Design Science and Marketing: A Perfect Couple

> *'Design is art optimized to meet objectives'.*
> Shimon Shmueli (2008)

Compared to sciences like mathematics, medicine or theology, business science and marketing are rather new fields, and their development and importance is connected with the industrial revolution of the later nineteenth century.

Some argue that a goal of these scientific disciplines is to provide those acting in the social and economic context—for example, policy makers, shareholders, managers, customers, suppliers—with normative, strategic and operational recommendations, based on evidence (Nutley & Davies, 2002) on how decisions should be made in specific contexts (e.g., business-to-consumer, business-to-business, services) in order to achieve broader economic, monetary and/or social goals. Therefore, adherents of this view categorize business science and marketing as applied sciences, ideally contributing to economic and social prosperity, and strongly associated with practical application. Hence, science and practice in the fields must be linked (Bartunek & Rynes, 2014). The question of how research within the marketing discipline relates to practise is an important one and has been discussed for years (Kauppinen-Räisänen & Grönroos, 2015; Lilien, 2011; Roberts et al., 2014). As one stream of this discussion, voices have been raised in the past pointing to the danger of decoupling marketing science from practice. The voices have grown louder in recent years (Alpert et al., 2021). In particular, the impact of research results published in scientific journals on managers is being discussed and questioned more and more (Redler & Schmidt, 2022). Many authors conclude that the contribution of marketing research to practice is small, and that a shift towards more relevant research is urgently needed (Stange et al., 2022).

One promising way to reconcile marketing science and marketing practice may be to view marketing and its sub-disciplines as *an art and a science* (cf. Donzé & Meier, 2012; Ignatius, 2013). Different from rationalist scientific angles, an important emphasis of the *art* of marketing is on how to create value. It is for a reason that the *Journal of Creating Value* (Sage, 2023) explicitly deals with both the science and the art of creating value. In the case of creating value, the art has a clear objective, namely, to create value for customers, users, employees, shareholders, other stakeholders and society as a whole. As we can learn from the epigraph above, if art is optimized to meet objectives, we are actually speaking about design. Design is a knowledge branch on its own right; Nobel-prize laureate Herbert Simon called it a 'science of the artificial'. While traditional science

creates understanding about the current world, design science is about shaping a future world. The difference between traditional science and design science translates into different kinds of research questions (Henseler & Guerreiro, 2020): Traditional science would ask 'How do organizations and individuals create value?' Design science would ask 'How can organizations and individuals create value?' The questions differ in only one single word, but the altered word conveys an important notion: traditional science is limited to the study of those value creation strategies and tactics that already exist—only these can be observed in the real world. Design science, in contrast, allows imagination and uses creativity to come up with novel ways of creating value. Obviously, the creation of value can largely benefit from the latter.

Simply put, Design Science is 'a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity' (Brown, 2008, 86). Design science uses the designer's toolkit (Lewrick et al., 2020) to extend the behaviouristic paradigm of description, explanation and prediction with the objective to create 'knowledge that can be used in designing solutions to field problems' (Van Aken, 2005, 22). This knowledge should lead to the provision of grounded technological rules and tested design propositions for a solution (Van Aken, 2005). In other words, design science's overall objective is to create value which usually happens 'in the context of the indeterminacy of wicked problems' (Buchanan, 1992, 18). But while other disciplines within the field of business sciences, such as information systems (Hevner et al., 2004) or operations management (Van Aken et al., 2016), are already embracing design science, marketing and value creation have largely neglect the approach (Halstrick et al., 2020) so far.

Why is it so difficult for marketing science to become more like design science and thus benefit from its opportunities to become more relevant to practice (van Aken, 2005)? At first glance, this may seem surprising, given marketing's strong track record of incorporating theories and methods from other disciplines. At a second glance, it becomes clear that the difference between (a) the dominating modes of doing research in marketing, which are mostly based on a logical empiricist view, and (b) design science goes much deeper, namely, to the beliefs and values of the researchers involved. In other words, the change in focus from traditional marketing science to design science approached in marketing might be compared to a shift of a scientific paradigm (Kuhn, 2012). Paradigm shifts, however, are not done light-heartedly and are also a sociological phenomenon of scientific communities. They are essentially the result of changes in, for example, research questions, concepts, values, models, and methods that occur because of a change in the agreed-upon understanding of how to view the world of science within a particular discipline. Referring to marketing, we find a rather one-sided paradigmatic situation. For example, Schmidt and Redler (2018) argue that within brand management research, brand researchers seem to be caught in the inherent paradigmatic reality so that researchers from one so-called brand management school hardly integrate approaches and issues from other schools.

Still, marketing science is dominated by the logical empiricist paradigm (e.g., Arndt, 1985). As a consequence, attention is drawn to some phenomena while others seem neglected. The situation might be a reason why marginal progress has been made during the last decades, and trivial findings account for a majority of studies published in marketing journals. Logical empiricism is part of a functionalist paradigm that is grounded in an ontology that assumes an existing world that can be objectively measured, a human nature perspective that considers humans to be objects rather than subjects in the world, an epistemology of knowledge to be traceable and sharable, and methods that focus on the analysis of relationships and patterns between elements of an externally given world (e.g., Burrell & Morgan, 1979). Steps towards an emancipation from the dominant paradigm might be made by explicitly reflecting the paradigms used, by understanding their limiting nature, and by making paradigms a research subject themselves. Alternative paradigms deserve more attention in the current research 'game' to unleash their potential to challenge the currently leading paradigm. The cluster of design science approaches might be considered one alternative to the imprisoning 'normal science' (Kuhn, 2012) of logical empiricism today.

This special issue of the *Journal on Creating Value* about 'Creating Value through Design Science' and the articles therein aim at showcasing how design science research in the field of creating value can look like. Five submissions made it to the stage of publication:

The article by Carsten Baumgarth, Dirk-Mario Boltz and Cosima Kaibel entitled 'Creating value for brand practice by design research – "New Brand Sprint" as an illustrative example for the "third" option' presents design research as third way of scientific inquiry, next to qualitative and quantitative research. The article highlights a catalogue made up of four criteria of design research that can help producers of design research, that is, researchers, plan, conduct and publish design research, and enable evaluators, gatekeepers and consumers of design research, that is, reviewers, editors and readers, to assess and understand design research studies. The criteria are (a) Real user needs, (b) Trial-and-error process, (c) Artefact and (d) Pragmatic validity. The criteria are associated with the stages of Inspiration, Ideation/Iteration and Implementation, as outlined in IDEO's classical concept of design thinking (Brown, 2008). To demonstrate how the catalogue is put into action, a case study featuring a design research project in the realm of brand positioning is presented. Addressing the user challenge of time-consuming traditional brand positioning processes (inspiration), the 'New Brand Sprint' was formulated and refined through four testing cycles (ideation & iteration). Utilizing the tools 'New Brand Sprint Canvas' and 'New Brand Sprint Playbook' (artefacts), the 'New Brand Sprint' functions as a practical and agile three-hour tool for brand positioning (implementation).

The article written by Fabian A. Geise entitled 'Customers' Motives to Engage in Social Media Based Product Idea Contests - Empirical Evidence from Germany' presents an empirical motive study based on the design science approach. The aim of the study is to develop specific problem-solving knowledge in the form of artefacts that can be directly applied in marketing practice. The problem-solving knowledge relates to consumers' motives for participating in product idea

competitions (PICs) in the fast-moving consumer goods sector. The research phases underlying the motive study are guided by a five-phase design science research process. As a result of this research process, two artefacts are developed: a multi-item motive scale and a factor analytic motive model. The motive model includes six participation motives: three intrinsic (enjoyment with creative tasks, altruism, search for new/better product solutions) and three extrinsic motives (material-financial reward, identification with the user community, positive feedback from participants/company). Finally, the motive model enables the derivation of recommendations for action for the PIC management.

Benedikt Halstrick, in his article entitled 'Balancing the use of behavioral research and design science research to solve the relevance problem in marketing research', argues that contemporary marketing research has a value problem. Claims for the managerial impact of research appear in practically every research article. Nevertheless, managers in the field do not consider scientific outputs as relevant in helping them to address the multiple challenges that organizations face. Marketing typically conducts behavioural research, aiming to understand and explain real-world problems. Other disciplines, such as engineering, focus primarily on building solutions to solve practical problems. Such practice is often termed design science. This article proposes that marketing should focus more on building solutions, hence calls for a better balance between behavioural and design research. An improved balance between these two paradigms in marketing should increase the value of academic research to practice. Four typical case studies are presented to illustrate key differences between design science and behavioural science.

Taşkın Dirsehan and Cansu Tor Kadıoğlu focus on Customer-Perceived Value (CPV) and argue, recognizing the multifaceted nature of CPV and its dependency on specific contexts, that CPV should be treated as an emergent artefact. Their article 'Operationalizing customer-perceived value as an emergent variable: Empirical evidence from mobile food and delivery applications' questions traditional views modelling CPV as a reflective construct. In doing so, the authors provide an alternative means of conceptualizing and designing CPV and accounting for its multiple determinants across sectors. Using data from an online survey of users of mobile food and delivery applications (MFODAs), they demonstrate the application and utility of this methodological shift, using partial least squares path modelling (PLS-PM) to validate their approach.

Finally, the article titled 'Enhancing Industrial Service Value through Data: Enhancing Value Generation by Modifying Operational Resources', written by Jürg Meierhofer, delves into a quantitative framework aimed at generating value through data-driven approaches. This framework presents a comprehensive strategy for designing efficient data-driven service setups across the customer journey. It takes into account the interests of both service providers and customers, pinpointing the optimal solution on the Pareto front. The key attribute of this model, which serves as a tool for refining services during an iterative design process, lies in its diverse inputs. These inputs capture the costs and advantages from the perspectives of providers and customers, corresponding to the varying levels of data incorporation across different stages of the service lifespan. The study

demonstrates that achieving optimization necessitates more than just maximizing data integration intensity for individual services. Instead, the true optimization emerges from a targeted restructuring of operational resources throughout the service lifecycle. This innovative approach allows for holistic enhancement through a design-oriented, iterative methodology, setting it apart from conventional models that predominantly focus on escalating levels of digitization intensity and maturity.

As guest editors for this issue, we are convinced that all five articles will make a significant contribution to inspiring design science perspectives in marketing and beyond in the creation of value. We would like to thank the editor-in-chief, Gautam Mahajan, for granting us the opportunity to edit this special issue, and Neha Bahuguna from Sage, who helped us to overcome all organizational and technical issues we faced. Obviously, the special issue would not have been possible without the great contributions of all authors involved. Our gratitude also goes to those scholars who have served as reviewers in this special issue, particularly Bilal Ahmed Abbasi, Sunil K. Dixit, Michael Udo Ehret, Gavin Fox, Lars Gottschling-Knudsen, Manuela Guerreiro, Andreas Hesse, Mudassir Husnain, Karsten Kilian, Elmar D. Konrad, Kosuke Mizukoshi, Angeline Nariswari, Naman Nigam, Irit Nitzan, Herbert Paul, Emad Rahmanian, Adam Ramshaw, Philipp Rauschnabel, Kunio Shirahada, Abul Kalam Siddike, Raphael Stange, Pieter Steenkamp, Bharat Wakhlu and Melissa Zulu, who did a great job identifying rigorous and relevant research and helped to develop the content of the submitted manuscripts. We would also like to thank all authors whose submissions could not be considered for various reasons and wish them every success in future research projects in the field of Design Science and beyond.

References

Alpert, F., Brown, M., Ferrier, L., Gonzalez-Arcos, C., & Piehler, R. (2021). Branding's academic-practitioner gap: Managers' views. *Journal of Product & Brand Management*, *31*(2), 218–237.

Arndt, J. (1985). On making marketing science more scientific: Role of orientations, paradigms, metaphors, and puzzle solving. *Journal of Marketing*, *49*(3), 11–23.

Bartunek, J. M., & Rynes, S. L. (2014). Academics and practitioners are alike and unlike: The paradoxes of academic–practitioner relationships. *Journal of Management*, *40*(5), 1181–1201.

Brown, T. (2008). Design thinking. *Harvard Business Review*, *86*(6), 84–92.

Buchanan, R. (1992). Wicked problems in design thinking. *Design Issues*, *8*(2), 5–21.

Burrell, G., & Morgan, G. (1979). *Sociological paradigms and organisational analysis: Elements of the sociology of corporate life*. Routledge.

Donzé, L., & Meier, A. (2012). Applying fuzzy logic and fuzzy methods to marketing. In *Fuzzy methods for customer relationship management and marketing: Applications and classifications* (pp. 1–14). IGI Global.

Halstrick, B., Schmidt, H. J., & Henseler, J. (2020). The use of design thinking within the brand management discipline: A literature review. In: H. Schmidt & C. Baumgarth (Eds). *Forum Markenforschung 2018* (pp. 213-228). Springer Gabler.

Henseler, J., & Guerreiro, M. (2020). Design and marketing: Intersections and challenges. *Creativity and Innovation Management*, *29*(S1), 3–10.

Hevner, A. R., March, S. T., Park, J., & Ram, S. (2004). Design science in information systems research. *MIS Quarterly*, *28*(1), 75–105.

Ignatius, A. (2013). Advertising is an art – and a science. *Harvard Business Review*, *91*(3), 10–11.

Kauppinen-Räisänen, H., & Grönroos, C. (2015). Are service marketing models really used in modern practice? *Journal of Service Management*, *26*(3), 346–371.

Kuhn, T. S. (2012). *The structure of scientific revolutions.* University of Chicago Press.

Lewrick, M., Link, P., & Leifer, L. (2020). *The design thinking toolbox: A guide to mastering the most popular and valuable innovation methods*. John Wiley & Sons.

Lilien, G. L. (2011). Bridging the academic–practitioner divide in marketing decision models. *Journal of Marketing*, *75*(4), 196–210.

Nutley, S. M., & Davies, H. T. O. (2002). *Evidence-based policy & practice: Moving from Rhetoric to reality*. (Discussion Paper 2), Research Unit for Research Utilisation, St. Andrews University.

Redler, J., & Schmidt, H. J. (2022). I know that I know nothing: Exploring the managerial relevance of recent orientations in brand management research. *Journal of Brand Management*, *29*(5), 498–511.

Roberts, J. H., Kayande, U., & Stremersch, S. (2014). From academic research to marketing practice: Some further thoughts. *International Journal of Research in Marketing*, *31*(2), 144–146.

Sage (2023). *Journal of Creating Value.* https://journals.sagepub.com/description/JCV

Schmidt, H. J., & Redler, J. (2018). How diverse is corporate brand management research? Comparing schools of corporate brand management with approaches to corporate strategy. *Journal of Product & Brand Management, 27*(2), 185–202.

Shmueli, S. (2008). *What is design?* https://www.slideshare.net/touch360/what-is-design-presentation-567388

Stange, R., Schiele, H., & Henseler, J. (2022). Advancing purchasing as a design science: Publication guidelines to shift towards more relevant purchasing research. *Journal of Purchasing and Supply Management*, *28*(1), 100750. https://doi.org/10.1016/j.pursup.2022.100750

Van Aken, J. E. (2005). Management research as a design science: Articulating the research products of mode 2 knowledge production. *British Journal of Management*, *16*(1), 19–39.

Van Aken, J. E.,Chandrasekaran, A., & Halman, J. I. M. (2016). Conducting and publishing design science research. *Journal of Operations Management*, *47*(8), 1–8.

J. Henseler, H. J. Schmidt and J. Redler
Editorial JCV Special Issue