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Balancing the Use of Behavioural Research and Design Science Research to Solve the Relevance Problem in Marketing Research

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Abstract

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 study proposes that marketing research should focus more on building solutions, hence calling 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.

Keywords

Behavioural science, design science, managerial relevance, marketing research

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Introduction

Research disciplines typically follow one of three paradigms. Formal sciences build systems that are designed to be internally, logically consistent (van Aken,

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2004). Behavioural sciences aim to explain, describe and understand the world (Hevner et al., 2004). Design sciences focus on building solutions to solve problems (Hevner et al., 2004). Social sciences are typically explanatory, behavioural sciences (van Aken, 2004) as is marketing (Henseler & Guerreiro, 2020).

Marketing strives to publish research that is both rigorous and relevant (Moorman et al., 2019). However, concerns have been raised that marketing research is often not relevant enough to those working in practice (Lehmann et al., 2011; Zeithaml et al., 2020). Research has produced many explanations for this problem. For example, journals typically seem to incentivize scholars to conduct research that is relevant primarily to other scholars (Baron et al., 2011). Therefore, the knowledge produced and the way the knowledge is disseminated are often not in line with the needs of practitioners (Baron et al., 2011; Nyilasy & Reid, 2007). Furthermore, the methods used are often too complex for marketers to understand (Lehmann et al., 2011).

Hence, academia and practice are currently two mostly separated domains (De Pelsmacker, 2020; Nyilasy & Reid, 2007). The question addressed in this study is whether and why following more of a design science approach helps marketing research increase its value to practice. Conducting more design science in marketing would imply more often focusing on building solutions both for and with marketers. Therefore, this study aims to contribute to bridging the gap between marketing academics and marketing managers.

Various solutions have been proposed to increase the utility of research outcomes for marketing managers. Nevertheless, the situation only seems to worsen (Reibstein et al., 2009). In other business disciplines, such as in Information Systems research, the use of design science is recognized for increasing relevance (Österle et al., 2011). However, the idea to use design science research seems to be largely missing in marketing's relevance discourse. Therefore, the article at hand proposes the use of design science as a novel method for marketing academics. To encourage the method's use, four case studies are presented, demonstrating its typical characteristics. The case studies can serve academic marketing researchers reflect on their use of research paradigm and ultimately increase managerial relevance. Nevertheless, behavioural research often generates crucial results, which often inform the development of new solutions (Hevner et al., 2004). Therefore, this paper argues for a better balancing of behavioural research and design science.

The consecutive, second section of this article describes marketing's relevance deficit, offers explanations of the problem and mentions some previous ideas for resolving it. The third section describes the key characteristics of the field of discussion: Behavioural science and design science. In the fourth section, four case studies are presented to illustrate the differences between two paradigms. In sections 'Discussion' and 'Conclusion', our findings are discussed, and conclusions drawn.

Managerial Relevance of Academic Research in Marketing

In many ways, marketing practice and academia seem to be two deeply connected spheres. For example, building a career in marketing practice seems to be often difficult without a PhD degree (Baron et al., 2011). The demand from marketing

managers to receive problem-solving support from academics seems to be higher than the supply, particularly in smaller firms (Baron et al., 2011). Concepts developed in academia, such as the Business Model Canvas, are widely adopted by marketing managers (Osterwalder, 2004). At the same time, marketing academia introduced dedicated conferences and special journal sections to the problems of marketing managers (Royne, 2016). Postgraduate courses on marketing practice are typically highly requested (Baron et al., 2011).

However, despite such efforts and interconnections, marketing research has a utilization problem (Lehmann et al., 2011; Zeithaml et al., 2020). Managers in marketing are often not aware of most research concepts and do not use academic contributions for job-related education (Redler & Schmidt, 2022). Literature on building an understanding of—and a solution to—this problem has existed for at least half a century (Kelly, 1987). However, some scholars argue that the state of the problem has not improved since (Reibstein et al., 2009).

Marketing researchers came up with various potential causes to the discipline's managerial relevance deficit. These potential causes are summarized in Table 1. First, the academic incentive system seems to hinder practical relevance. A researcher's success is commonly measured by the number and value of citations in academic journals, not by their value to practice (Baron et al., 2011). Consequentially, the knowledge generated and the way this knowledge is disseminated are often not in line with the needs of most marketing managers (Baron et al., 2011). Second, scholars often seem to lack a deep understanding of how marketers actually work (Jaworski, 2011). As perceptions of practitioner's roles seem to be lagging behind reality, researchers are asked to immerse

Table 1. Causes for Deficits in Managerial Relevance of Marketing Research.

Causes of Deficits in Managerial Relevance	Explanation
Academic incentive system	Rewarding academics primarily for citations diminishes incentive to publish works relevant to practitioners
Understanding of job roles	Scholars have an outdated or inaccurate understanding of roles of practitioners
Method complexity	Scholars use increasingly sophisticated methods, making it more difficult for practitioners to understand research results
Practitioner ignorance	Practitioners reject scientific research despite some relevant results
Education system	Knowledge taught is lagging behind practice. PhD education focusses heavily on methods
Stakeholder alignment	Marketing research may be targeted at various different stakeholders, such as marketing managers, public policy officials or educators

into practice (Jaworski, 2011). A third popular explanation concerns the complexity of the methods often used in marketing. Research methods in marketing are growing increasingly sophisticated and complex, making it harder for the typical practitioner to understand academic works (Lehmann et al., 2011). Fourth, practitioners may sometimes be ignorant towards research results despite their eventual relevance (Nyilasy & Reid, 2007). This ignorance may result from a general rejection of academia and a sense of anti-intellectualism amongst some practitioners (Nyilasy & Reid, 2007). Finally, marketing research is often not relevant to marketing managers because it may be aimed to address the needs of a different stakeholder group (Varadarajan, 2020). Typical stakeholders to research in marketing are marketing managers, marketing researchers, public policy officials, educators and students, such as society at large (Varadarajan, 2020).

Some scholars criticize marketing education for lacking practical usefulness. Academic education is argued to be lagging a decade behind marketing practice; marketing students leave universities ill-prepared for marketing jobs (Baron et al., 2011). Moreover, PhD education has been criticized for focusing too heavily on methodological training, often conveying insufficient understanding of marketing practice (Reibstein et al., 2009).

Academia proposed a wide spectrum of potential solutions to this problem. Collaboration with practice and changing academic incentive systems are often proposed (Reibstein et al., 2009). A recently popular idea in marketing is the theory-in-use approach, in which research aims to develop relevant theory by observing how practitioners work (Zeithaml et al., 2020). This is argued to generate results that are better aligned with the needs of practitioners (Zeithaml et al., 2020). Engagement partnerships with social impact organizations can also help to bridge the researcher-practitioner gap (Bublitz et al., 2022).

Various other business research disciplines also seem to have a deficit in practical relevance. Researchers from brand management seem to be aware of their difficulties to create content which is relevant to practitioners (Redler & Schmidt, 2022). Scholars in advertising research also seem to be having a very similar discourse also. Explanations for the problem and solution proposals seem to be largely identical to those in marketing (Nyilasy & Reid, 2007). However, some ideas to make the discipline more relevant seem to be largely unique to advertising, such as the use of contextualized theory or replication studies (Laczniak, 2015; Royne, 2016). The Management Science discipline also seems to be lacking managerial relevance. To become more relevant to practice, scholars have proposed to split the field into one descriptive part which explores problems, and another normative part which tries to develop solutions for problems (van Aken, 2004). The focus on prescriptive research also seems to be trending in Information Systems research. Various major European scholars signed a memorandum to focus on conducting such design science research (Österle et al., 2011).

Scientific Paradigms and Their Influence on Value Creation

Characteristics of Behavioural Research

Behavioural research aims to develop theory that helps to understand, explain and describe the real world (Hevner et al., 2004). It is therefore also termed descriptive or explanatory research. To develop descriptive theory, scholars typically focus on discipline characteristics or user behaviour (Österle et al., 2011). Due to its alignment with modern business research standards, academics often choose to conduct behavioural research to align with academia (Österle et al., 2011).

The central artifact developed by behavioural researchers are typically descriptions or validations of which causes might lead to what effect (Winter, 2008). Such causal models are often expressed in quantitative terms (van Aken, 2004). To ensure that no other than the investigated causes lead to the observed effects, problems may be fractionalized (van Aken, 2004).

Despite its primarily descriptive intent, behavioural research commonly derives prescriptive statements, typically in the form of managerial implications. The main value of the contribution, however, remains in the description. Hence, prescriptive aspects in behavioural research may sometimes be considered as afterthoughts (van Aken, 2004).

The way research is conducted often determines the research question used (Henseler & Guerreiro, 2020). Typical research questions in contributions following this paradigm start with 'how is …', 'what is…' or 'is there …' (Henseler & Guerreiro, 2020).

On the one hand, behavioural research uses sophisticated methods to produce highly rigorous research results (Reibstein et al., 2009). Scholars devise methods and practices adopted from the natural sciences, psychology and sociology to explore consumer behaviour (Wilkie & Moore, 2003). Decades of conducting behavioural research have increased the academic prestige of business research and produced impressive conceptual results (van Aken, 2004). Thoroughly validated truths from descriptive research are often crucial for further solution development (Hevner et al., 2004).

On the other hand, behavioural research is criticized for producing results that often lack managerial relevance (Winter, 2008). Research is often conducted in laboratory-like environments, rather detached from reality in practice (van Aken, 2004). Some scholars argue that behavioural researchers methodological rigor and sophistication to such an extent that managerial implications are not sufficiently considered (Reibstein et al., 2009). Understanding the human mind is argued to sometimes be considered more desirable than helping marketing managers to solve their problems (Wilkie & Moore, 2003).

Characteristics of Design Science Research

Design science is a problem-solving paradigm that originates from the field of engineering (Hevner et al., 2004). The method aims to solve problems by creating

and testing innovative solutions (Hevner et al., 2004). Hence, it is also termed prescriptive research (van Aken, 2004). Scientific literature typically depicts design science as a method used by academic researchers to develop useful outcomes for practitioners (Österle et al., 2011).

The researcher takes an active role in constructing and evaluating means of reaching specified effects (Winter, 2008). Means are often developed using design techniques such as abductive reasoning or taking creative leaps to come up with an innovative new solution (Nakata & Hwang, 2020). In this regard, design science has close relational ties to design thinking, which is a creative method to innovate in companies (Nakata & Hwang, 2020).

To be able to effectively develop a solution, a problem needs to be initially described and understood (Hevner et al., 2004). Hence, also design research needs to be informed by descriptive elements (Hevner et al., 2004). However, the focus of value creation originates from the creation of a novel solution.

Design science research questions often start with 'how can…', 'how should …'or 'can we…' (Henseler & Guerreiro, 2020).

On the one hand, design science research concerns itself with the creation of useful solutions. Therefore, its relevance of design science project outcomes is often taken for granted (Winter, 2008). Furthermore, the method is by its nature highly collaborative (Österle et al., 2011). Producing solutions to problems in collaboration with practitioners, and testing them in a realistic environment, seems to promise a certain level of relevance (van Aken, 2004). When working closely together with practice, researchers have the opportunity to assert influence and understand contexts accurately (Barab & Squire, 2004). Developing solutions in collaboration with practice seems to also lower the risk that scholars produce solutions that cannot be operated in practice or are too obvious to be valuable (van Aken, 2004).

On the other hand, design science research is criticized for using methods that are sometimes considered as less rigorous (Winter, 2008). However, per definition, it is the primary focus of marketing science to produce reliable and objective knowledge (Varadarajan, 2020). Furthermore, research methods and conduct seem to be not in line with contemporary education and publication standards (Österle et al., 2011). Moreover, knowledge produced tends to be highly context-specific and less generalizable than most behavioural research (Hoadley, 2004). Design projects also tend to accumulate so much data that its analysis becomes difficult and requires lots of effort and participants (Collins et al., 2004).

Propositions for Differentiators Between Design Science Research and Behavioural Research

Marketing research is currently primarily based on conducting behavioural research (Reibstein et al., 2009). There seems to be no significant discourse in marketing academia on the use of the paradigm, such as it exists in management or in information systems. To stimulate thought amongst marketing scholars, Table 2 outlines four propositions for differentiators between the paradigms. These propositions have been derived mostly from information systems and

Table 2. Propositions to Differentiate Between Behavioral Science and Design Science.

Proposition	Focus
Proposition 1: Design science research aims to build solutions to solve a problem; behavioural research aims to understand and explain problems	Research aim
Proposition 2: Design science research develops means to reach ends; behavioural research uncovers and validates causes to ends	Type of artifact
Proposition 3: Design science research creates value though the solution it develops; behavioural research creates value by uncovering insights about reality	Value creation
Proposition 4: Design science research asks ‚how can 'or, how should'; behavioural research asks 'what is' or 'how does'	Research question

management research literature, as presented in sections 'Characteristics of Behavioural Research' and 'Characteristics of Design Science Research'. The use of these propositions will be demonstrated by evaluating four typical cases from marketing research in the following section.

Case Studies: Illustrating the Differences Between Behavioural Research and Design Science

Case Study Method

Four case studies are presented in this section. Case studies are often used when dealing with complex issues about which little is known (Perry, 1998). Contemporary business research is predominantly behavioural (Österle et al., 2011). A significant discourse on the use of design science research in marketing does not seem to exist yet. Furthermore, case studies are the appropriate method when dealing with contemporary, explanatory research, in which no behavioural control is required (Yin, 2017).

To introduce this concept into the field, a typical case study sampling design has been selected for this article at hand. Typical case sampling is often used to introduce programmes to people not familiar with the programme (Patton, 2002). One or several cases are selected to demonstrate typical, normal or average cases of a phenomenon (Patton, 2002). Therefore, academic articles were selected that clearly demonstrate typical characteristics of behavioural and design science research. Typical characteristics were identified from scientific disciplines with a strong discourse on design science research, such as Management Science and Information Systems research.

Furthermore, the article presents multiple case studies. Whereas there are some situations in which a single case study design may be sufficient, using multiple case studies is often recommended (Yin, 2017). The typical amount of cases

ranges between 4 and 10 (Perry, 1998). The articles were selected from the top journals from the field, such as the Journal of Advertising.

Behavioural Case Study 1: Practitioner and Customer Views of Advertising Creativity

The article 'Practitioner and customer views of advertising creativity' is published in the Journal of Advertising (West et al., 2008). It investigates and compares how advertising practitioners and the television-consuming public perceive creativity in advertising (West et al., 2008). As demonstrated in the next four paragraphs, the article follows a typical behavioural research approach.

Research Aim

The aim of a behavioural research article is to understand, describe or explain phenomena (van Aken, 2004). On the other hand, design science research typically aims at developing solutions to problems (Winter, 2008). The article at hand aims to understand and compare perceptions concerning advertising creativity (West et al., 2008). To achieve this aim, the groups were asked to take a survey and were presented with various commercials (West et al., 2008). Therefore, the article primarily aims to understand and describe behaviours and perceptions of two different groups. It is not the focus of the researchers to develop a solution to a particular problem.

Artifact Type

In behavioural articles, artifacts have the nature of cause-effect relationships, whereas in design articles, means are devised to reach a certain effect (Winter, 2008). The article in question examines primarily how a difference in perspective between two stakeholder groups causes a different perception of creativity in advertising (West et al., 2008). In other words, the behaviour and perceptions of two different stakeholder groups are observed.

Value Creation

Behavioural research primarily creates value by providing descriptive insights about reality; design research typically creates value through the utility of a developed solution. The article at hand creates value primarily by uncovering perceptional differences in two stakeholder groups. Managerial and educational implications are only introduced on the final page of the discussion section. They are hence rather an afterthought.

Research Question

Aiming to build understanding, behavioural research articles tend to pose research questions such as 'how does …' or 'what is…' (Henseler & Guerreiro, 2020). The article at hand aims to answer several research questions, all of which demanding explanatory answers, such as: 'In particular, to what extent are practitioner views of creativity individual or shared?' (West et al., 2008).

Behavioural Case Study 2: Branding Rhetoric in Times of a Global Pandemic: A Text-Mining Analysis

The second article used to illustrate the typical characteristics of a behavioural research article is called 'Branding Rhetoric in Times of a Global Pandemic: A Text-Mining Analysis', written by Mangiò et al. (2021), and was published in the Journal of Advertising. It investigates how brands in Italy adapted their social media appeals during the COVID-19 crisis by analysing the social media activities of 76 firms in Italy. Customer responses to such appeals are also evaluated.

Research Aim

The COVID-19 crisis severely impacted the way society and businesses functioned for several years. The article aims to understand how firms adapted their social media appeals and how customers reacted to such appeals (Mangiò et al., 2021). A major finding was that firms changed to using emotional appeals in addressing their customers. An analysis of customer responses to such emotional appeals showed mostly positive reactions to such communication.

Artifact Type

The authors studied the effects of the COVID-19 crisis, as a naturally occurring cause, on the social media appeals by Italian firms and how their customers reacted to those firm's appeals. However, the appeals or customer responses were not developed by the researchers, or its use proposed to the firms.

Value Creation

The main value contribution of the article lay in the description of reality. The problematization, the description of previous research and the analysis of firms' behaviour during COVID-19 makes up most of the research article. However, a consideration of managerial implications is described only as a part of the discussion section on the final two pages of the article.

Research Question

Finally, the typical research questions differ between design and explanatory contributions. The rhetoric firms used during the COVID-crisis were considered through the two research questions 'How and to what extent have the rhetorical appeals brands employed on social media changed during the pandemic?' and 'How did the different persuasion appeals the brands employed affect SME?' (Mangiò et al., 2021).

Design Case Study 1: The Business Model Ontology: A Proposition in a Design Science Approach

The dissertation 'The Business Model Ontology - a proposition in a design science approach' introduced a solution that has been widely adopted in business

practice (Osterwalder, 2004). The 'Business Model Canvas'—which was developed in that dissertation—is taught to practically every business student. The canvas is a tool to help better communicate and understand complex business models (Osterwalder, 2004). The dissertation in which it was proposed is—as its title suggests—a design paper and is used to outline the characteristics of a design contribution.

Research Aim

Design contributions aim to develop solutions to problems (van Aken, 2004). The success of information technology companies drastically changed the business environment in the early 2000s. As a result, businesses and their ecosystems grew more complex, leaving many previously developed concepts and tools insufficient (Osterwalder, 2004). The aim of this contribution is not to describe this evolution or its implications but to build a solution to support firms and researchers facing this change. Specifically, the business model canvas was developed to help managers and researchers to effectively communicate and understand complex business models (Osterwalder, 2004).

Artifact Type

Both descriptive and prescriptive research may develop artifacts to illustrate their results. In design science articles, artifacts are means-ends relationships (Winter, 2008). The business model canvas is a manipulable mean to achieve the end that increasingly complex business models can be effectively communicated. However, it is not a naturally occurring phenomenon or concept that has organically evolved in businesses.

Value Creation

The main value in prescriptive contributions is generated through the development and testing of a solution (van Aken, 2004). That article introducing the business model canvas is structured as a typical design science contribution. The first three sections motivate the problem and introduce related concepts and previous research on the topic. The remaining five sections of the article concern the creation of the artifact, the demonstration of its use in the intended business context, such as the evaluation of its effectiveness in resolving a particular problem. The artifact creation is explicitly defined as the main contribution. The first three sections account for around one quarter of the article. The five sections regarding the development and testing of the artifact constitute about three quarters of the dissertation.

Research Question

Aiming to develop solutions, design science articles typically pose research questions such as 'how can …' or 'how should…' (Henseler & Guerreiro, 2020). The research question leading to the development of the 'Business Model Canvas' is 'How can business models be described and represented in order to …?'.

Table 3. Summary of Study Results.

	Practitioner and customer views of advertising creativity	Branding rhetoric in times of a global pandemic	The Business Model Ontology: a proposition in a design science approach	Development of trust scores in social media (TSM) algorithm and application to advertising practice and research
Paradigm	Behavioural research		Design science research	
Aim	To understand and compare perceptions concerning advertising creativity	To investigate if and how and the pandemic outbreak has changes firm's rhetoric and how customers react to this change	Create a solution to aid communication and understanding of complex business models	Development of a new social media algorithm for measuring actor's trust
Artifact type	The stakeholder perspective (cause) and its effect on advertising perceptions (effect)	The COVID outbreak (cause) and its effect on firm's rhetoric (effect)	Business model canvas (mean) to communicate business models (end)	Algorithm (mean) to measure trust in social networks (end)
Value creation	Advancing an understanding of how different groups perceive advertising	Advancement of an understanding of how firms adapted their communication due to a crisis	Creation of the communication tool (business model canvas)	Creation of an algorithm to measure trust
Research question	In particular, to what extent are practitioner views of creativity individual or shared?	How and to what extent have the rhetorical appeals brand employed on social media changed during the pandemic?	How can business models be described and represented in order to build the foundation for subsequent concepts and tools, possibly computer based?	How to implement effective viral advertising strategies based on consumer-to-consumer trust within a social network?

Design Case Study 2: Development of Trust Scores in Social Media (TSM) Algorithm and Application to Advertising Practice and Research

The article entitled 'Development of Trust Scores in Social Media (TSM) Algorithm and Application to Advertising Practice and Research' written by Roy et al. (2017) can also be considered a design science contribution. It describes the development and testing of a social media algorithm for measuring trust.

Research Aim

Existing solutions used by research and practice were insufficient in their ability to measure trust in social media networks (Roy et al., 2017). Hence, the aim of their article was to develop a way of to more accurately measuring trust. It does not follow a descriptive aim, such as to describe the insufficiency of previous solutions. The trust score algorithm is a mean developed to achieve the end that trust in social media can be better measured.

Value Creation

The argumentation of the article revolves around the creation of a better solution. The insight that and how previous solutions are insufficient is clearly not the main value of contribution. Half of the article consists of a description of the problem, conceptualizations and previous solutions, whereas the second half concerns the solution development, its testing and managerial implications.

Research Question

Prescriptive research questions often consider how things should be or how things can be done (Henseler & Guerreiro, 2020). Analogously, the research question of this article is 'How to implement effective viral advertising strategies based on consumer-to-consumer trust within a social network'. The case studies are summarized in Table 3.

Discussion

Behavioural research and design science should be used to complement each other. The former is typically used to develop and justify theory explaining problems or situations that occur (Hevner et al., 2004). The latter is primarily used to construct artifacts to help solve such problems (Hevner et al., 2004). To conduct design science research, sufficient understanding of the underlying variables is required (Sandoval & Bell, 2004). Furthermore, solutions developed often need to be validated by the means of behavioural research (Hoadley, 2004). Therefore, the two paradigms are complementary parts of a research cycle of problem identification, solution development and solution validation (Hevner et al., 2004). However, marketing research is currently predominantly behavioural (Reibstein et al., 2009). The aim of this article is not to argue for a radical break from marketing's descriptive roots, but to stimulate thought about whether the development of more prescriptive works could contribute to solving one of marketing's most pressing issues.

Value creation is an activity generating benefits for specific stakeholder groups, which they are typically willing to pay for (Lepak & Smith, 2007). Marketing managers invest significant resources in investigating how to ideally create value for their customers (Kotler, 2020). Both behavioural research and design science have the potential to provide value to marketing managers. However, research focusing on understanding or explaining problems alone failed to generate

sufficient value to justify investments from practice. Solutions to problems, on the other hand, may be perceived as more valuable to marketing managers (Hoadley, 2004; Österle et al., 2011). This idea is supported by researchers from various research disciplines, such as Educational Psychology and Information Systems Research (Hevner et al., 2004; Sandoval & Bell, 2004). Furthermore, marketing academics may be more likely to create functioning solutions if they are required to implement and test the same in the context of application (Hoadley, 2004). Such methodological alignment may ensure a degree of practical implications and validity (Hoadley, 2004). Moreover, design science research is typically conducted in co-creation with practitioners, whereas behavioural research is often conducted in laboratory settings (Barab & Squire, 2004; van Aken, 2004). Such collaboration may improve the researcher's understanding of the practitioner's contexts and increase the researcher's influence (Barab & Squire, 2004).

Marketing research contributions may be targeted at various stakeholder groups (Varadarajan, 2020). Therefore, not every research contribution is developed with the intention to be relevant for marketing managers. For example, a research contribution aimed at developing an understanding of a new, complex phenomenon may be highly relevant to marketing academics. Moreover, academic incentives often seem to conditionalize a descriptive way of working (Österle et al., 2011). However, the article at hand focusses on marketing managers and on decreasing the gap between them and academics. Design science research may be used by researchers for contributions in which they intend to address marketing managers. The use of the method may lead to managerially relevant research outcomes, which should contribute to bridging the gap.

The purpose of the article was to contribute towards bridging the gap between marketing academics and marketing managers. Marketing managers do not seem to know concepts from academia and do not seem interested in using academic research for education purposes (Redler & Schmidt, 2022). Moreover, many marketing managers seem to cultivate a degree of anti-intellectualism (Nyilasy & Reid, 2007). Furthermore, there seems to be a divide amongst marketing academics whether methodological rigor or practical relevance should be first priority of scientific research (Varadarajan, 2020). So how can this article contribute to bridging this gap? The typical case study sampling may be used to illustrate typical characteristics of a phenomenon to unfamiliar stakeholders (Patton, 2002). Hence, the propositions for differentiators between design research and behavioural research, such as the presented typical case studies, are supposed to illustrate design science research to marketing academics. Furthermore, they may aid academics to reflect on their scientific research. When marketing researchers understand and reflect on their use of these research paradigms, design science research might be used more often. According to the findings from other research disciplines, design science is often perceived as more relevant to practitioners (Österle et al., 2011). Hence, when marketing managers perceive the work of marketing academics as more relevant, the gap between the groups may be bridged.

The idea to use design science research to increase managerial relevance in marketing is largely unexplored, but not entirely new. A small number of previous

research articles has proposed its use in the discipline before (Henseler & Guerreiro, 2020; Redler & Schmidt, 2022), a demonstration of design science research and behavioural research with their typical characteristics in marketing has not been done before. Therefore, differentiation proposition and demonstration may be considered central contribution and novelty of this article. Due to the novelty of the concept to the marketing discipline, such demonstration may provide orientation to researchers aiming to increase managerial relevance.

The claim for design science's relevance increasing potential has been raised in numerous research disciplines, amongst which are Educational Psychology, Information Systems Research and Management Science. Therefore, a certain confidence may be assumed that academics may utilize the mean (design science) to achieve the end (relevance to practitioners). More specifically, due to argumentations in various other disciplines, it may be assumed that marketing managers value research outcomes, which are tested solutions to real-world problems provided by marketing academics. However, to the best of my knowledge, no contribution in these disciplines has attempted to provide evidence for design science's relevance to practitioners. A future contribution providing evidence for the method's relevance to marketing managers compared to behavioural research would be of value. The typical case study sampling method provides no basis for generalized or definitive statements (Patton, 2002). Therefore, the case studies demonstrate that scientific contributions in marketing can be classified into the two paradigms, despite there being no significant discourse around the concepts. They also illustrate typical characteristics of design science research and behavioural research to those unfamiliar. However, these case studies have been selected because they were in line with the propositions, which represent typical characteristics. Many other research articles may fulfil these characteristics only partially. These may then still be characterized as rather behavioural or rather design-oriented.

Various authors have claimed that marketing research is often not generating sufficient value for practice (Baron et al., 2011; Reibstein et al., 2009). Academic literature in marketing has explored various potential causes for the problem, as depicted in Table 1. Design science research's characteristics seem to address most of these causes. The method heavily relies on conducting research in collaboration with practice (Hoadley, 2004). Ideas are conceptualized in collaboration and tested in the context of intended use (van Aken, 2004). Respectively increased collaboration may improve the understanding of practitioner's roles. Moreover, if researchers increased collaboration, education could potentially decrease its often-criticized detachment from practice. If research produced non-obvious, operational solutions, biases exiting amongst some practitioners might be reduced. Furthermore, marketing research has been criticized for often relying on highly sophisticated methods, which might be difficult to understand (Lehmann et al., 2011). As design science research does not typically produce quantitative, reductionistic models, such as behavioural research often does, it might be easier to understand for marketing managers (van Aken, 2004).

Technology, such as artificial intelligence, seems to rapidly redefine how value is created and by whom. It can be considered as a new player battling for the

attention of decision-makers in marketing. Providing inputs to understand, describe and explain the world is a value proposition that is likely to increasingly come from technology. Creative, collaborative problem solving—possibly based on AI-generated descriptive inputs—seems to be a skill that will continue to be executed mostly by humans (Kohda, 2020). Therefore, design-orientation could help redefine and preserve the societal position of scholarly research.

Conclusion

The article at hand aims to argue that marketing's relevance issue may be mitigated if scholars conducted more design science research. Moreover, four propositions for differentiating design science research from behavioural research have been postulated and demonstrated with four typical case studies. These may be useful to marketing researchers that intent to reflect on their own, or other's use of these paradigms. Despite very few current examples (Henseler & Guerreiro, 2020), the notion of using use design science in marketing research is new to the field. The use of design science in marketing research could create value for one of the discipline's main stakeholders—marketing managers. The value may originate from academics focusing on the creation of real-world solutions instead of focusing on problem descriptions (Österle et al., 2011). Moreover, validity and usability of knowledge are increased, as academics are required to implement and test the developed solutions (Hoadley, 2004). Collaboration with practice enhances the researchers understanding of practice contexts (Barab & Squire, 2004). However, it remains crucial that academia also conducts behavioural, empirical research (Hevner et al., 2004).

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