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Mario V. González Fuentes
Trinity University, mgonza13@trinity.edu

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The organization of the future and the marketing function: Marketers' competencies in the era of information technology.

Mario V. Gonzalez-Fuentes, Ph.D.
Department of Business Administration
Trinity University

Abstract

The past two decades –and the technology advancements experienced throughout them- have left marketers with a new context that has provided new business opportunities. This new context has prompted a change in the focus of the marketing function and demanded a shift in marketing imperatives and competencies. This chapter provides a comprehensive review of the technological changes experienced by the marketing function in a company, as documented by both scholars and practitioners. It also provides a thorough discussion of the ongoing academic debate regarding the new set of technical skills that have defined employability in the marketing circles for the past couple of decades and the challenges ahead for future professionals and executives.

Introduction

The advent of new technologies like Internet and powerful computing capabilities in hardware and software has opened opportunities to expand the marketer's portfolio of tools. For example, the commercialization of Internet provided companies with a permanently open window to showcase their offerings to customers around the world. Similarly, being able to track online shopping behavior allowed for the emergence of machine learning algorithms to refine recommendations by online retailers. Improved storage capabilities have fostered the appearance of Costumer Relationship Management (CRM) software and solutions to help companies manage their interactions with clients at every single point of contact.

New opportunities for companies have emerged as a result of these new technological capabilities; particularly in the way they interact with customers and how they use the information resulting from these interactions. This has prompted a shift in marketing focus and strategy. Away from a product-based approach to a customer-centric one, from a transactional perspective to one where relationships are nurtured with clients. A dominant paradigm has emerged as a result of these changes that sees the marketing function as a continuous social and economic process in which intangible resources are paramount (Vargo & Lusch, 2004). However, these opportunities brought together new challenges for marketing departments across all industries. At all ranks of positions a gradual and continuous, but also substantial, revision of competencies and skills has occurred.

This chapter addresses the most important advances in information technology and artificial intelligence as they have impacted the practice of marketing among companies. More particularly, this chapter explores the way these changes have shifted the strategic vision of marketing departments and the needs for new skills and competencies that were spawned by it. Thus, this chapter has two objectives. The first is to provide a comprehensive review of the technological changes experienced by the marketing function in a company, as documented by both scholars and practitioners. This will lay the basis for readers to understand the technological framework in which modern organizations base their marketing strategies. The second goal is to provide a rich and thorough discussion of the ongoing debate in the literature regarding the new set of technical skills that have defined employability in the marketing circles for the past couple of decades and the challenges ahead for future professionals and executives.

The next three sections address the first of this chapter's objectives and discuss the recent technological developments in three waves: the commercialization of Internet, the surge of social media and the era of big data and artificial intelligence. For each of these three waves, an analysis of the change in marketing's strategic focus is offered. A fourth section addresses the second objective by providing an examination of the evolving notion of interactivity under the new technological paradigm, connecting it with the new imperatives in skills and competencies required in marketing positions.

The Internet of Things: The rise of Tradigital Marketing

During the first half of the 1990s, marketing professionals faced the challenge to learn "the Internet of things" in order to adapt their strategies to this new media form. The commercialization of Internet, through the World Wide Web, provided the public with instant access to a vast array of information about a myriad of topics and interests (Roberts and Zahay, 2012). Concepts and terms such as e-mail, browsers and webpages became common currency in conversations all over the world. If you had a computer and a telephone, you had access to a wealth of information about a wide array of topics.

One of the first opportunities that the new technology provided for companies and marketers was another outlet where people could learn about their existence and the products or services they were offering. A company's website became the virtual brochure of a firm's activities and whereabouts. In other words, the emergence of websites and webpages provided a virtual space for companies to provide information readily available every day at every hour to consumers without virtually any physical and geographical boundaries. This significantly influenced the way consumers experience their buying-decision process, which entails the steps and activities a person goes through when confronted with an unsatisfied or poorly satisfied need (Frambach et al., 2007). One of the first steps is the search for information and the evaluation of the alternatives in the market. This implied that marketing tactics and campaigns had to be ready to be changed more frequently than in the past. The result of this was a surge in online advertising and a need for creative talent that was able to adapt marketing strategies to online formats (Evans, 2009).

However, it can be argued that the Internet changed the way people communicated with one another. More particularly, it made it very easy for people to connect and interact with others. No more long distances or having to physically displace to where our relatives or friends were in order to establish an exchange of ideas or a conversation. We were able to, almost instantaneously, contact somebody or, at least, be sure they will receive our note or message next time they were online.

Moreover, the idea of leveraging consumers' digital footprint became relevant in light of the new possibilities of interaction that the new technology facilitated. Online ads, such as banners, interstitials or pop-ups were able to track the number of clicks received and whether or not the advertisement effort resulted in a purchase-related action. Internet Protocol (IP) addresses permitted websites to track down the places where most visits landed from, the different pages explored per visit, and the time spent in each of them. In addition, web browsers facilitated companies with information regarding the words used by people when looking for information about products or services and that ultimately served as clues to find their websites (Evans, 2008).

In this sense, Internet facilitated what companies such as AC Nielsen started with their TV ratings[1] but in a larger and richer scale (Silk et al., 2001). Before the popularity of the Internet, households volunteered to have a device attached to their television sets that would track time spent watching television at different times of the day. These devices recorded channels and specific shows watched and behaviors such as switching programs during advertisements, etc. However, as households' consumption of television entertainment evolved, the challenges to track households' behaviors piled up and extended beyond the prevalent technology limits. For instance, there was no way to know whether a family that did not switch channels when advertisements were shown was actually paying attention to these ads. They could alternatively take the advantage to read a book or a magazine, cook, and visit the restroom or talk, among other options. In addition, and as the number of television sets per household grew up in society, the assumption that by tracking the usage of one television one could learn about the household patterns of media entertainment consumption was no longer valid or, in other words, hard to believe. Some part of the family may have been watching other program –and thus, exhibiting other type of behavior- in a different television set that was not being monitored. This also meant not being sure of how many people were exposed to a specific campaign or advertising effort. With Internet initial usage in personal

[1] http://www.nielsen.com/us/en/solutions/measurement/television.html

computers, media analysts know one thing for sure: the person's eyes are on the screen in front of them.

The Internet was so disruptive not only in the real world but also in the academic circles. Some theoretical concepts and ideas learned in the area of marketing had to accommodate changes, such as the introduction of the category "Interactive Marketing" to the list of tools of Non-personal (Mass) Communications to distinguish it from Direct Marketing (Deighton, 1996). Among practitioners the use of the term *Tradigital Marketing* started getting traction as a way to distinguish this approach from the traditional paradigm (Tuten & Solomon, 2015).

Going viral: The power of social media

In 2004, right after the launch of Facebook, it was evident that another challenge had arrived. Its name was social media. The widespread use of Internet, as well as the larger volume of information available through the World Wide Web, facilitated the formation of online communities. More particularly, the ability to find people online with the same interests, preferences, and opinions gave rise to the organic and voluntary grouping of users in different platforms such as message boards and forums (van Dijck, 2013). The emergence of social media highlighted one phenomenon that redefined marketer's digital agendas permanently: the horizontal revolution (Tuten and Solomon, 2015).

As it was discussed in the previous section, companies initially adopted Internet as a new channel through which they could expand their communication tactics while leveraging some of its interactive features. However, these tactics were still based in the traditional top-down model, that is, information flowed vertically from organizations to people (Mangold and Faulds, 2009). As people started forming communities online, they also started exchanging and sharing information among themselves, in a horizontal fashion. This represented a challenge for companies, namely they were not in full control of the message transmitted to their audiences (Berthon, Pitt, and Campbell, 2008). Moreover, it appeared that customers were increasingly interested not only in participating in the exchange of information that was taken place but also in the purchase-decision process of other customers through their opinions and advice.

The phenomenon of the horizontal revolution tipped off in part thanks to technological advancements in the area of connectivity (Bruce and Solomon, 2013). Wireless modems became the norm and the idea of needing a phone connection to use Internet quickly turned out to be obsolete. The introduction of new devices, such as smartphones and tablets, allowed people to be online and connected to other people more frequently without sacrificing mobility.

The formation of organic online communities quickly evolved into the concept of social networks, that is, virtual spaces where we could stay in touch with our social circles. Social platforms such as Facebook and Twitter successfully emerged as leaders after outlets like MySpace failed to gain traction (Boyd and Ellison, 2007). The network effects enjoyed by these platforms significantly determined their rapid penetration across the world (van Dijck, 2013). In other words, everybody wanted to belong to these social networks because everybody was part of them.

The surge of the Internet as a popular source of information and entertainment, and the emergence of social networks combined to produce the phenomenon of the *second screen*. People started interacting with other devices while watching television which was, until then, the predominant channel used by people to satisfy their entertainment needs at home (Giglietto and Selva, 2014). Empirical studies have identified the widespread use of social media as a catalyst for the emergence of mobile devices, in particular, as second screens for televisions (Lochrie and Coulton, 2011). No longer did viewers have to wait until the next morning to share with friends, colleagues, or classmates and discuss the last episode of their favorite show. They could now do it instantly, in real time, as events were unfolding, with as many people as they wanted.

The implication for marketers was that their efforts had to be more responsive and engaging. A significant number of studies appeared to indicate that the old marketing adage "the customer is king" was truer than ever and more importantly, that practitioners had only scratch the surface of this adage in the past. Customers wanted to be connected with other customers (Hannah et al., 2011); be engaged by brands and products (Wallace et al., 2014); and, their opinions to be taken into account (Cambria et al., 2013).

As a result of these trends, content became a key element in companies' online marketing strategies (Rowley, 2008). Content was the material used to attract people to form ever-growing groups with interests in common, or communities. In this sense, the *push* strategy that companies had been using traditionally, even with the outset of Internet and the popularity of online advertising, gradually shifted focus to tactics promoting an attraction orientation, also referred to as *pull* strategies. Good and engaging content attracts inbound traffic; attention is then gained via interactivity with content and users which, in turn, promotes sharing and participation (Kilgour et al. 2015; Campbell et al., 2011). Social networks became one of the most important communication channels for companies and the marketing function embraced concepts like content management and creation, blogging and micro blogging, interactive multimedia, and viral marketing, among others (Ho and Dempsey, 2010).

These new opportunities came also with new challenges. One of them was the fragmentation of audiences that came with the multiplicity of devices (Webster and Ksiazek, 2012). The image of the whole family gathered around the only television set owned by the household is light years apart from the current situation in modern households. Parents may be watching television and interacting with their second screens while children are being entertained surfing the web or on any of the multiple social media channels available. This significantly complicated the task of accurately tracking media consumption in the household since different people could use the same device at different times. For companies this meant not being sure if their messages were being delivered to the right member of the household ("Counting Couch Potatoes", 2013). However, the next wave of technology proved to offer an opportunity to overcome part of this challenge.

Customization: The era of big data and artificial intelligence

The previous two decades –and the technology advancements experienced throughout them- left marketers with a new context that demanded a shift in marketing imperatives and competencies. On the one hand, Internet facilitated a permanently open global marketspace with a multiplication of sales channels and customer interfaces that fueled the fragmentation of markets. On the other hand, social media, with its openness and multiplicity of interactive platforms, transformed customers' access to and engagement with companies and their brands, increasing the volume of information substantially.

One important consequence of both, the penetration of Internet and the advent of social media, was the possibility for firms to track customers' interactions with their brands online (Lemon and Verhoef, 2016). Whether it was a customer visiting a company's website, shopping one of their products online or reacting to some of their social media content or updates, these interactions became valuable pieces of information to target their efforts to the most effective segments and markets. The difference this time is that the information compiled was no longer restricted to the structured type, such as demographics and other easily measurable data. Marketers were now also able to collect unstructured data, the type that needs interpretation to extract meaning and classify it. Along with the information that website visits and search queries were providing, social media platforms offered detailed information about their customers' social life as well as their reactions or changes in attitude towards their brands. This has given rise to the extensive use of the term "Big Data" when referring to this bulk of information available (Fan et al., 2015).

This detailed information allowed companies to manage personalized relations with clients and to customize their offers and promotions. The focus on customization has been the driving force behind most marketing efforts in the past couple of years (Kumar, 2015) since studies estimate that the cost of making a sale to a new customer is five to seven times as much as the cost of retaining a customer (Reichheld, 2001). Companies that embraced this approach quickly started adopting the term "customer-centric" to describe their business values and focus. Under this approach, a company's marketing efforts seek to satisfy the needs and wants of each individual customer (Simon et al., 2016; Sheth et al., 2000). Subsequently, customer-centric companies started amassing large volumes of individualized data about their audiences. For this, they invested heavily in Customer Relationship Management

(CRM) software to store, manipulate and access this data to support an integrated strategy applied across all of a company's departments and divisions.

This new technological context appears to have fostered another intersection such as the one identified and discussed previously between the marketing and communications fields. This time it was marketing and computer science, and within the latter the subfields of machine learning and artificial intelligence. One of the main applications of these two subfields has been the development of algorithms that learn to adapt itself to new inputs or data, also called self-learning systems (Van Otterlo, 2013). These systems are at the core of the development of robots and other human surrogates.

One of the first and most popular contributions of self-learning systems to marketing is the development of algorithms to conduct sentiment analysis. Liu (2012) defines it as "the field of study that analyzes people's opinions, sentiments, evaluations, attitudes and emotions from written language". Sentiment analysis was quickly adopted by marketing professionals responsible for a company's social media strategy to take the pulse on the impact of different campaigns or events on the image of their brands.

For instance, customers increasingly use tags, also referred as user-defined content, to classify media content created by brands, such as articles, videos, or podcasts (Taneja et al., 2012). These tags are then shared by users via social media and, in turn, associated with similar or different tags used by other users, creating a map or cloud of tags. Tag clouds ultimately offer marketers a way to gauge on the sentiment towards a brand (Nam & Kannan, 2014) through the development of algorithms capable of classifying comments by tags and tags by sentiments. Marketers use this information to understand the emotional and psychological connections that customers may have with their brands and use them to establish bonding mechanisms through carefully crafted communications and campaigns.
As a result of this, industry and academic circles have advocated for a change in focus, away from "products" and closer to the concept of "experiences". This has given birth to the subject of experiential marketing (Schmitt and Zarantonello, 2013).

Self-learning systems have also been used to enhance customers' experiences through recommendation engines and solutions (Forrest and Hoanca, 2015). According to Dawar (2013) companies can build a strong and sustainable competitive advantage by focusing on downstream activities, that is, those in charge of delivering a product or service to consumers. Consider how the examples of eBay and Amazon support this idea. Their recommendation engines focus on one aspect of these downstream processes: reducing customers' perceived costs and risks implicit in the purchase process. They provide user-friendly information regarding the evaluation of different alternatives and other customers' assessments, facilitating customers' decisions.

More recently, cases such as the launch of Lenovo's customizable logo reflect the integration of these two trends, customization and experiential branding. The new logo displays a static typeface with a dynamic color and background. The adaptations span through a variety of media outlets, from online channels to traditional ones, such as in-store signage (Bulik, 2015).

However, with greater access to more data and information, more challenges arise. Since marketers have more diverse ways to measure and track consumers reactions, the pressure of quantifying the impact of every single marketing effort over a company's business intensifies. A number of studies present evidence that suggest a greater concern among companies to hold marketing executives accountable for the return on their investments and actions (Giamanco and Gregoire, 2012; Hoffman and Fodor, 2010). Whether it is an online advertising campaign or a social media strategy, the value of every marketing tactic can now be easily quantified and associate with a number of financial performance metrics.

The changing nature of the marketing function discussed in this section, in the context of the three waves of recent advancements in information technology, suggests important implications for the job skills and competencies needed in marketing professionals. The next section argues that the changes in the marketer's skillset can be traced by the fluid notion of interactivity between customers and companies.

The evolving notion of interactivity and the marketers' skillset

Scholars have documented the change on the marketer's skillset due to the aforementioned technological advancements. Schlee & Harich (2010) provide evidence of the increase in technical skills needed in current marketing jobs at all levels as compared to the ones required in the past. These changes in the skillset of marketing professionals, however, have not traveled smoothly and efficiently into the job market. Gibbs et al. (2011) document the mismatch between employers and graduates with respect to their views regarding the computing skills needed to succeed in the job market. In their study, employers seemed to have very particular expectations about specific troubleshooting computing skills whereas graduates felt confident employers would provide training if specific skills were needed. As a corollary, pedagogical research in the field of marketing has recently started to emphasize the need to redesign the marketing curriculum to incorporate the new digital realities of the profession (Wymbs, 2011).

As it was previously argued, Internet represented a change in the way people communicated with each other and, in turn, with organizations. A number of studies argue that information technologies have shifted the marketing function focus from the "marketplace" to the "marketspace", where marketers need to engage in a bidirectional exchange of goods, services and information with customers (Foster, 2015; Rayport and Sviokla, 1994; Vandermerwe, 2014). The key term used extensively during the nineties to describe some of the responsibilities of marketing positions was *interactivity* (Lordan, 2006).

We can distinguish two ways of understanding the concept of *interactivity* during this initial wave of technological advancements. On the one hand, *interactivity* meant that companies were able to establish communications with customers that resembled conversations, as opposed to monologues or one-way exchanges of information, as it has been under the traditional model. E-mail and chat rooms facilitated timely and expedient interaction between companies and customers. Marketing professionals had to learn how to handle these conversations in real-time and in the most effective way. This implied marketers needed to show good oral and written communication as well as proficiency with the new information technology tools. In their comprehensive study, Casner-Lotto and Barrington (2006) support this claim. Incidentally, this set of skills came to be known as Internet Literacy among companies, practitioners and academicians (Livingstone, 2008).

On the other hand, *interactivity* also meant that customers were able to modify or alter the environments in which communications take place (Brodie et al., 2103; Hollebeek et al., 2014; Yadav and Pavlou, 2014). In the case of computer-mediated environments, such as the Internet, interactivity meant the ability of customers to tinker or adjust the form and content of communications. In response to this, marketing communications through the digital marketspace quickly adopted a wide variety of elements that prompted a reaction or response from users. Elements such as the call-to-action became an essential element in every digital communication (Bampo et al., 2008; Basheer and Ibrahim, 2010). Examples of these include the use of hypertext in emails and the design of dynamic content in banners or pop-up advertising. For marketing positions, the latter translated into an increasing need for graphic visual and textual design skills. Website design and management became one of the top priorities in every marketer's list of daily responsibilities during the decade that followed the introduction of the Internet to the public. Marketing job descriptions around the world gradually incorporated terms such as web design, newsletter, pay-per-click, web traffic, email lists, search engine optimization, among others (Wymbs, 2011).

With the outset of social media and its importance as a new digital communication channel the understanding of *interactivity*, at least from a marketing point of view, changed once again. This time, interactivity meant participation and engagement. Incidentally, a number of scholars have spotted this strategic shift. For example, Lovejoy and Saxton (2012), and Sashi (2012) argue that social media created opportunities for customer dialogue and engagement that are qualitatively different to those offered by websites. Vargo and Lusch (2004) suggested companies' promotional efforts needed to be understood as a dialogue with consumers, one in which questions were asked and answers had to be provided. In other words, promotion had to be addressed as a communications process. Consumers did not respond passively to this change in approach. They took the leading role initiating these dialogues and managing the resulting conversations to indicate organizations what were their most important concerns and topics of interest (Briones et al., 2011; Prahalad and Ramaswamy, 2000).

Under this new paradigm, marketing and communications become partners in the creation of value, as it was previously argued. In this respect, Ballantyne and Varey (2006) highlight that many marketing functions and responsibilities paralleled those of communication positions, with a major emphasis in listening to customers, finessing their messages and finding the right audiences to receive them. Communication became one of the most important channels through which value-added was delivered by companies. However, this time there was a significant difference: customers were seen more as partners, or co-creators, than just merely on the receiving end of the communication process. Companies understood that the secret to create sustainable value was to incorporate customers in the co-creation of their marketing offerings because that will, in turn, mobilize more customers (Ramaswamy and Gouillart, 2010). It was time to expand the notion that the purpose of a business is to create a customer that Peter Drucker introduced in the 1950s (Drucker, 1954) to assert that its job was to create customers who create other customers (Singh, 2010).

The intersection at which marketing and communication theories arrived when social media became popular was quickly reflected in the job market. In marketing departments across the board new positions were created, such as social media managers and community managers. Some other popular names used for these positions were: Social Media Editor, Social Media Marketing Manager, Social Media Communications Manager, Project Social Media Manager, and Social Media Strategist, among others. Some of the responsibilities included in the job descriptions for these positions were: create, tag and title content; deliver new dynamic content; leverage third-party content; analyze trends in social media tools; analyze discussions to develop innovative ideas, programs and appropriate messaging; manage strategic messages; editorial management and development; report on performance metrics; monitor and respond to the fan community; nurture relationships; optimize the fan experience; help educate and counsel other colleagues and departments on social media; grow relationships with key influencers, bloggers, highly followed personalities, and reviewers (Tuten and Solomon, 2015).

From the list of responsibilities displayed above, it becomes apparent that creative writing skills and the ability to generate engaging content were paramount. Good writers and storytellers were among the talents most demanded. Proficiency in the skillful crafting of messages designed to appeal to niche audiences represented a valuable competency for employers. Professionals that understood how to identify and influence opinion leaders within these audiences became highly valued assets for companies (Pulizzi, 2012; Royle and Laing, 2014).

The newly adopted skills and competencies bore fruits. People were successfully *pulled* to companies' marketing resources, attracted by the carefully crafted content and engaged with it in a wide variety of ways. As it was discussed in the previous section, for marketers the result was an even richer and more complete picture of the interactions that a customer was having with their companies than before. This wealth of information represented an opportunity to understand their clients better and to deliver more value through the customization of their offerings.

Oliver, Rust and Varki (1998) predicted that marketers would face a model in which interactivity meant co-designing continuously changing offerings to meet customers' particular preferences and tastes. These authors referred to this as "real-time" marketing and characterized it as an integration of mass customization and relational marketing. More recently, this paradigm is referred to as the service-dominant logic (Rust and Huang, 2014; Vargo and Lusch, 2004)

In light of this, it can be argued that the notion of *interactivity* changed one more time to incorporate two new features. One of them is the notion that customers want to extend the co-creational aspects of content and messages to the design of products and services. The second feature reflects a shift towards a more holistic view of the way customers perceive the value generated by a company's offerings. They no longer limit the delivery of value to the consumption of a company's offering. Customers derive value from the whole *experience* provided by the interaction with a company, from the initial contact to every single touch point in which they have the opportunity to express themselves and learn more about a brand.

For marketers' skillsets this change of focus suggests a need to learn how to cultivate successful customer relationships (Melaia et al., 2008). As a consequence, marketing executives have increasingly incorporated software tools to store and analyze a wide array of data as part of their every-day work. For instance, studies have found that the specific skills needed at entry and lower-level marketing positions are more extensive than before (Schlee and Harich, 2010). Among these new skills, employers highlight those that refer to the analysis of information in databases, such as command of Structure Query Language (SQL) and Extensive Markup Language (XML), and experienced used of business management solutions, such as SAP and SharePoint.

The introduction of self-learning systems into the marketer's tool kit brought out the need for more advanced analytical skills (Webber, 2013). In particular, advanced training in multivariate statistics, mathematical programming and visual data techniques (Watson, 2012) are found when the desired skills and knowledge included in recently published job descriptions are analyzed. This trend has also promoted the emergence of low to middle-level positions with descriptors such as CRM managers; data scientists; business or market intelligence analysts; and consumer or marketing insight analyst (Stone and Woodcock, 2014). Some of these positions are being filled with professionals with mathematical or computer science background given the acute shortages of analytical skills perceived and reported by some employers. However, these same employers complain about the lack of appropriate knowledge of business context or skills to communicate results to decision-makers that these more technical profiles display (Webber, 2013). As the flow of information is not only expected to increase in diversity and complexity, it is anticipated the overwhelming needs for analytical skills to grow. The recent proliferation of knowledge surrogates such as smart homes and appliances represent one way in which this trend is materializing ("Ordinary Home Appliances Are About to Get Really Sexy", 2016).

With respect to the experiential aspect of the new paradigm of interactivity, Atwal and Williams (2009) call attention to the importance for marketers to gather resources to focus on the intangible aspects of a business, such as brand-related experiences. Similarly, Webster et al. (2005) report brand equity building as one of the most pressing challenges faced by modern marketing managers in both industries, business-to-consumer and business-to-business. Vargo and Lusch (2004) describe how the orientation towards the more intangible elements of a company implies the development of competencies geared towards the provision of services or experiences as opposed to goods.

Finally, several studies that reflect the practitioner's perspective (Finch et al., 2012; Royle and Laing, 2014) highlight the need for marketing professionals equipped with skills oriented to develop and incorporate return-on-investment metrics to the marketing function and tactics. Baker and Holt (2004) warn us about the dangers of failing to address the planning-measuring gap in marketing strategies. They conclude that under those limitations, marketers will be perceived as unaccountable by the rest of the organization and as unable to demonstrate a return on investment in the strategies they have control over.

Thus, the third wave of technological advancements implied a redefinition of marketers' skills in which a balance between the analytic and synthetic competencies was demanded. The new times call for marketing professionals that are both sensitive to other people's emotions and their expressions while at the same time aware of the need to quantify the progress of their strategies.

Conclusion

This chapter was conceived with two goals. The first one is to provide the reader with a review of the most important technological changes that impacted the marketing function in modern companies. The second is to present a thorough discussion of the changes marketing job positions experienced over the past two decades as a result of technology changes and new strategic imperatives.

The first of the two objectives was presented dividing the review of major technological advancements in three waves. The first wave represented the commercialization of Internet through the introduction of the World Wide Web. What the Internet provided for companies was a new way to communicate with customers. It offered the possibility to showcase their offerings at all times worldwide. The Internet also introduced the first definition of audiences' digital footprints and allowed companies to keep track of them. The second wave was embodied by the surge of social media and the challenges this phenomenon brought with it: customers' engagement through content creation, the emergence of the second screen and the fragmentation of audiences. The third and most recent wave is marked by the era of big data and the development of information surrogates, such as artificial intelligence applications for sentiment analysis and recommendation engines.

The second objective is tackled with a discussion of how these three waves of technological change accompanied an evolving notion of interactivity from the customers' point of view and an adaptation of marketers' competencies and skills. From interactivity as the ability to establish conversations and adjust the environment where communications take place to one where companies are seen as providers of highly customizable experiences. From marketing responsibilities that relied on graphic design skills to ones in which competencies to ensure a sustainable and engaging relationship with customers were paramount.

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