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Challenges and solutions for marketing in a digital era

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ABSTRACT

Internet usage continues to explode across the world with digital becoming an increasingly important source of competitive advantage in both B2C and B2B marketing. A great deal of attention has been focused on the tremendous opportunities digital marketing presents, with little attention on the real challenges companies are facing going digital. In this study, we present these challenges based on results of a survey among a convenience sample of 777 marketing executives around the globe. The results reveal that filling "talent gaps", adjusting the "organizational design", and implementing "actionable metrics" are the biggest improvement opportunities for companies across sectors.

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Introduction

Wharton Professor George Day identified the widening gap between the accelerating complexity of markets and the capacity of most marketing organizations to comprehend and cope with this complexity. Although the forces of market fragmentation and rapid change are everywhere, we believe that Internet usage is the main driver behind the widening gap (Day, 2011). The 1990s being the decade of e-commerce, the early part of the 21st century has become the era of social commerce (Fader & Winer, 2012). The role of "digital marketing" is confirmed in a study by IBM consisting of interviews with CMOs (IBM Institute for Business Value, 2011). These CMOs formulate the following four biggest challenges: (1) explosion of data (sometimes also called big data), (2) social media, (3) proliferation of channels, and (4) shifting consumer demographics.

Three of these four biggest challenges correspond to digital marketing developments. The Internet has become one of the most important marketplaces for transactions of goods and services. For example, online consumer spending in the United States surpassed USD 100 billion (already in 2007), and the growth rates of online demands for information goods, such as books, magazines, and software, are between 25% and 50% (Albuquerque, Pavlidis, Chatow, Chen, & Jamal, 2012). Other anecdotic evidence that stresses the importance of the Internet as a transaction channel comes from Amazon where on the peak day, November 26, 2012, customers ordered more than 26.5 million items worldwide across all product categories, which is a record-breaking 306 items per second (Cheredar, 2012; Clay, 2012). Digital music sales in 2011 exceeded physical sales in the United States for the first time in history (Fisch, 2010). Besides B2C and B2B markets, online C2C markets have emerged with considerable success. Examples are LuLu, eBay, and YouTube. The rise of online use for communication is also quite substantial from around 10% in 2008 to over 20% in 2013. Newspapers and magazines have lost share in this period (Marketing news, May 2013, p. 16).

The number of Internet users in 2011 was over 225 million users in North America and more than one billion in Asia (Business Monitor Intelligence, 2012). Worldwide, there are about one billion monthly active users of Facebook. Two years after the introduction of Facebook, there were already 50 million users (Fisch, 2010). In the USA, Brazil, Europe, and India more than 70% of the population is member of at least one social media network. In India, the population is on the average a member of 3.9 networks. In Brazil, this number is above 3 and in the USA and Europe around 2 (Van Belleghem, Eenhuizen, & Veris, 2011). In 2011, more than 50% of social media users follow brands on social media and companies are increasingly investing in social media, indicated by worldwide marketing spending on social networking sites of about USD 4.3 billion (Williamson, 2011). Managers invest in social media to create brand fans who tend to have positive effects on firm word of mouth and loyalty (de Vries, Gensler, & Leeflang, 2012; Dholakia & Durham, 2010). There are 32 billion searches on Google every month and 50 million Tweets per day. It is expected that more than 115 million people in the United States will create online content at least monthly in 2013 (Albuquerque et al., 2012; Zhang, Evgeniou, Padmanabhan, & Richard, 2012). As a consequence, brand managers no longer control the messaging they use to create brand strategies (Deighton, 2007; Fader, 2012; Moe & Schweidel, 2012). Moe and Schweidel (2012) maintain that this new

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environment for organizations/marketers is not without risk. Several researchers have shown that posted product ratings and reviews become increasingly negative as rating environments mature (Godes & Silva, 2012; Moe & Schweidel, 2012; Moe & Trusov, 2011). Research findings suggest that more than 90% of all consumers read online reviews before they buy products and that 67% of all purchasers of consumer goods are based on user-generated content. Approximately, consumers read at least four reviews before making a purchase (Godes & Silva, 2012; Kee, 2008). Importantly, these reviews play a key role in purchase decisions (Godes & Silva, 2012; Kee, 2008). Hence social media content creates empowered customers who are more led by other customers than by advertising. As a consequence, this will lead to other (marketing) orientations such as customer engagement (van Doorn et al., 2010). The use of social media also creates a tremendous increase in customer insights, including how consumers are interacting with each other and the products and services they consume. Blogs, product reviews, discussion groups, product ratings, etc. are new important sources of information describing how customers collect information, use that information, and how that information is used in their decision-making, shopping behavior, and post-purchase behavior (Mayzlin & Yoganarasinhan, 2012; Onishi & Manchanda, 2012). Hence, at least in principle, we are able to follow customers in their customer journeys (Lemke, Clark, & Wilson, 2011).

The digital revolution in society and marketing creates tremendous challenges for firms. Prior literature within marketing has mainly conceptually discussed the impact of the digital revolution. This involves the discussion on the effects on business and revenue models, consequences of new digital channels and media, and the increasing prevalence of data (see Table 1). The majority of these studies only discuss theoretical and practical consequences of the digital revolution. Beyond that, there is an increasing number of quantitative studies investigating specific research questions relevant in digital marketing, such as the effect of user-generated content on shareholder value (Tirunillai & Tellis, 2012 and a special issue of Marketing Science with introduction by Fader and Winer (2012)) or models to analyze new big data (e.g., Feit, Wang, Bradlow, & Fader, 2013). There are, however, only a few studies that indeed aim to quantify the importance of challenges within practice. For example, recently IBM has quantified some emerging issues (IBM Institute for Business Value, 2011). Their study is, however, limited in scope, as they only discuss a few important issues, while we aim to study the presumed importance of more challenges, which are also based on an extensive pre-study among marketing academics. Beyond that, we also complement this quantification of challenges with a discussion of theoretical insights and emerging research directions for marketing science.

We aim to identify and quantify the major challenges for digital marketing in this study. Surveying 777 marketing executives from the US, Europe, and Asia, we quantitatively assess the importance of these challenges. In addition, we identify potential solutions firms have developed to proactively act on these challenges. In doing so, we can also assess the most prevailing tensions. In this way, we contribute to a better understanding of an important part of the marketing capabilities gap in today's digitalization of markets (Day, 2011) and provide a practice-based road map for future research on digital marketing.

The outcomes of our study reveal that the following three potential challenges are most important for "digital" marketers:

- The ability to generate and leverage deep customer insights;
- Managing brand health and reputation in a marketing environment where social media plays an important role;
- Assessing the effectiveness of digital marketing.

An exploration of the possible interventions for addressing these challenges reveals that the biggest improvement opportunities for companies across sectors are:

- To fill the gap between the supply and demand of analytically trained people in marketing ("talent gap");
- To redesign organizations so that they are (more) accountable and have clearer incentives and decision-making processes that account for the three key trends in digital business, and
- To create actionable digital metrics.

Methodology of our study

This research started with a qualitative phase in which we aimed to identify the major challenges in today's marketing. We performed expert interviews with leading marketing scientists at the EMAC conference in Ljubljana in 2011, McKinsey clients, and McKinsey experts to define tensions in marketing. The results of this qualitative phase clearly suggested that today's marketing challenges are digital. We then formulated the most important "digital" marketing tensions and performed an online survey among readers of the McKinsey Quarterly, i.e., using the McKinsey Quarterly panel. Only these readers were approached that have self-identified them as sales and marketing executives of their respective companies across the globe. Given that we use the McKinsey Quarterly panel, the used sampling method is a convenience sample with its inherent limitations. In total, 3743 executives were approached in our survey conducted in October 2011. We excluded respondents that did reply "don't know" to at least half of the questions in the questionnaire. This resulted in 777 usable responses (response rate 20.8%). Almost 78% of all responding firms were located in either Europe or North America. The sample consisted of firms from multiple industries, including professional services (19.4%), financial services (11.2%), high-tech and telecom (16.7%), manufacturing (15.5%), and other industries (37.1%). The firms operated both in Business-to-Business (54.8%)

Table 1
Selective Overview of Prior Literature on Consequences and Challenges of Digital Revolution.

	Main Challenges in Digital Marketing			
	New Media and Channel Challenges	Analytics/Big data	Business Models	This Study
Conceptual/theoretical discussion	Neslin and Shankar (2009), Winer (2009), Deighton and Kornfeld (2009), van Bruggen, Antia, Jap, Reinartz, and Pallas (2010), Shankar, Venkatesh, Hofacker, and Naik (2010), Bolton et al. (2013), Hennig-Thurau et al. (2010), Kaplan and Haenlein (2010)	Kumar et al. (2013), Davenport (2006), Davenport et al. (2012), Davenport and Patil (2012)	Sorescu et al. (2011), Berry et al. (2010) and Rigby (2011)	Empirical study survey among 777 marketing executives across the globe to assess the importance of specific digital challenges and the extent to which firms have solved these challenges. This is combined with a theoretical discussion of these challenges and suggestions for future research for marketing research.
Survey among firms	IBM	IBM	IBM	

and consumer markets. The majority of the surveyed firms were large with employee numbers above 500 (59.9%). For exact details on sample we refer to the Appendix.

The increasing prevalence of digital media

Before discussing the main digital challenges, it is important to describe the current use of digital channels. We asked companies their current use of digital media and their intended use in the coming two years (see Fig. 1). Company home pages, e-mail, and social media are most commonly used today. Social media and mobile applications represent the biggest growth areas for companies over the next 2–4 years. We thus expect that firms will increasingly adopt these channels in their marketing operations to interact with customers. With more than one billion smartphones at the beginning of 2013, mobile is driving a second Internet revolution that is even more profound than the first one (Husson et al., 2013). Marketers are expected to move away from tactical mobile efforts to more transformative mobile marketing strategies in the next few years. As far as we know there are no scientific publications yet that determine the effects of mobile marketing on metrics.

To confirm our initial ideas from the qualitative pre-phase, we also asked firms what have been the dominant changes in the past two years that affected that business most dramatically. Importantly, the increasing prevalence of digital media and tools in marketing has most affected companies in the past two years (see Fig. 2). The ability to interact with and/or serve customers in a new manner is by far the most dominant change, particularly in companies with a focus on financial services. Other important changes refer to the increasing access to data and insights, and the ability to reach new customer segments. These digital changes are considered to be much more important than changes such as the entry of new competitors and the change in balance of power with "historically" established value chains. Hence, indeed the digitalization of media and society has had the most profound impact

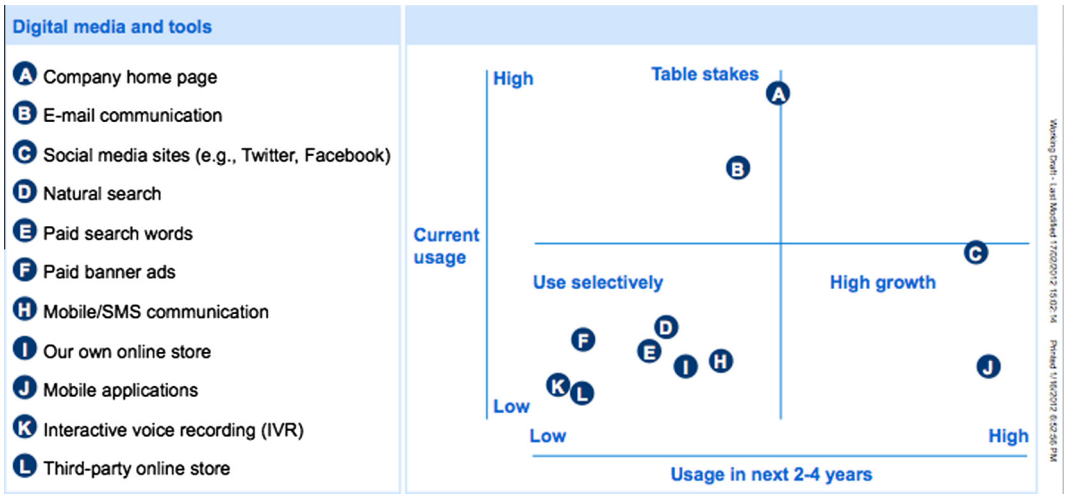

Fig. 1. Current usage & future usage matrix of digital marketing tools.

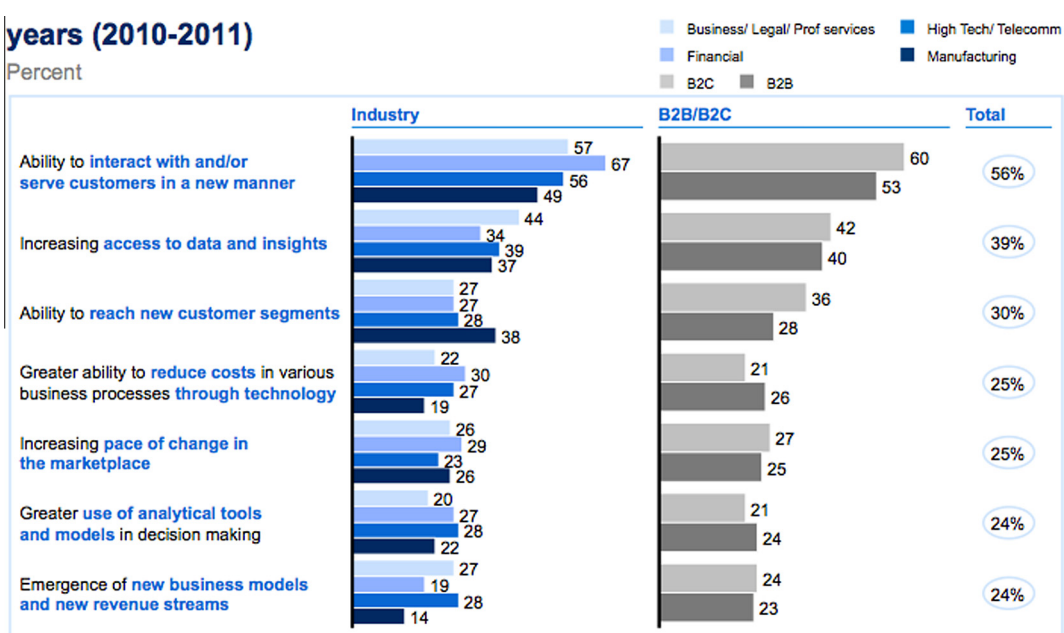

Fig. 2. Most important changes that affected companies in the past two years.

Table 2
Defined 10 Marketing Tensions.

	Digital Tension	Challenge	Description
Business strategy and customer insights	1. Digital Revolution	Embrace vs. Defend	The increasing prevalence of digital tools and technologies is threatening existing business models
	2. Customer Insights	Differentiator vs. Hygiene	Generating and leveraging rich and actionable customer insights is becoming a necessity to compete
	3. Breakthrough	Data Crunching vs. Creativity	An overreliance on data and 'hard facts' can stifle creativity and breakthrough innovation
Go-to-market operations and execution	4. Social Media	Customer engagement vs. Customer enragement	Managing brand health and reputation is more challenging in a marketing environment where social media plays an important role
	5. Online Opportunity	Youth vs. "Rest of us"	Too often, digital marketing targets only young customer segments, missing the promising older age groups
	6. Price Transparency	Unleash vs. Control	Online price comparison tools are impeding companies' ability to set optimal prices
	7. Automated interactions	Productive vs. Destructive	Service automation and efforts to migrate customer interactions online can create customer dissatisfaction and destroying value
	8. Metrics	Expansive vs. Established	Assessing the effectiveness of digital marketing is difficult, since online and traditional metrics are not readily comparable
Organization and capabilities	9. Talent Gap	Incremental upgrade vs. Fundamental step-change	Marketing and related departments are facing a significant talent gap in analytical capabilities
	10. Organization	Functional vs. Integrative	The pervasiveness of marketing activities within companies is causing organizational challenges (e.g., role ambiguity, unclear accountability and incentives)

on the marketing strategies of firms. Importantly, this holds across all studied sectors.

Marketing tensions

The increasing digitalization leads to important challenges for marketing executives. They are confronted with increasing complex and rapidly changing markets which are beyond their control. As a consequence firms have comprehended these changes and understand how to cope with them (Day, 2011). Hence, we defined 10 digital marketing tensions based on our discussion with marketing scientists and practitioners. The 10 marketing tensions/challenges, which can be interpreted as opportunities or threats, are summarized in Table 2. We classify these into three categories:

(1) Business strategy and customer insights;
(2) Go-to-market operations and execution, and
(3) Organization and capabilities.

Importantly, each of these challenges requires answers from marketing. For example, the digital revolution can be either embraced by, e.g., developing social media platforms, adopting cross-channel strategies, etc. or one can pursue a more defensive approach by, e.g., increasing the service level in existing non-digital channels (i.e., stores). For companies it is important: (1) to gain an understanding of each of these challenges, (2) to assess the relevance of each challenge for their business, and (3) to develop a reaction to each challenge.

In our study we specifically asked our respondents which, if any, of these potential ten tensions related to the increased use of digital media and tools are most important for marketing and business leaders to address. Respondents were asked to rank up to three challenges. Subsequently, we also asked whether they developed solutions for these challenges. To this end we asked them whether: (1) plans to address challenges were already in place, (2) plans were developed but not yet implemented, (3) plans were being developed, and (4) plans were not developed so far. Combining the results on the relevance of each channel and the presence of actionable solutions for each channel, we developed an importance-opportunity matrix (see Fig. 3).

This importance-opportunity matrix clearly shows that "developing actionable metrics" (8), "addressing talent gaps" (9), and to a lesser extent "digital organizational design" (10) represent the biggest opportunities to have impact across sectors. We also observe that "customer insights" (2) and "managing brand health and rep-

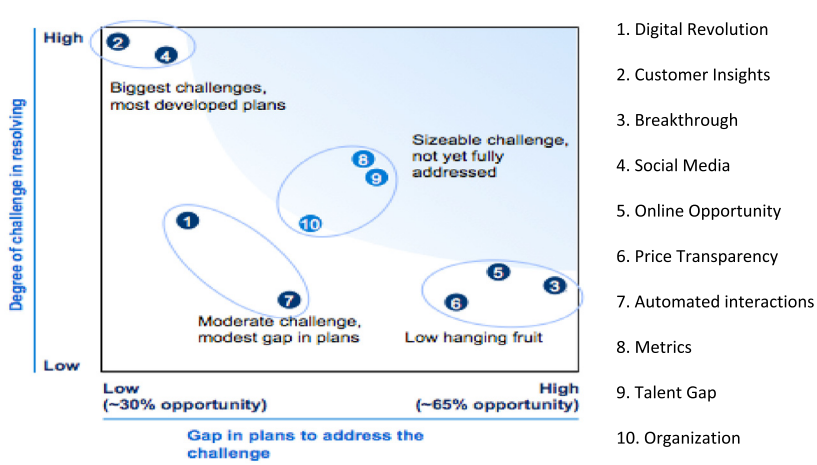

Fig. 3. Importance-opportunity matrix of 10 digital marketing tensions.

utation in a marketing environment where social media play an important role" (4) are rated as the biggest challenges. However, the majority of companies suggest that they have plans to react on these challenges effectively. Still, there are big opportunities here for lagging companies. The "digital revolution" (1) is considered as a moderate challenge and firms suggest that they have developed effective solutions. The same holds for "the management of automated interactions" (7) with customers through digital self-service, such as online banking and online check-in. Interestingly, the "increasing price transparency" (5), "the digital difference between young and old consumer segments" (6), and "the data-innovation dilemma" (3) are considered as less relevant challenges for those companies that did not develop solutions. Especially, the lower importance of the price transparency issue is remarkable, as many companies in many sectors (i.e., financial services) are strongly affected by numerous free digital price comparison services, which tend to erode prices and margins, especially in times of economic recessions. We continue with an in-depth discussion of each of the ten identified digital marketing tensions.

Strategy and customer insights

Tension 1: digital revolution and business models

The digital revolution is threatening existing business models. Business models describe how a business creates the value it provides to customers and how it then captures its economic profits (Day, 2011). More specifically, Sorescu, Frambach, Singh, Rangaswamy, and Bridges (2011, p. 4) define business models as *a well-specified system of interdependent structures, activities, and processes that serves as a firm's organizing logic for value creation (for its customers) and value appropriation (for itself and its partners)*. Many business model changes affect both value creation and value appropriation and its underlying strategies (i.e., operational excellence for value appropriation and customer efficiency for value creation) (Sorescu et al., 2011). The effect of digital on business model has been rather frequently discussed in retailing. Already, in the early ages of the Internet, this has received considerable attention (e.g., Alba et al., 1997). More recently, Rigby (2011) discussed the future of shopping in an era of digitalization.

In general, offering customers the ability to search and buy online requires companies to re-specify their business models. We found in our convenience sample that, although most companies generate less than 5% of their sales online, digital marketing is a disruptive force having a profound impact in transforming business models. Integrating digital tools and technologies into existing business models and adopting current business models to new and/or disruptive technologies are the most important strategies to address the challenges of the prevalence of digital tools and technologies threatening existing business models. This is also particularly apparent in high-tech and telecommunication companies. An example is Netflix, which took a proactive approach to adopting on-demand technology, whereas Blockbuster did not react to changing customer needs and technologies (Friedman, 2010). Many telecommunication companies also face important digital challenges due to the very fast adoption of new free digital services, such as WhatsApp and Viber, which offer traditional voice and text messaging services pretty much for free. As telecommunications companies generate significant revenues from these services and are facing the risk of decreasing ARPUs (average revenue per user) as well as falling investor confidence in their ability to continue to grow, these institutions now need to adjust how they bundle and price their services.

Tension 2: customer insights

The most important challenge (see Table 2 and Fig. 3) in a digital marketing world is the ability to generate and leverage deep customer insights. In this digital world, big data has become the norm. By big data we mean data sets so large and complex that it becomes difficult to process using on hand database management tools (i.e., offered by providers are Oracle, Microsoft) or traditional data processing applications. The challenges include capture, curation, storage, search, sharing, transfer, analysis, and visualization (Snijders, Matzat, & Reips, 2012). Big data offer ample opportunities to follow customers during their customer journey, i.e., the journey customers perform from awareness or orientation on a product to purchasing and even becoming loyal to the product. Efficient tracking the customer's journey is a key requirement to optimize advertising campaigns and budgets. Technical analysis of customer journeys has become an important feature for digital marketing agencies, who follow customers when he or she seeks information, compares products, and ultimately takes the decision to purchase a product and buys it. Companies, which systematically analyze traditional data, are said to outperform competitors (Davenport, 2006). Examples of companies, which as a result of using this opportunity outperform competitors, are Amazon.com (annual growth rate (a.g.r.) 2000–2010: 56.5%), O_2 (a.g.r. 29.5%), CapitalOne (a.g.r. 16.6%), Tesco (a.g.r. 11.7%), and Progressive (a.g.r. 6%). The UK Retailer, Tesco, built a culture of customer data-driven decision making (format management, category management, CRM systems, communication, etc.) into every level of the company to become one of the world's top retailers. Systematically turning loyalty card data into insights and insights into business decisions, fueled Tesco's rise to the number one retailer in the UK. Tesco has created a powerful data collection engine through the combination of data obtained from loyalty cards, scanners, Web sites, and (additional) market research (Humby, Hunt, & Philips, 2008). Their customer insights are supported by an outsourced analytical and data storage partner. As a result, they collected 1600 million new items of data every month from 10 million card holders and they measure 8 million transactions in 700 stores referring to 50,000 SKUs per week. Tesco created an organizational culture of always seeking to use data to better understand customers. Finally, they developed multidimensional segmentation grouping of customers with similar needs and behaviors, to develop segment-specific insights. Despite the increasing relevance of big data, these data also have their problems, such as their size, volatility, lack of structure, missing data, etc. Moreover, many firms still do not have their regular data (i.e., customer data) arranged in a good fashion.

We find that data-driven customer insights are gaining the most traction in subscription businesses such as financial, high-tech, and telecom companies. It is remarkable, however, that still over 80% of companies in our sample lack granular customer data and/or the ability to link data to sales/customer usage. Fig. 4 represents a classification of the answers of the statements concerning data usage and information detail.

The numbers in Fig. 4 add to 92%, because 8% of the companies do not know the level of detail of the customer data. Among the most important benefits that companies hope to gain from analyzing customer data are that (1) these data drive sales volume (43% of all companies), (2) induce innovation (28%), and (3) enhance customer engagement also through the creation of stronger brand loyalty (42%).

Tension 3: stifling creativity & innovation

One of the marketing tensions that received much attention in the qualitative research, particularly in discussions with managers, is that an overreliance on data and hard facts can stifle creativity and breakthrough innovations. Nowadays, we observe a stronger

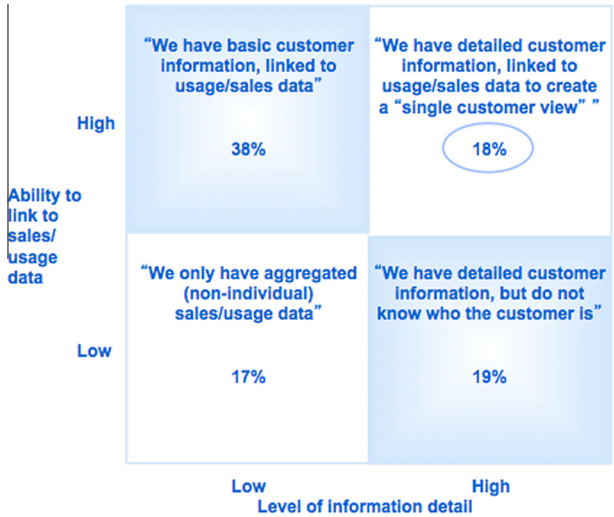

Fig. 4. Type of Customer Data Being Used.

role of accountability in marketing. In order to be influential, marketing departments should be accountable (Verhoef & Leeflang, 2009). However, managers are afraid that more fact-based decision making reduces out-of-the-box thinking, which is important for developing new initiatives and innovations. Specifically, fact-based decision making will mainly be considered as challenging and satisfying for "left-brained" persons, while more intuitive and creative "right-brained" persons will feel uncomfortable and less challenged in fact-based decision environments. The latter group may feel less influential in these organizations, and may seek more entrepreneurial and stimulating environments. As a consequence, innovativeness may be stifled, so the argument.

Although creativity and innovation may be somewhat reduced in a more data-driven environment, it does not necessarily imply that there are no innovations, though. It is the degree of innovativeness that is being affected. In an additional analysis, we indeed found that data is a proven driver of very marginal innovations (line extensions), but that more radical innovations are less data driven. Companies, which are successful in introducing breakthrough innovations, leverage a range of inputs beyond quantitative data. Such inputs include ideas and feedback from external vendors and experts and/or internal management's or expert's insights and opinions.

Interesting, however, is that nowadays "big data" is also considered as an important source for innovations (McAfee & Brynjolfsson, 2012). The challenge here is that companies aim to develop new products or improve customer service processes using (several) data sources. For example, credit card companies have analyzed fraudulent behavior with stolen credit cards. Based on this, they automatically block credit cards that show payment patterns frequently displayed with stolen credit cards, in order to reduce the financial risk of both the customer and the credit card company. Yet another example is how the Dutch railways use their own travel data and data provided by TomTom navigation systems to provide information to customers on their expected travel time by train and by car.[1] This helps customers to make more informed decisions on their choice of travel mode.

Go to market operations and execution

Tension 4: social media & brand health

Within social networks, people affect one another through complex social/interpersonal influences. These are conscious or unconscious, active or passive, normative or informative (Eck van, Jager, & Leeflang, 2011). Word of mouth (WoM) reflects part of this social influence. In earlier times, the usual strong effects of social influence could only be measured with much difficulty. Since its introduction, social media offer opportunities to stimulate and to measure social interrelations among customers (Chen, Chen, & Xiao, 2013) and hence WoM. Social media can be defined as "a group of Internet-based applications [...] that allow the creation and exchange of user-generated content" (Kaplan & Haenlein 2010, p. 61). Social media provide an unparalleled platform for consumers to publicize their personal evaluations of purchased products and thus facilitate word-of-mouth communication (Chen, Fay, & Wang, 2011). Usually, there is a distinction made between customer-initiated social media (e.g., reviews, blogs) and firm-initiated social media (e.g., brand communities) (de Vries et al., 2012).

Given that customers tend to lack trust in most forms of advertisement (Nielsen, 2007), social media offer opportunities to create trust and to reach a large audience easily and at a low cost. The (strong) effects of social networks on customer retention and adoption have been determined/confirmed in multiple studies (e.g., Nitzan & Libai, 2011; Rahmandad & Sterman, 2008, and Yoganarasimhan, 2012). Although, the effects can be more complicated than just linear effects, as the effect of social networks depends on the type of contact between customers and may vary over time (e.g., Risselada, Verhoef, & Bijmolt, 2014).

Social media is gaining strong attention with business (e.g., Kaplan & Haenlein, 2010). Although social media is taking control of the brand reputation of companies, they are struggling to measure its real impact. This explains why the role that social media play in managing brand health and reputation is perceived as one of the most important tensions (ranked number two). That companies struggle to measure its real impact (see also Tension 8) may explain why according to our survey approximately 74% of companies are not or minimally using social media as a marketing vehicle today. Although many companies have plans how to use social media, these plans are frequently not or only limitedly implemented yet.

Advocates of social media see it as a way to create value-added content for customers and to monitor/temper negative customer sentiment. It may also be a way to connect more strongly with customers and to engage them in the value creation (Table 3, multiple answers are possible). However, one of the potential dangers is that firms do not succeed in engaging customers, but that customers will be enraged. Within a social media environment, customers can easily become value destroyers instead of value creators for companies (Verhoef, Beckers, & van Doorn, 2013; Verhoef, Reinartz, & Krafft, 2010). Many companies are struggling how to deal with the social environment as it is in deep contrast with the traditional way companies pursued marketing.

Traditionally, companies have used costly fully controlled (mass) advertising strategies to build and sustain brand reputations. Carefully developed advertisements were based on strategic brand positioning statements. To be successful, managers should gain a sufficient reach and attention among the selected target group. Customers were only involved in these strategies as they participated in marketing research studies (i.e., survey, focus group, test panels). This approach created strong control over a company's reputation.

Trying to engage customers in brand building through social media introduces a weaker control (Verhoef et al., 2013). On the positive side, it may create brands that are more preferred by consumers as brands are more based on customer preferences. However, the lack of control has a strong downside, especially for strong brands. Strong brands already have a strong consumer franchise and the additional returns of engaging customers in creating further brand equity is somewhat smaller. The risks of a lack of

[1] See www.filewissel.nl for example of this service.

Table 3
How firms aim to manage brand health with social media (N = 236).

Creating value-added content or services for customers on social media sites and forums	49%
Monitoring brand mentions and sentiments in social media forums and addressing negative messages directly	44%
Identifying influential discussion forums and participating in discussions about the brand	25%
Reaching out to key online opinion leaders to serve as brand advocates	22%
Hiring a third-party service provider to manage brand interactions in social media and other online forums	14%

control are, however, larger for strong brands. For example, McDonald's set up a Twitter campaign hoping to promote positive WoM. Instead, they received a lot of adverse reactions and negative WoM (Verhoef et al., 2013). Companies, which have a strong negative sentiment, are particularly exposed to these kinds of activities. There is a risk that customers use the engagement opportunity to tarnish brand value. In sum, for strong brands the risks of engagement activities are high, while the potential returns for especially strong brands with a significant group of active brand opponents can be low or even very negative. Any activities pursued therefore need to be particularly cautiously managed.

Tension 5: online targeting

In the early days of Internet, users were usually considered to be younger (e.g., Teo, 2001). As a consequence, still many decision makers may feel that moving to more digital channels may induce that older people may have problems with using these channels and may induce that these target segments are not sufficiently served. However, our study shows that the targeting tension is perceived as the least important challenge for marketers, probably because firms now observe that online media have been adopted by the vast majority of the market. In fact, older consumers now exhibit similar online buying habits as young people, and represent the fastest-growing segment of the population. Nevertheless, there is an important bias in targeting older customers. The digital marketing efforts of companies typically target younger customer segments with only 5% targeting 50+-aged consumers. Moreover, as shown by Porter and Donthu (2006), older but also less educated individuals have lower perceived ease of using the online channel, while older individuals also perceive more access barriers associated with the Internet. Our research outcomes suggest that, according to the respondents in our convenience sample, reaching older consumers is best achieved through integrated communication strategies that combine digital with traditional media. So, for example, the American Association of Retired Persons (AARP) has successfully targeted older readers through digital vehicles linked to "The Magazine". Beyond that, firms may instigate programs that help these specific segments to use new digital channels (Porter & Donthu, 2006), which may increase the perceived ease of use and reduce access barriers.

Tension 6: price transparency

The increasing price transparency has been a topic of investigation since the early days of Internet, and researchers have investigated price differences between offline and online retailers (e.g., Brynjolfsson & Smith, 2000). Already Brown and Goolsbee (2002) showed that prices of insurances available on comparison Web sites have decreased, while insurances not present at these Web sites remained to have similar prices. Similar findings have been reported in the car industry (Zettelmeijer, Morton, & Silva-Russo, 2005).

Remarkably, firms so far do not consider the presence of an increasing price transparency as an important challenge. This is surprising, as there is factual evidence illustrating that this price transparency in effect can have very strong consequences for industries. Especially in the current tight economic times, customers feel an even stronger pressure to find a good offer (Lamey, Deleersnyder, Dekimpe, & Steenkamp, 2007; Ou, de Vries, Wiesel, & Verhoef, 2014).

The increasing price transparency will mainly be an opportunity for companies that have succeeded to redevelop their business model (see Tension 1) in such a way that they can offer the best value to customers. These players are more likely to win, especially the new customer acquisition game. Indeed, some players such as Progressive have incorporated third-party aggregators/price comparison engines in their Web site to highlight their price advantage. Another strategy we observe in practice is that companies integrate forward and either start their "own" comparison engines or take over existing ones. For example, the largest Dutch insurance company ACHMEA recently acquired INDEPENDER which was a former independent comparison Web site for financial services[2]. This allows them to learn more about online customer and competitor behavior, and also to have a stronger influence on the customers and the market. The disadvantage is that these comparison engines might be no longer trusted, as they are not independent anymore, but part of large financial institutions.

Tension 7: automated interactions

Automated and online migrations present cost savings opportunities as well as risks to customer satisfaction and brand health. More specifically, migrating customers to online channels may create resistance and customer dissatisfaction, as customers may feel forced to use new channels (Reinders, Dabholkar, & Frambach, 2008). Carefully monitoring of the effects of automation on customer satisfaction and tools for personalizing the online experience are therefore key to defending brand health. In our survey, 45% of the respondents have a plan to fill this gap and mention "monitoring" as the key lever, whereas 41% mention personalization as a tactic to balance the efficiencies of automation with customer loyalty objectives. Retail banking examples show that targeted online migrations can actually increase retention, product penetration, customer lifetime value, and profit per individual customers (Gensler, Leeflang, & Skiera, 2012). Gensler et al. (2012) demonstrate how matching methods can be applied to decide which customers with which products can be migrated to the online retail bank channel. An example of a company which offers several value-added, personalized services to draw traffic and engage customers online is O_2 in the UK. They offer customers a free-of-charge calendar function to organize family life (such as updates, family messages, and family events). In addition, they offer "Bluebook" which offers free online storage for all mobile text messages, phones, contacts, wallpapers, etc., and the "Blueroom" which offers priority tickets for music, sports, comedy, and family entertainment.

Tension 8: online metrics

There is a widespread perception that online measures are not easily translated into financial impact, and that online metrics are not readily comparable to traditional metrics. This is illustrated in Table 4 which summarizes the challenges as they are perceived by the respondents in our sample. We observe that many efforts

[2] See http://www.bnr.nl/nieuws/beurs/197842-1112/verzekeraar-achmea-neemt-independer-over.

Table 4
Problems with online metrics (N = 777).

Not able to quantify the financial impact on the business	31%
Difficult to understand what these metrics measure	24%
Not directly comparable with the traditional metrics	23%
Don't help to identify the relevant non-financial, behavioral predictors in my business (e.g. repurchase rate)	23%
Not actionable	20%
Too many metrics, difficult to tell which ones matter most	18%
Too 'fluffy' and not grounded in tangible data	18%
Not detailed enough	11%
Too different from traditional metrics	9%

Table 5
Challenges to build up a strong analytical function (N = 777).

Constraints on funding and resources	10%
Lack of proper infrastructure and IT tools	34%
Lack of quality data to analyze	27%
Lack of internal leadership on analytics	27%
Constraints on time	26%
Difficulty in finding analytically talented and business-experiences individuals within our company	25%
Lack of company interest in analytics	19%
Difficulty in attracting the appropriate candidates	16%
Inability of our HR department to identify the required skills in potential candidates	10%

Table 6
Solutions to Analytical Talent Gap (N = 184).

Hiring more analytically skilled individuals in the marketing and other related functions	24%
Including analytical capabilities as part of the skill requirements for all relevant new hires	37%
Creating a department dedicated to advances analytics that reports directly to senior management	28%
Outsourcing analytically heavy tasks to appropriate partners (e.g. consultants, analytical services)	53%
Offering employees incentives for completing analytical training programs	17%

are taken to measure the effects of online media, such as search engine advertising (SEA) (Zenetti, Bijmolt, Leeflang, & Klapper, 2014) and paid search advertising (Manchanda, Dubé, Goh, & Chintagunta, 2006; Rutz & Bucklin, 2011; Rutz & Trusov, 2011). Srinivasan, Vanhuele, and Pauwels (2010) propose new "mindset" metrics or consumer metrics. These metrics can be used to compare the effectiveness of digital channels with traditional channels, creating a universal metric that allows for direct comparison of financial outcomes between traditional and online media. About 50% of our respondents believe that we need such a "common currency" to address this challenge. Another solution to reduce the gap between the response side and the demand side is to train managers on how to use and interpret online metrics and key performance indicators (53% of all respondents).

One specific challenge with online marketing is the attribution of specific marketing actions. Firms are attracted with multiple online and offline media and channels to online and offline stores. Companies therefore often wonder what the relative contribution of a specific measure was on sale in its respective channels.

Frequently, companies use the last-click method. Hereby, the sale is attributed to the last medium used (or observed). However, this ignores that each customer has his/her specific customer journey, in which he/she is confronted with multiple stimuli. Typically, companies only observe the final part of this journey (i.e., the click on a banner). Attribution of the sale to this last click will presumably overvalue the effect of this last click. This problem mainly occurs with more individual-level analyses. One solution is to analyze the data on a more aggregate level. Within marketing science, multiple studies have now been executed linking marketing expenditures in multiple channels and media to both online and offline sales and profits, using econometric models (Haan de, Wiesel, & Pauwels, 2013). Another difference between online and offline media spend is that in contrast with traditional advertising (where a negotiated amount is paid for a commercial), in online media advertising costs are only paid when there is a click on the link to the Web site (Abou Nabout, Skiera, Stepanchuk, & Gerstmeier, 2012). Moreover, to some extent one tends to compare apples and oranges. Automatically, mass advertising will have a much lower elasticity than SEA, as mass advertising has a role in the early phases of the sales funnel (i.e., creating awareness), while SEA is used by customers in a much later phase (i.e., the search phase with direct goals to sales conversion). Models and approaches are required that can handle these differences. Importantly, we observe an increasing interest in this due to the increasing availability of data.

Organization and capabilities

Tension 9: talent gap

Increased data complexity is creating a digital talent gap. There are estimates that 440,000–490,000 of analytically trained people will be needed in the USA in 2018 to analyze customer data, create digital advertisements, develop Web sites, and perform statistical analyses (Manyika et al., 2011). The supply amounts, however, only to 300,000 of these talents. Hence there is a 50–60% gap relative to the 2018 supply. Other gaps related to building analytical capabilities are shown in Table 5.

It is remarkable that *only 4%* of our respondents articulate that they have the required capabilities to manage their business effectively. Table 6 summarizes the tactics and strategies used to manage the talent gap in analytical capabilities. Hiring more analytically skilled individuals is seen as a strategic asset but companies are still forced to outsource analytically heavy tasks to appropriate partners/consultants. We thus observe that companies increasingly aim to hire marketing intelligence specialists. These employees are not solely sourced from MBA programs, but many companies (e.g., Capital One) also seek trained statisticians, mathematicians, and econometricians. One challenge is that these employees have excellent quantitative and analytical skills, but that they lack a strong background in marketing which can result in problems in the interface between marketing and analytics. The latter is rather important for developing successful fact-based marketing propositions (Verhoef & Lemon, 2013). What many companies do to build up a strong analytical function is to train people on the job by providing specific marketing intelligence traineeships.

Outsourcing to external agencies is another solution. Whereas in the past sophisticated intelligence capabilities were mainly offered by market research agencies and data providers, such as AC Nielsen, GfK, and Experian, we now observe that major consulting companies are offering dedicated analytical solutions to companies. Beyond that, we observe that dedicated smaller agencies are offering these solutions. One particular example is DunnHumby which became famous for their path-breaking work at Tesco UK and now serves major clients globally in the retailing and food industry (Humby et al., 2008). As analytical capabilities become an important strategic asset for companies, fully outsourcing analytical skills to external partners might be a dangerous strategy, though. It is therefore advisable for most companies on some level to invest in building their own capabilities, hiring employees that

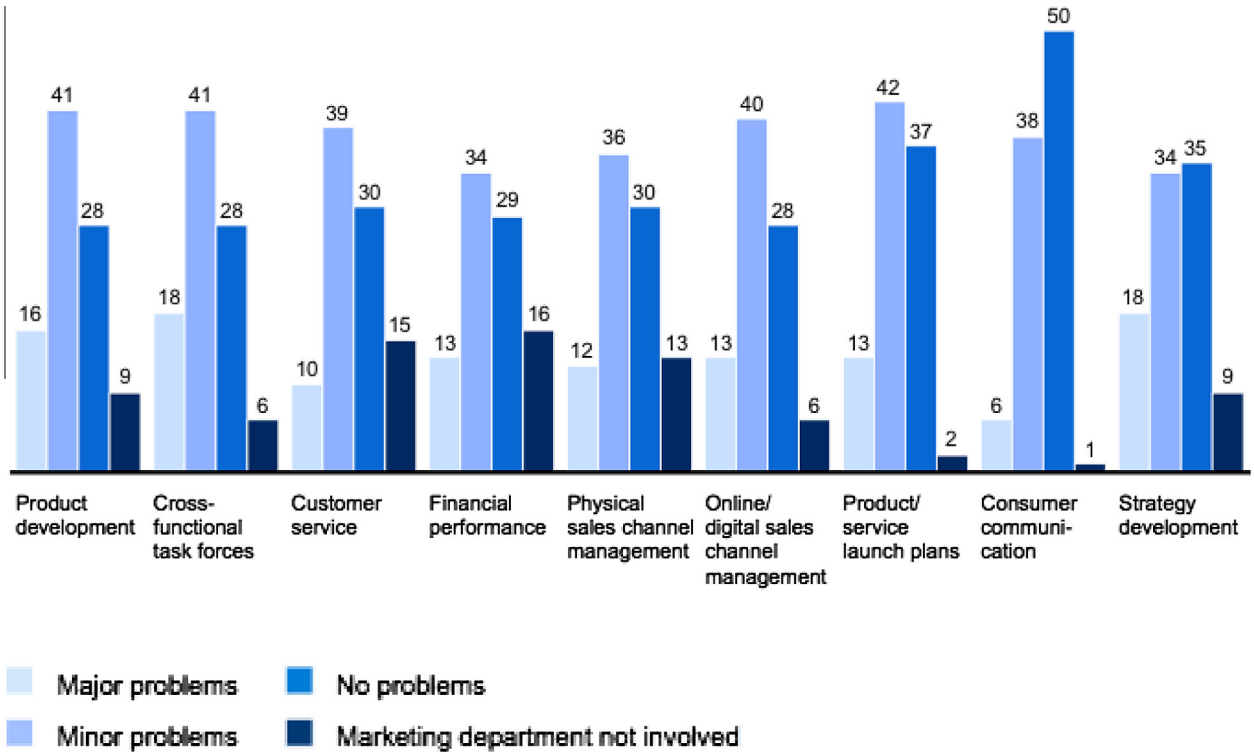

Fig. 5. Role ambiguity and misalignment between marketing and other departments.

want to have the "sexiest job of the 21st century" (Davenport & Patil, 2012).

The analytical skills tension not only challenges companies, but also business schools around the globe. Traditionally, MBA programs have had a strong focus on qualitative reasoning using case studies, with usually limited attention to quantitative skills and decision making. The increasing prevalence of big data and accompanying importance of data in many business areas (i.e., supply chain, marketing, innovation) requires a stronger focus on analytical skill development and the use of data in (marketing) decision making. Especially as we show in this study as (digital) data becomes so strongly integrated in many digital marketing propositions.

Tension 10: organizational challenges

Digital marketing requires that organizations are designed in a different manner. This challenge is considered as a moderate tension (see Fig. 3), probably because companies now mainly focus on the substantive issues providing direct business opportunities. The organization concerns a structural change which becomes a prevalent issue when companies become more digitally equipped. In our research we observe, however, that many companies are not ready to reduce the gap between the more classical organizations and the organizations that are ready to address the challenges which are inherent to digital marketing (Fig. 2). American Express CMO, John Hayes, expresses this as follows: "I have not met anybody... who feels they have the organization completely aligned with where this digital revolution is going, because it is happening so fast and so dramatically. Marketing is teaching so many parts of the company now. We need to organize it in a way that starts to break down the traditional silos in businesses" (Hayes, 2011).

Thus we are now arriving in an era where marketing should be pervasive and managed across functional boundaries. Here we are confronted with tensions between marketing and other departments. Well-known cross-functional coordination problems exist between marketing and sales, marketing and research and development, marketing and finance, and so on (Homburg & Jensen, 2007; Homburg, Jensen, & Krohmer, 2008; Leenders & Wierenga, 2008; Verhoef & Pennings, 2012). In our survey we measured these problems. The outcomes are shown in Fig. 5.

We deduce from Fig. 5 that most problems occur in the cooperation between marketing and product development, the participation of marketing in cross-functional task forces, customer service, online/digital sales channel management, customer communication and strategy development. More than 60% of the respondents to our survey believe that "designing clear cross-functional processes and governance", clarifying the roles that given functions play in overall marketing strategies (56%), and developing and implementing key performance indicators shared by two functions (42%) are key to fill this organizational gap. Importantly, stronger cooperation between marketing and other functions benefits companies' performance (e.g., through more successful new product introductions). One potential danger is that marketing becomes everyone's responsibility, while nobody feels responsible, leading to less coordinated marketing strategies (Verhoef & Leeflang, 2009).

Conclusion

We have entered a new era in which digital media and channels are rapidly becoming ubiquitous. Based on our study among 777 marketing executives across the globe, we identified four major marketing challenges in this new era which seem to be the most prevalent (see Fig. 3).

1. The use of customer insights and data to compete effectively;
2. The threatening power of social media for brands and customer relationships;

3. The omnipresence of new digital metrics and the subsequent assessment of the effectiveness of (digital) marketing activities; and
4. The increasing talent gap in analytical capabilities within firms.

Interestingly, three of these major challenges (customer insights, metrics, and talent gap) are closely related. They all involve data and the underlying capabilities for analyzing data, providing firms a deeper and more actionable understanding on how marketing can contribute to a stronger performance in a digital environment. The most important solution seems to be that marketers should create stronger capabilities in digital marketing analytics. Marketers and marketing departments not familiar with (analyzing) digital data, digital metrics, digital customer journeys, etc. could soon begin to struggle and their functional responsibilities may be assumed by more digitally oriented functions, such as IT. Moreover, with a stronger empowerment of customers resulting from the increasing presence of social media, the marketer focusing on brand building through traditional media only should soon discover that these strategies will become less effective and that brands are more and more defined by customers than by the marketer's positioning statement. In sum, we believe that our study suggests that marketing needs to adapt to the new digital era by strongly focusing on (1) quantitative skill development, (2) fact-based proposition development, and (3) developing brand and customer relationship strategies taking advantage of the increasing engagement in brands of customers through social media.

Consequences for (marketing) research

The increasing prevalence of digital marketing also poses important questions for management and marketing research. The study of these questions is of utmost importance for our discipline. We will elaborate on pressing issues with regard to the four most important tensions:

Customer insights

With regard to research on customer insights, in the past we have seen an increasing rise in studies analyzing individual customer data using the data available in customer relationship management databases. As marketing scientists we have been able to develop many models that are able to explain and predict churn, cross-buying, usage, and customer lifetime value (Verhoef & Lemon, 2013). These studies usually analyze data from one single source with data from individual customers. With the increasing presence of more data, databases from multiple sources will be developed consisting of data at multiple aggregation levels (e.g., customer, firm, market, and region) (e.g., Feit et al., 2013). This will result in more complicated models. Future research should focus on the development of these models. Furthermore, the increasing presence of non-structured data (i.e., text data), will pose challenges for marketing modeling (Lee & BradLow, 2011). More attention should be given to the inclusion of these data in models. Finally, we observe a larger use of network data (e.g., Haenlein & Libai, 2013). We believe the inclusion and study of these data using multiple methodologies (i.e., agent-based models), will remain very important in the coming years to derive strong customer insights (Goldenberg, Libai, Moldovan, & Muller 2007).

Social media

The upcoming of social media has already gained strong attention within marketing science. Hereby, multiple researchers have started to understand the impact of social media and specifically user-generated content on sales and firm value (e.g., Tirunillai & Tellis, 2012). Future research should continue to elaborate on this. Specifically, it would be interesting to investigate the impact of social media on individual customer behavior, such as customer loyalty. Despite this attention for the effects of social media, there is limited attention for the effective use of social media within marketing. Pressing questions requiring more research are: Should firms always use social media or should they be very selective? How should they manage risks surrounding social media? How should firms react on negative customer actions in social media? What are the best metrics to evaluate social media? In general, social media will be a relevant and important topic for academic research in the coming years.

New metrics

One of the main problems is the increasing availability of new metrics (e.g., Mintz & Currim, 2013). The most important task for marketing researchers in the coming years will be to understand the importance of these metrics. Should marketers collect every metric? Or can they focus on just a few? Do specific metrics impact marketing and firm performance? For example, do likes of brands on social media have an impact on brand attitudes, market share, and sales? An important issue is whether it will be possible to derive a few single digital metrics that function as a kind of overarching metric. For example, marketing research firms are developing digital sentiment indices for brands. But how good are these indices and can these metrics predict future performance? Importantly, for marketing education the strong development of metrics also has implications. How can MBA students grasp all these metrics and understand the relevance of each of these new metrics?

Analytical talent gap

Our final most important digital marketing challenge concerns the analytical talent gap. While marketing researchers have considered capabilities of front-line service employees, sales managers, salesmen, etc., specific studies focusing on capabilities of successful marketing analysts are lacking. Given the increasing importance of data and the presumed positive effect of marketing intelligence capabilities on performance (Germann, Lilien, & Rangaswamy, 2012), it is important to know how firms can build these functions and which employees they should attract. Also the interface between marketing analytics and the marketing function requires additional attention. How can marketing analysts work effectively to improve their impact on the marketing function? For firms it is also important to understand how they will be able to compete with other analytical oriented functions (i.e., finance, operations) to attract well-trained future employees.

In sum, we believe digital marketing poses important challenges for both firms and marketing researchers. Especially the increasing prevalence of data will induce strong opportunities for market scientists for research in this area. This study provides important directions for research on which issues they should focus.

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Appendix Description. of sample (*N* = 777)

Firm focus	Percentage (%)	Company size	Percentage (%)
Consumer markets	23.1	1–49 employees	20.7
Business-to-business	54.8	50–499 employees	19.4
Other	22.1	500–10.000 employees	27.5
		>10.000 employees	32.4
Industry	**Percentage (%)**	**Industry**	**Percentage (%)**
Business/legal/professional Services	19.4	High Tech / Telecom	16.7
Financial	11.2	Manufacturing	15.5
Other	37.1		

References

Abou Nabout, N., Skiera, B., Stepanchuk, T., & Gerstmeier, E. C. (2012). An analysis of the profitability of fee-based compensation plans for search engine marketing. *International Journal of Research in Marketing, 29*(1), 68–80.

Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing, 61*(3), 38–53.

Albuquerque, P., Pavlidis, P., Chatow, U., Chen, K. Y., & Jamal, Z. (2012). Evaluating promotional activities in an online two-sided market of user-generated content. *Marketing Science, 31*(3), 406–432.

Berry, L. L., Bolton, R. N., Bridges, C. H., Meyer, J., Parasuraman, A., & Seiders, K. (2010). Opportunities for Innovation in the Delivery of Interactive Retail Services. *Journal of Interactive Marketing, 24*(2), 155–167.

Bolton, R. N., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabday, S., Gruber, T., Loureiro, Y. K., & Solnet, D. (2013). Understanding generation Y and their use of social media: A review and research agenda. *Journal of Service Management, 24*(3), 245–267.

Brown, J. R., & Goolsbee, A. (2002). Does the Internet make markets more competitive? *Journal of Political Economy, 110*(3), 481–507.

Brynjolfsson, E., & Smith, M. D. (2000). Frictionless commerce? A comparison of internet and conventional retailers. *Management Science, 46*(4), 563–585.

Business Monitor Intelligence (2012). Subscription service on telecom KPIs. Report July 2012.

Chen, X., Chen, Y., & Xiao, P. (2013). The impact of sampling and network topology on the estimation of social intercorrelations. *Journal of Marketing Research, 50*(1), 95–110.

Chen, Y., Fay, S., & Wang, Q. (2011). The role of marketing in social media: How online consumer reviews evolve. *Journal of Interactive Marketing, 25*(2), 85–94.

Cheredar, T. (2012). At peak, Amazon sold a whopping 306 items per second in 2012. Venturebeat, December 27, 2012; accessed January 19, 2013 [WWW.page]. URL http://venturebeat.com/2012/12/27/at-peak-amazon-sold-a-whopping-306-items-per-second-in-2012.

Clay, K. (2012). Amazon has best holiday season ever, selling 306 items per second. Forbes Web site, December 27, 2012; accessed January 19, 2013 [WWW.page]. URL http://www.forbes.com/sites/kellyclay/2012/12/27/amazon-has-best-holiday-seasonever-selling-306-items-per-second.

Davenport, T. H. (2006). Competing on Analytics. *Harvard Business Review, 48*(1), 99–107.

Davenport, T. H., Barth, P., & Bean, R. (2012). How "Big Data" is different. *MIT Sloan Management Review, 54*(1), 22–24.

Davenport, T. H., & Patil, D. J. (2012). Data scientist: the sexiest job of the 21st century. *Harvard Business Review, 90*(10), 70–77.

Day, G. S. (2011). Closing the marketing capabilities gap. *Journal of Marketing, 74*(5), 183–195.

de Vries, L., Gensler, S., & Leeflang, P. S. H. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing, 26*(2), 83–91.

Deighton, J. (2007). *Dove: Evolution of a Brand*. Boston, MA: Harvard Business School Press.

Deighton, J., & Kornfeld, L. (2009). Interactivity's unanticipated consequences for marketers and marketing. *Journal of Interactive Marketing, 23*(1), 4–10.

Dholakia, U. M., & Durham, E. (2010). One café chain's Facebook experiment. *Harvard Business Review, 88*(3), 26.

Eck van, P. S., Jager, W., & Leeflang, P. S. H. (2011). Opinion leaders' role in innovation diffusion: A simulation study. *Journal of Product Innovation Management, 28*(2), 187–203.

Fader, P. S., & Winer, R. S. (2012). Introduction to the special issue on the emergence and impact of user-generated content. *Marketing Science, 31*(3), 369–371.

Feit, E. M., Wang, P., Bradlow, E. T., & Fader, P. S. (2013). Fusing aggregate and disaggregate data with an application to multiplatform media consumption. *Journal of Marketing Research, 50*(3), 348–364.

Fisch, K. (2010). Did you know 3.0? March 2, 2010; accessed January 19, 2013; [WWW.page]. URL http://www.youtube.com/watch?v=jp_oyHY5bug.

Friedman, J. (2010). Sadly, Blockbuster outlives its usefulness. Marketwatch, September 23, 2010; accessed January 23, 2013; [WWW.page]. URL http://articles.marketwatch.com/2010-09-23/commentary/30689665_1_blockbuster-convenience-american-businesses.

Gensler, S., Leeflang, P. S. H., & Skiera, B. (2012). Impact of online channel use on customer revenues and costs to serve: Considering product portfolios and self-selection. *International Journal of Research in Marketing, 29*(2), 192–201.

Germann, F., Lilien, G. L., & Rangaswamy, A. (2012). Performance implications of deploying marketing analytics. *International Journal of Research in Marketing, 30*(2), 114–128.

Godes, D., & Silva, J. C. (2012). Sequential and temporal dynamics of online opinion. *Marketing Science, 31*(3), 448–473.

Goldenberg, J., Libai, B., Moldovan, S., & Muller, E. (2007). The NVP of bad news. *International Journal of Research in Marketing, 24*(3), 186–200.

Haan de, E., Wiesel, T., & Pauwels, K. (2013). *Your wingman for online revenues: Forms of advertising that make a difference*. Working Paper: University of Groningen.

Haenlein, M., & Libai, B. (2013). Targeting revenue leaders for a new product. *Journal of Marketing, 77*(3), 65–80.

Hayes, J. (2011). How we see it: Three senior executives on the future of marketing. *McKinsey Quarterly, 7*, 1–10.

Hennig-Thurau, T., Malthouse, E. C., Friege, C., Gensler, S., Lobschat, L., Rangaswamy, A., & Skiera, B. (2010). The impact of new media on customer relationships. *Journal of Service Research, 13*(3), 311–330.

Homburg, C., & Jensen, O. (2007). The thought worlds of marketing and sales: Which differences make a difference? *Journal of Marketing, 71*(3), 124–142.

Homburg, C., Jensen, O., & Krohmer, H. (2008). Configurations of marketing and sales: A taxonomy. *Journal of Marketing, 72*(2), 133–154.

Humby, C., Hunt, T., & Philips, T. (2008). *Scoring points: How Tesco continues to win customer loyalty*. London: Kogan Page Limited.

Husson, T., Ask, J. A., Overby, C. S., Parrish, M., Mullen, A., McCarthy, J. C., Roberge, D., & Kwan, E. (2013). 2013 Mobile trends for marketers. *Forrester*.

IBM Institute for Business Value (2011). From stretched to strengthened – Insights from the Global Chief Marketing Officer Study. IBM CMO C-suite Studies.

Kaplan, M., & Haenlein, M. (2010). Users of the World Unite. *The Challenges and Opportunities of Social Media, Business Horizons, 53*, 59–68.

Kee, R. (2008). The sufficiency of product and variable costs for production-related decisions when economies of scope are present. *International Journal of Production Economics, 114*(2), 682–696.

Kumar, V., Chattaraman, V., Neghina, C., Skiera, B., Aksoy, L., Buoye, A., & Henseler, J. (2013). Data-driven services marketing in a connected world. *Journal of Service Management, 24*(3), 330–352.

Lamey, L., Deleersnyder, B., Dekimpe, M. G., & Steenkamp, J. B. E. M. (2007). How business cycles contribute to private-label success: Evidence from the United States and Europe. *Journal of Marketing, 71*(1), 1–15.

Lee, T. Y., & BradLow, E. T. (2011). Automated marketing research using online customer reviews. *Journal of Marketing Research, 48*(5), 881–894.

Leenders, M. A. A. M., & Wierenga, B. (2008). The effect of the marketing R&D interface on new product performance. The critical role of resources and scope. *International Journal of Research in Marketing, 25*(1), 56–68.

Lemke, F., Clark, M., & Wilson, H. (2011). Customer experience quality: An exploration in business and consumer contexts using repertory grid technique. *Journal of the Academy of Marketing Science, 39*(6), 846–869.

Manchanda, P., Dubé, J. P., Goh, K. Y., & Chintagunta, P. K. (2006). The effect of banner advertising on Internet purchasing. *Journal of Marketing Research, 43*(1), 98–108.

Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., Byers, A.H. (2011). McKinsey Report: Big data: The next frontier for innovation, competition, and productivity. [WWW.page]. URL www.mckinsey.com/.../Big%20Data/MGI_big_data_full_report.ashx.

Mayzlin, D., & Yoganarasinhan, H. (2012). Link to success: How blogs build an audience by promoting rivals. *Management Science, 58*(9), 1651–1668.

McAfee, A. & Brynjolfsson, E. (2012). Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy, MIT center for Digital Business.

Mintz, O., & Currim, I. S. (2013). What drives managerial use of marketing and financial metrics and does metric use affect performance of marketing-mix activities? *Journal of Marketing, 77*(2), 17–40.

Moe, W. M., & Schweidel, D. A. (2012). Online product opinions: Incidence, evaluation, and evolution. *Marketing Science, 31*(3), 372–386.

Moe, W. M., & Trusov, M. (2011). The value of social dynamics in online product ratings forums. *Journal of Marketing Research, 48*(3), 444–456.

Neslin, S. A., & Shankar, V. (2009). Key issues in multichannel customer management: Current knowledge and future directions. *Journal of Interactive Marketing, 23*(1), 70–81.

Nielsen (2007) Word-of-Mouth the most powerful selling tool, Nielson Global Survey. Available on http://www.acnielsen.co.th/news/20071016.shtml.

Nitzan, I., & Libai, B. (2011). Social effects on customer retention. *Journal of Marketing, 75*(6), 24–38.
Onishi, H., & Manchanda, P. (2012). Marketing activity, blogging and sales. *International Journal of Research in Marketing, 29*(3), 221–234.
Ou, Y. C., de Vries, L., Wiesel, T., & Verhoef, P. C. (2014). The role of consumer confidence in creating customer loyalty. *Journal of Service Research*. in press.
Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research, 59*(9), 97–1006.
Rahmandad, H., & Sterman, J. D. (2008). Heterogeneity and network structure in the dynamics of diffusion: Comparing agent-based and differential equation models. *Management Science, 54*(5), 998–1014.
Reinders, M. J., Dabholkar, P. A., & Frambach, R. T. (2008). Consequences of forcing consumers to use technology-based self-service. *Journal of Service Research, 11*(2), 107–123.
Rigby, D. K. (2011). The future of shopping. *Harvard Business Review, 89*(12), 64–75.
Risselada, H., Verhoef, P. C., & Bijmolt, T. H. A. (2014). Dynamic effects of social influence and direct marketing on the adoption of high-technology products. *Journal of Marketing*. in press.
Rutz, O. J., & Bucklin, R. E. (2011). From generic to branded: A model of spillover in paid search advertising. *Journal of Marketing Research, 48*(1), 87–102.
Rutz, O. J., & Trusov, M. (2011). Zooming in on paid search ads: A consumer-level model calibrated on aggregated data. *Marketing Science, 30*(5), 789–800.
Shankar, V., Venkatesh, A., Hofacker, C., & Naik, P. (2010). Mobile marketing in the retailing environment: Current insights and future research avenues. *Journal of Interactive Marketing, 24*(2), 11–120.
Snijders, C., Matzat, U., & Reips, U. D. (2012). Big data : Big gaps of knowledge in the field of internet science. *Journal of Internet Science, 7*(1), 1–5.
Sorescu, A., Frambach, R. T., Singh, J., Rangaswamy, A., & Bridges, C. (2011). Innovations in retail business models. *Journal of Retailing, 87S*(1), 3–16.
Srinivasan, S., Vanhuele, M., & Pauwels, K. (2010). Mindset metrics in market response models: An integrative approach. *Journal of Marketing Research, 47*(4), 672–684.
Teo, T. S. H. (2001). Demographic and motivation variables associated with Internet usage activities. *Internet Research, 11*(2), 125–137.
Tirunillai, S., & Tellis, G. J. (2012). Does chatter really matter? Dynamics of user-generated content and stock performance. *Marketing Science, 31*(2), 198–215.
Van Belleghem, S., Eenhuizen, M., Veris, V. (2011). Social media around the world 2011, InSites Consulting.
van Bruggen, G. H., Antia, K. D., Jap, S. D., Reinartz, W. J., & Pallas, F. (2010). Managing marketing channel multiplicity. *Journal of Service Research, 13*(3), 331–340.
Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: theoretical foundations and research directions. *Journal of Service Research, 13*(3), 253–266.
Verhoef, P. C., Beckers, S. F. M., & van Doorn, J. (2013). Understand the perils of cocreation. *Harvard Business Review, 91*(9), 28.
Verhoef, P. C., & Leeflang, P. S. H. (2009). Understanding marketing department's influence within the firm. *Journal of Marketing, 73*(2), 14–37.
Verhoef, P. C., & Lemon, K. N. (2013). Successful customer value management: Key lessons and emerging trends. *European Management Journal, 31*(1), 1–16.
Verhoef, P. C., & Pennings, J. M. E. (2012). The marketing finance interface: An organizational perspective. In S. Ganesan & S. S. Bharadwaj (Eds.), *Handbook of Marketing and Finance*. Cheltenham, UK: Edward Elgar.
Verhoef, P. C., Reinartz, W. J., & Krafft, M. (2010). Customer engagement as a new perspective in customer management. *Journal of Service Research, 13*(3), 247–252.
Williamson, D.A. (2011). Worldwide social network ad spending: A rising tide. eMarketer.com.
Winer, R. (2009). New communications approaches in marketing: Issues and research directions. *Journal of Interactive Marketing, 23*(2), 108–117.
Yoganarasimhan, H. (2012). Impact of social network structure on content propagation: A study using YouTube data. *Quantitative Marketing and Economics, 10*(1), 111–150.
Zenetti, G., Bijmolt, T. H. A., Leeflang, P. S. H., & Klapper, D. (2014). Search engine advertising effectiveness in a multimedia campaign. *International Journal of Electronic Commerce*. in press.
Zettelmeijer, F., Morton S. J., & Silva-Russo, J. (2005). How the Internet lowers prices. Evidence from match survey and transaction data. NBER Working Paper. 11515.
Zhang, K., Evgeniou, T., Padmanabhan, V., & Richard, E. (2012). Content contributor management and network effects in a UGC environment. *Marketing Science, 31*(3), 433–447.