role of heuristics in consumer decision-making, highlighting how these cognitive strategies help consumers navigate complex choices. Also, in this context, the author stems from the dual-system theory ([Kahneman, 2011](#)) to illustrate that consumers often rely on heuristics when they lack the time or cognitive resources to process information thoroughly. In this regard, Guercini argues that heuristics (e.g. brand name heuristic and the “more is better” heuristic; [Gunasti and Ross, 2010](#); [Homer and Mukherjee, 2018](#)) become particularly important, serving as effective decision-making aids for consumers faced with overwhelming options in a digitally-driven market. This reliance on heuristics is especially pronounced among different consumer types. For instance, hedonistic consumers focus on sensory and emotional cues, while utilitarian consumers use more analytical processing ([Garner, 2022](#)). Consequently, Guercini emphasizes recognizing these distinctions, allowing marketers to customize their strategies to align with the heuristics that shape consumer choices. He further highlights that understanding consumer heuristics is crucial for effective marketing strategies and ethical considerations. Indeed, while leveraging heuristics can positively influence consumer decisions, there is a risk of manipulation if marketers exploit these mental shortcuts without transparency ([Johnson et al., 2012](#)).

In Chapter 4, Guercini turns the lens back onto marketers, providing a practical framework – an *adaptive toolbox* – of heuristics that marketers can use to navigate the complexity of modern marketing environments. This dynamic toolbox allows marketers to

select and adapt heuristics [1] based on varying circumstances and strategic goals. Context plays a crucial role, as marketers must consider consumer behavior, competitive dynamics and technological advancements, since the effectiveness of heuristics varies across different situations. Guercini highlights the toolbox's practical implications in new product development and innovation screening, where marketers can efficiently evaluate user-generated ideas by filtering them based on complexity and community feedback, thereby alleviating cognitive overload and streamlining decision-making. He also stresses the need for continuous evaluation and refinement of heuristic strategies, urging marketers to regularly adapt their frameworks to remain responsive to changing market conditions. This iterative process ensures that the toolbox remains relevant and practical, enabling proactive adaptation to change – in line with other approaches to decision-making in business settings.

Interestingly, in Chapter 5, Guercini takes a historical approach to examine the evolution of marketing automation and artificial intelligence, detailing their impact on marketing practices. He traces the evolution from simple rule-based systems (e.g. email campaigns and customer segmentation) to AI-backed solutions, which enable dynamic, personalized marketing strategies and real-time campaign optimization (Wood, 2015). However, while machines excel at processing complex data to enhance customer profiling, targeting and engagement as they can learn and improve through continuous data analysis (Bucklin *et al.*, 2002; Hirt and Willmott, 2014), Guercini underscores the indispensable role of human decision-makers, particularly in scenarios where data may be incomplete or ambiguous. Indeed, marketers' oversight is not merely beneficial but essential for the monitoring of outcomes and the execution of strategic interventions (Guercini, 2020). Consequently, Guercini emphasizes that while artificial intelligence substantially transforms marketing decision-making processes, human judgment may evolve, yet it will remain fundamentally essential. Based on this, he stresses that the advent of automation will not eliminate the necessity for heuristics; instead, it will create new opportunities for their application, predicting a future of greater integration between AI and human decision-making (see Figure 5.3 on page 107 of the book).

Stemming from this, in the following chapter, Guercini emphasizes AI's transformative role in marketing decision-making by enabling faster, more accurate insights into consumer behavior through machine learning algorithms that analyze large data sets, predict trends and optimize strategies. AI's real-time data processing helps marketers swiftly adapt to changing behaviors, particularly in programmatic advertising and data-driven customer segmentation (Puntoni *et al.*, 2021). However, while examining the effectiveness of supervised and unsupervised learning models in enhancing decision-making speed and accuracy, he also cautions against over-reliance on AI due to risks like overfitting, where models become overly specialized to past data. To address this concern, Guercini draws on Gigerenzer and Todd (1999) to advocate for a balanced approach that complements AI's complex models with simpler heuristics, ensuring incredible speed and transparency. Furthermore, he discusses how AI revolutionizes customer classification by automating segmentation based on behavioral data, which leads to personalized recommendations that boost satisfaction and drive sales. In this context, he highlights the crucial role of AI-powered recommendation systems in enhancing user experience on platforms like Amazon and Netflix through collaborative and content-based filtering. He also highlights the need for continuous updates to ensure recommendations remain relevant to evolving consumer preferences (Giardino, 2024). Despite ethical concerns about privacy and bias, Guercini concludes that AI-driven programmatic advertising is invaluable for marketers, offering unmatched precision and efficiency in ad placement to effectively reach target audiences with tailored messaging,

fundamentally changing how brands engage with consumers in a complex, data-driven landscape.

In Chapter 7, Guercini bridges theory and practice by presenting case studies and real-world examples of how marketers navigate the integration of AI and heuristics in their daily tasks. He draws on qualitative research conducted through interviews with entrepreneurs and managers, examining their experiences and perspectives on marketing automation. These interviews reveal a duality in sentiment: while there is considerable optimism regarding the potential of AI to enhance marketing processes – particularly in areas like customer profiling and recommendation systems – marketers also express concerns about challenges such as data quality and control (Guercini, 2019). This contrast sets the stage for a deeper examination of how these sentiments shape the application of heuristics in marketing. Indeed, it becomes clear that despite the positive outlook on AI's future impact, significant issues persist, particularly regarding the necessity for robust relational networks among stakeholders to ensure effective data management. Marketers emphasize that AI systems cannot operate independently and require human oversight for optimal functioning. This underscores the importance of integrating human intuition and experience into automated processes, highlighting the role of heuristics as cognitive shortcuts that facilitate rapid decision-making, especially under conditions of uncertainty. To further illustrate this point, the author identifies three principal heuristic rules that marketers frequently employ: *multiplier heuristics*, *threshold heuristics* and *calends heuristics*. Multiplier heuristics use a coefficient to forecast outcomes, such as applying a mark-up to purchase costs for pricing strategies, enabling quick estimations essential for “transparency” (Katsikopoulos *et al.*, 2020). Transitioning from multipliers, the discussion moves to threshold heuristics, which focus on establishing predetermined limits for actions or judgments, as exemplified by a textile company that restricts exports to specific markets to a percentage of total sales, thereby managing risk and illustrating how clear guidelines can support effective marketing strategies (Guercini and Runfola, 2021). Finally, the author examines calends heuristics, which use specific dates to inform decisions, such as tracking commodity prices based on historical data from particular days, highlighting the role of timing in purchasing decisions and the adaptability of heuristics in marketing (Guercini, 2022). Thus, Chapter 7 is used by Guercini to bring the book's ideas to life by demonstrating that heuristics are vital tools for marketers in today's complex business environment, at the same time highlighting the necessity of integrating them with AI-driven marketing automation to improve decision-making and effectively address contemporary challenges.

Guercini synthesizes the book's central arguments in the concluding chapter, focusing on the future of marketing automation and decision-making. He reiterates that the rise of marketing automation, primarily through advanced AI tools, necessitates a renewed focus on heuristics in marketing decisions (Simon and Newell, 1965; Kahneman, 2011). While recognizing the benefits of automation, he warns that reliance on data-driven decisions may diminish the role of human marketers (Davenport *et al.*, 2020), highlighting the need for their active engagement. The chapter addresses the limitations of automated systems, which, despite their advantages, can lead to errors and unintended consequences, raising concerns about transparency and control. In this context, heuristics act as a counterbalance, simplifying complex decision-making processes (Gigerenzer and Todd, 1999). By leveraging heuristics, marketers can integrate qualitative insights with quantitative data, enhancing their decision-making capabilities. Guercini contrasts human intelligence with AI, cautioning against the assumption that automation is inherently superior. He advocates for integrating human judgment with automated efficiency (Davenport and Ronanki, 2018), recognizing the unique strengths of each. Ethical considerations are also paramount,

focusing on addressing biases in AI algorithms to maintain consumer trust and promote sustainable practices. The chapter posits that the future of marketing will hinge on combining automated systems with heuristic-driven decision-making. This synergy can enhance strategic planning while preserving the essential human touch in navigating complex marketing landscapes. In closing, Guercini calls for further research into effectively applying different heuristic models in automated environments and exploring their potential advantages over more complex decision-making frameworks (Huang and Rust, 2021).

Therefore, why is this a must-read book? “Marketing Automation and Decision Making: The Role of Heuristics and AI in Marketing” is a compelling exploration of how modern marketing practices are being shaped by artificial intelligence and the critical role marketers’ heuristics continue to play. As Henry Ford’s assembly line redefined industrial production, bringing unparalleled efficiency and scale, AI is now transforming marketing by unlocking the power of vast data sets (Davenport *et al.*, 2020; Muldoon, 2020; Huang and Rust, 2021; Magni *et al.*, 2024). This technological shift is reminiscent of previous revolutions that forever altered the decision-making landscape. In much the same way that managers once relied on emerging management science principles to guide factory workflows, today’s marketers are turning to AI to optimize customer segmentation, predictive analytics and communication strategies (Guercini, 2020; Jain *et al.*, 2024; Scuotto *et al.*, 2024). Yet, as in past transformations, human insight remains vital. Guercini’s book offers a glimpse into the future of marketing and a reflection on the natural progression of innovation throughout history. It emphasizes that while AI brings unprecedented precision and speed, human intuition – grounded in heuristic decision-making – still plays an essential role, much as it did when early business pioneers blended new technologies with experienced judgment (Guercini, 2019, 2022). This thoughtful balance between automation and human reasoning makes this book a must-read for scholars and practitioners.

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Note

- [1.] Drawing on research by Hutchinson *et al.* (2010), Guercini discusses three specific types of heuristics that marketers use in decision-making. *Difference-based heuristics* involve comparing specific attributes or outcomes of options, enabling marketers to make quicker decisions based on observable characteristics. *Trend-based heuristics* focus on identifying patterns in data over time, helping marketers anticipate market behavior and consumer preferences to guide timely actions. *Exemplar-based heuristics* draw on past successful products or campaigns as models for new initiatives, allowing marketers to leverage historical success for informed decision-making.

References

- Bucklin, R.E., Lattin, J.M., Ansari, A., Gupta, S., Bell, D., Coupey, E., Little, J.D., Mela, C., Montgomery, A. and Steckel, J. (2002), “Choice and the internet: from clickstream to research stream”, *Marketing Letters*, Vol. 13 No. 3, pp. 245-258.
- Campbell, C., Sands, S., Ferraro, C., Tsao, H.Y.J. and Mavrommatis, A. (2020), “From data to action: how marketers can leverage AI”, *Business Horizons*, Vol. 63 No. 2, pp. 227-243.
- Cristofaro, M. (2017), “Herbert Simon’s bounded rationality: its historical evolution in management and cross-fertilizing contribution”, *Journal of Management History*, Vol. 23 No. 2, pp. 170-190.

- Davenport, T.H. and Ronanki, R. (2018), "Artificial intelligence for the real world", *Harvard Business Review*, Vol. 96 No. 1, pp. 108-116.
- Davenport, T., Guha, A., Grewal, D. and Bressgott, T. (2020), "How artificial intelligence will change the future of marketing", *Journal of the Academy of Marketing Science*, Vol. 48 No. 1, pp. 24-42.
- Eriksson, T., Bigi, A. and Bonera, M. (2020), "Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation", *The TQM Journal*, Vol. 32 No. 4, pp. 795-814.
- Garner, B. (2022), "An ethnographic analysis of consumer information processing and decision-making at farmers' markets", *Journal of Consumer Marketing*, Vol. 39 No. 1, pp. 66-77.
- Giardino, P.L. (2024), "Oltre l'ordinario: alla scoperta delle startup unicorno", in Cucari N. and Franzese M. (Eds), *Essere Startupper. Il Primo Manuale Diffuso Sulle Startup*, McGraw-Hill Education, pp. 282-291.
- Gigerenzer, G. (2022), *How to Stay Smart in an Imaginative World: Why Human Intelligence Still Beats Algorithms*, Penguin, London, UK.
- Gigerenzer, G. and Brighton, H. (2009), "Homo heuristicus: why biased minds make better inferences", *Topics in Cognitive Science*, Vol. 1 No. 1, pp. 107-143.
- Gigerenzer, G. and Gaissmaier, W. (2011), "Heuristic decision making", *Annual Review of Psychology*, Vol. 62 No. 1, pp. 451-482.
- Gigerenzer, G. and Todd, P.M. (1999), *Simple Heuristics That Make Us Smart*, Oxford University Press, New York, NY City, USA.
- Guercini, S. (2019), "Heuristics as tales from the field: the problem of scope", *Mind and Society*, Vol. 18 No. 2, pp. 191-205.
- Guercini, S. (2020), "The actor or the machine? The strategic marketing decision-maker facing digitalization", *Micro and Macro Marketing*, Vol. 29 No. 1, pp. 3-7.
- Guercini, S. (2022), "Scope of heuristics and digitalization: the case of marketing automation", *Mind and Society*, Vol. 21 No. 2, pp. 151-164.
- Guercini, S. and Freeman, S.M. (2023), "How international marketers make decisions: exploring approaches to learning and using heuristics", *International Marketing Review*, Vol. 40 No. 3, pp. 429-451.
- Guercini, S. and Runfola, A. (2021), "Heuristics in decision-making by exporting textiles SMEs", *Journal of Global Fashion Marketing*, Vol. 12 No. 1, pp. 1-15.
- Gunasti, K. and Ross, W.T. (2010), "How and when alphanumeric brand names affect consumer preferences", *Journal of Marketing Research*, Vol. 47 No. 6, pp. 1177-1192.
- Hirt, M. and Willmott, P. (2014), "Strategic principles for competing in the digital age", *McKinsey Quarterly*, Vol. 5 No. 1, pp. 1-13.
- Homer, P.M. and Mukherjee, S. (2018), "The impact of dietary supplement form and dosage on perceived efficacy", *Journal of Consumer Marketing*, Vol. 35 No. 2, pp. 228-238.
- Huang, M.H. and Rust, R.T. (2021), "A strategic framework for artificial intelligence in marketing", *Journal of the Academy of Marketing Science*, Vol. 49 No. 1, pp. 30-50.
- Huang, M.H. and Rust, R.T. (2022), "A framework for collaborative artificial intelligence in marketing", *Journal of Retailing*, Vol. 98 No. 2, pp. 209-223.
- Hutchinson, J.W., Alba, J.W. and Eisenstein, E.M. (2010), "Heuristics and biases in data-based decision making: effects of experience, training, and graphical data displays", *Journal of Marketing Research*, Vol. 47 No. 4, pp. 627-642.
- Jain, N., Gupta, V., Temperini, V., Meissner, D. and D'angelo, E. (2024), "Human machine interactions: from past to future-a systematic literature review", *Journal of Management History*, Vol. 30 No. 2, pp. 263-302.

- Johnson, E.J., Shu, S.B., Dellaert, B.G., Fox, C., Goldstein, D.G., Häubl, G., Larrick, R.P., Payne, J.W., Peters, E., Schkade, D. and Wansink, B. (2012), "Beyond nudges: tools of a choice architecture", *Marketing Letters*, Vol. 23 No. 2, pp. 487-504.
- Kahneman, D. (2011), *Thinking, Fast and Slow*, Penguin, London, UK.
- Katsikopoulos, K.V., Şimşek, O., Buckmann, M. and Gigerenzer, G. (2020), *Classification in the Wild. The Science and Art of Transparent Decision Making*, MIT Press, Cambridge, USA.
- Magni, D., Del Gaudio, G., Papa, A. and Della Corte, V. (2024), "Digital humanism and artificial intelligence: the role of emotions beyond the human-machine interaction in society 5.0", *Journal of Management History*, Vol. 30 No. 2, pp. 195-218.
- Muldoon, J. (2020), "Henry ford and his legacy: an American Prometheus", in Bowden, B., Muldoon, J., Gould, A.M. and McMurray, A.J. (Eds), *The Palgrave Handbook of Management History*, Palgrave Macmillan, Cham, pp. 521-544.
- Puntoni, S., Reczek, R.W., Giesler, M. and Botti, S. (2021), "Consumers and artificial intelligence: an experiential perspective", *Journal of Marketing*, Vol. 85 No. 1, pp. 131-151.
- Scuotto, V., Del Giudice, M., Malhotra, A. and Pereira, V. (2024), "The evolution of human-machine interaction, from Taylorism to human-centered approach", *Journal of Management History*, Vol. 30 No. 2, pp. 141-146.
- Simon, H.A. (1957), *Administrative Behavior*, Free Press, New York, NY City, USA.
- Simon, H.A. and Newell, A. (1965), *Heuristic Problem Solving by Computer*, Carnegie Institute of Technology, Pittsburgh, USA.
- Wood, C. (2015), "Marketing automation: lessons learnt so far...", *Journal of Direct, Data and Digital Marketing Practice*, Vol. 16 No. 4, pp. 251-254.

Further reading

- Kaplan, A. and Haenlein, M. (2019), "Siri, Siri, in my hand: who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence", *Business Horizons*, Vol. 62 No. 1, pp. 15-25.
- Paschen, J., Wilson, M. and Ferreira, J.J. (2020), "Collaborative intelligence: how human and artificial intelligence create value along the B2B sales funnel", *Business Horizons*, Vol. 63 No. 3, pp. 403-414.