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An Overview of Business Advancement Through Technology: Markets and Marketing in Transition

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1.1 Introduction

For almost three decades or so, an intense technological diffusion is observed across most sectors, industries and societies around the world. Technology and digitisation have changed the way we love, transact, interact, work, commute, bank, lead, educate and manage our health. Robots, Big Data, Analytics, Artificial Intelligence, Augmented Reality, Blockchain and similar technologies, are currently utilized by organisations towards improving efficiency, minimising costs, saving time, and achieving advantage over their competitors (Efthymiou et al., 2019).

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Often, technologies take the form of minor improvements, which enhance users' effort, or disruptive forces, capable of changing the rules of the game in an entire sector.

However, technology is not a trouble-free magic stick, capable of offering a solution to every problem. A more realistic examination reveals that, like most phenomena, technology reminds the two sides of a coin. While it may offer enormous advantages, it may also become a huge liability. For instance, not all organisations are ready to adopt new technologies. Their culture, workforce, budget and current processes, may be unprepared to embrace complex technologies. Not to mention the burden of ongoing training, security risks, continuous updates and large cost of maintenance, especially for small businesses. Other drawbacks include the risk of loss of information, and technology's negative impact on society, among others (Efthymiou & Michael, 2016). While technologies may offer remedy to businesses in crisis, they may become the crisis itself (Vrontis et al., 2022a, 2022b, 2022c). In addition, some technologies appear ahead of their time; after exploiting considerable resources, they end up in blustering failures (Batiz-Lazo & Efthymiou, 2016). Within this framework, the current chapter offers an overview of technology diffusion in different workplaces and sectors, with a focus on markets and marketing.

1.2 Contextual and Theoretical Foundations

Technology has transformed nearly every aspect of not only human life, but also corporate life. As the years go by, the entire business world is leaning more and more toward it (Favoretto et al., 2022), making it almost unlikely to separate (Chatterjee et al., 2022a) the two from each other. Innovation drives business (Hahn, 2020), and since technology prepares the ground for it (Mikalef & Krogstie, 2020), it can be deduced from here that business requires technology to be sustained. Technological evolution seems to speed up exponentially along with its capacity (Chatterjee et al., 2022a), accessibility (Ferreira & Franco, 2019) and variety (Huang & Rust, 2020). Versatile smart solutions (empowered by artificial intelligence (AI), the Internet of

Things (IoTs), machine learning (ML), augmented reality (AR), etc.) promise game-changing advancements (Haaker et al., 2021) in marketing and consumption practices. Thus, it should come as no surprise that firms in practically every business sector (e.g., healthcare, manufacturing, retailing, financial) are constantly and steadily increasing their technology investment (Singh et al., 2019), driven to reach various objectives (Verhoef et al., 2021).

In times of globalization and technological progress, businesses are facing rapid changes both in customer needs (Kathpal, 2020) as well as in the nature of the markets (Mele et al., 2019). Thanks to smart phones and other internet-connected devices (Wang, 2021), and applications customers can get what they want almost exactly when they need it (Thrassou et al., 2020). As today's consumers become increasingly tech-savvy (Shah & Murthi, 2021) and aware of what they can do with technology (Handarkho, 2020), they demand fast and seamless digital experiences (Grewal et al., 2020) and expect instant responses to their needs (Thrassou et al., 2020) whatever channel they are using. In response, firms are changing the way they do business (Wisetsri et al., 2021) by accelerating the application of technology (digital transformation) and reinventing business processes (Singh et al., 2019; Vial, 2019; Verhoef et al., 2021), organizational structures (Hahn, 2020), and business models (Venkatesh et al., 2019). Investments in certain technologies do confer benefits such as lower costs (Haaker et al., 2021) and higher efficiency (Wang, 2021), and more capably meet the expectations stakeholders (Chatterjee et al., 2022b). That is why the notion of innovation, which moves a company forward, is now becoming more important.

1.3 Technologies Diffusion in Marketing

Transformative technologies are opening a myriad of possibilities for marketing applications (Vial, 2019). Although the application of digital technologies in marketing undergone several intriguing stages of transformation (Favoretto et al., 2022), each stage has helped change (Venkatesh et al., 2019) and enhance the scope and role of the marketing function within the organization (Davenport et al., 2020). The outcome is further broadening of the scope of marketing with tech-enabled marketing practices (Deighton et al., 2021) that have the potential to deliver

‘improved operational efficiency’ (Kopalle et al., 2021), ‘better marketing insights’ (Kumar et al., 2021), and ‘more innovative ways to engage with customers of the firm’ (Shah & Shay, 2019; Shah & Murthi, 2021).

In the context of Fourth Industrial Revolution, four “new-age technologies”—the Artificial Intelligence (AI), Internet of Things (IoT), Machine Learning (ML), and blockchain—are particularly noteworthy. These technologies are in a widespread manner considered to be the way of the future (Kumar et al., 2021) and serve as the basis for other trends that are likely to gain steam in the years ahead (Pereira et al., 2021). Some examples of promising applications include rapid growth in development of IoT-enabled consumer devices (Haaker et al., 2021), which tracks and records the patterns of how consumers interact with those devices (Hoffman et al., 2022), such as smart watches, security devices, fitness trackers, home assistants, and kitchen appliances (Liu et al., 2021), testing new products (Chatterjee et al., 2021), and improving consumers’ shopping experience (Dwivedi et al., 2021).

Although firms have already been applying these new-age technologies to their marketing activities and business tasks (Kumar et al., 2021), they have only just begun to examine (Chintalapati & Paney, 2021) the integrated application of these technologies to marketing strategies. In this context, there has been an apparent shift towards data-driven marketing strategies (Flavian et al., 2019), steering firms towards harnessing the power of new-age technologies (Shah & Murthi, 2021) to further improve all units of their business, especially marketing (Deighton et al., 2021). The potential of new-age technologies which allows firms to integrate data from multiple sources (Themistocleous, 2019) and mine it using sophisticated analytical techniques and equipment (Liu et al., 2021; Mikalef & Krogstie, 2020) to extract powerful insights (Vial, 2019) has prompted firms to examine new-age technologies keenly. Besides employing these new-age technologies to solve existing problems and/or augment existing capabilities (Wedel et al., 2020), firms have begun to comprehend the new business opportunities provided by these new-age technologies (Thrassou et al., 2020).

Briefly, in a constantly changing business environment that has increasingly become digital and technology-enabled (Thrassou et al., 2020), it was in this period that the world witnessed an interesting evolution in the

dynamics of marketing. Over time, this evolution has pulled through the expansion of the scope of the marketing function in businesses (Mele et al., 2019) “from being primarily involved in developing and managing creative communication to implementing data-driven and technology-enabled marketing practices that are not only relevant to the firm and consumers but also financially accountable” (Shah & Murthi, 2021, p.774).

1.4 New Forms of Consumer and Firm Interactions

Firms can no longer bank on engaging with their customers in isolated interactions (Qin, 2020) since the future of marketing hinges on gaining a holistic understanding of customers’ needs and behaviors across devices, multifaced platforms and varied products and services (Kopalle et al., 2021). When engaging with brands, customers today expect effortless (Singh et al., 2019), seamless (Wang, 2021), and intuitive (Verhoef et al., 2021) experiences across touchpoints, and if applied strategically, digital transformation can enable firms to meet (Vial, 2019; Verhoef et al., 2021), and even exceed these expectations (Thrassou et al., 2020).

New technologies have often been effectively deployed to make new forms of interactions between consumers and firms possible. AI, for example, is a powerful engine in replacing human representatives (Chatterjee et al., 2021) of the firm with machine agents (Huang & Rust, 2020) and simplifying firm–consumer interactions through “word of machine” (Kopalle et al., 2021). In addition, anthropomorphized chatbots can influence consumer responses in a customer-service context and/or behavioral intentions to make purchases (Shah & Shay, 2019). As another example, augmented reality is used to facilitate firm–consumer interactions in retailing industry, which, as a “try before you buy” technology, is especially highly effective when consumers are unsure about purchasing new or unknown products.

Such technological advancements and ubiquitous adoption of hand-held devices (Singh et al., 2019) have also transformed consumer

behavior significantly, directly contributing to their interaction with brands (Qin, 2020) and social commerce usage to make decisions and purchase online (Handarkho, 2020). Moreover, consumer attitudes toward online shopping have positively influenced with the increasing use of digital marketing and social media (Qin, 2020), resulting in increased market share for eCommerce centric organizations (Handarkho, 2020). Given the increasing number of shopping channels in the multi-channel environment (Kumar et al., 2021), which creates a more diffused consumer shopping experience (Kathpal, 2020) has also influenced consumer behavior. Mobile channels have become the norm thanks to emerging digital trends (Thrassou et al., 2020) and are increasingly integrated into consumers' daily lives through innovative mobile tools (Pereira et al., 2021) like shopping applications, location-based services and mobile wallets (Handarkho, 2020)—all influencing the consumer experience (Flavian et al., 2019; Kathpal, 2020). Apparently, the automation of activities (Hahn, 2020) and reduced need for human intervention (Pereira et al., 2021) is the most evident benefit to customers. The connectivity of IoT devices makes customers' lives simpler and hassle free with “the convenience and flexibility of being able to remotely monitor, control, and manage all of their connected devices at the click of a button” (Kumar et al., 2021, p.871). The automated nature of intelligent (personal/digital) assistants like Google Assistant, Siri, Amazon, etc. (Chintalapati & Paney, 2021) can provide a more customized experience for consumers that are personally relevant to them (Kathpal, 2020), by automatically monitoring and making price comparisons (Mele et al., 2019), and personalized recommendations based on a few simple queries (Wedel et al., 2020), made possible by their advanced analytical capabilities (Mikalef & Krogstie, 2020). When customers receive communications (Kathpal, 2020) and offerings that are relevant to their personal needs and preferences (Qin, 2020), they are more inclined to engage with the firm in the long run (Wang, 2021) and directly contribute by purchasing or consuming the firm's products or services (Shah & Murthi, 2021), as well as by providing feedback, creating word-of-mouth (WOM) on social media, and recommending its products to other customers (Deighton et al., 2021). In today's digital age, customers are also

increasingly willing to share their thoughts and experiences about brands with others.

Furthermore, customers can take the advantage of the transparency that blockchain technologies afford in their purchases (Shah & Shay, 2019) by tracing the entire life-cycle of a product (Chatterjee et al., 2022a) to verify their authenticity (Liu et al., 2021) and evaluate the alignment of a firm's values with their own (Hahn, 2020). As customers today are highly conscious (Handarkho, 2020) and very concerned about issues regarding the origin of products (Hahn, 2020) that they consume, transparency offered by blockchain helps them connect more closely with (Shah & Shay, 2019), and generate positive attitudes towards the firm and its offerings (Dwivedi et al., 2021). This, in turn, encourages customers to place greater trust (Liu et al., 2021) in these brands and to patronize their offerings (Shah & Shay, 2019) in the long run.

Social networking sites (SNSs), enabled by web 2.0 technology, have provided individuals new forms of expression and engagement (Liu et al., 2021), where they act as contributors/producers (prosumers) rather than as passive consumers (Dwivedi et al., 2021). Online communities and fandom behavior have particularly altered the consumer-brand relationship (Qin, 2020) in such a way that consumers take more active (Chatterjee et al., 2022a) and enthusiastic roles as prosumers and brand ambassadors (Hahn, 2020) by creating brand-related user-generated content (Br-UGC) (Wang, 2021). Br-UGC is particularly effective, allowing users to generate and share media content to their social circle (Davenport et al., 2020) while achieving considerable reach through dynamic social networks (Kathpal, 2020). Given the ability of SNSs to allow users to gather information and exchange opinions (Handarkho, 2020), it is an obvious fact that consumers are no longer passive recipients of the marketing communication process (Mele et al., 2019) instead they are assuming active and participatory roles (Singh et al., 2019) in brand co-production (Hahn, 2020), creation, promotion and distribution (Wedel et al., 2020), resulting in accelerating market expansion and increasing brand awareness (Dwivedi et al., 2021). To increase the satisfaction levels of online communities, it is important to identify the needs and demands of members of these online communities (Grewal et al., 2020), create special offerings that fit those needs and demands (Vial,

2019) and effectively communicate/interact with members (Wisetsri et al., 2021) just as in traditional marketing. As a direct outcome of the increased automation (Hoffman et al., 2022) and interconnectivity of business functions (Shah & Murthi, 2021), customers can utilize more flexibility in how and where they want/select to interact with a firm (Wang, 2021) depending on their personal preferences (Kumar et al., 2021).

As Br-UGC is merging with online shopping (Dwivedi et al., 2021), “consumers integrate browsing, exploring and sharing with different forms of content” (Wang, 2021, p.3). Social networking platforms, therefore, make marketing “organic” (Liu et al., 2021) by integrating marketing activities into consumer daily life activities (Qin, 2020) when they are using mobile apps to share photos, express opinions, visit website, etc. (Wang, 2021). An “organic” marketing strategy, which merges shopping and daily routine of consumers (Kathpal, 2020) on mobile times, naturally increases traffic (Wedel et al., 2020) and sales (Thrassou et al., 2020) with a little support from any form of content (Wang, 2021)—text, posts, images, videos, reviews, etc. Consequently, marketing is truly interactive, organic and dynamic business activity (Wisetsri et al., 2021) witnessing this transformation on a very intense scale.

1.5 New Strategic Frameworks

“The growth of digital platforms has displaced traditional intermedia not only by creating a new type of superpower of omnichannel marketplace spanning online and offline retailers but also changed business models from a linear supply chain pipeline to a complex network of producers and users in an interconnected ecosystem” reported by Wang (2021, p. 2). Through enhanced network effect of social media particularly (Qin, 2020), the platform provides an infrastructure which gathers external sellers and buyers and creates interaction, regardless of sources through data-driven matchmaking (Themistocleous, 2019; Shah & Murthi, 2021). Inescapably, the process of value creation is vigorously moving from the firm- and product-centric approach to interactive and personalized experience (Flavian et al., 2019; Kathpal, 2020). As a channel of

direct consumer-brand interaction, brand shopping platforms allow consumers to browse and discover the new products/trends (Kathpal, 2020) and receive real-time customized recommendations (Mikalef & Krogstie, 2020). As another communication platform, brand communities built by SNSs (Dwivedi et al., 2021) bring users, who contribute to brand communication by sharing branded content, together (Liu et al., 2021). Such media sharing platforms enable both marketers and users to disseminate brand-related information (Chintalapati & Paney, 2021) and promote interactions through authentic and trustworthy practice (Qin, 2020).

The increased availability of rich data, due to new-age technologies, has the potential to enhance the volume, and quality of market and consumer data (Themistocleous, 2019). For instance, the widespread use of digital devices, such as computers, mobiles, smartwatches, etc. (Haaker et al., 2021) and software applications like web browsers, database software, mobile apps, social media and so on (Qin, 2020; Liu et al., 2021), has resulted in data streams that record events as they happen (Themistocleous, 2019), including how consumers feel (Grewal et al., 2020), think (Liu et al., 2021), act (Mele et al., 2019), and interact (Qin, 2020) with firms and other consumers at various points throughout their digital journey (Wedel et al., 2020). While previously being out of reach for many firms, it recently became ubiquitous as the cost to collect and analyze data (Themistocleous, 2019), such as “eye movement, speech, facial recognition, and genetic data” (Hoffman et al., 2022, p.3), rapidly decreases (Chatterjee et al., 2022a; Favoretto et al., 2022). Furthermore, data-capture technology, especially AI-enabled, which generate data on consumer–firm interactions (Qin, 2020; Shah & Murthi, 2021) via video, audio/speech, photos/images and text shared on platform-orchestrated multi-sided network sites, among others, has also enabled large-scale field experiments (Venkatesh et al., 2019) that allow companies to examine the causal outcomes of their marketing actions and/or strategies (Favoretto et al., 2022). Marketers can use these investigations to optimize their website designs (Haaker et al., 2021), effectively create retarget advertising (Ferreira & Franco, 2019) and assess the effects of new marketing technologies (Verhoef et al., 2021).

Researchers confess that “these technological innovations and the resulting applications and solutions, with their unprecedented effects and unfamiliar outcomes, compel marketers to get ahead of the knowledge curve” (Grewal et al., 2020, p.1). Technology enabled innovations, analytics, data storage, and solutions emphasize opportunities for marketers to create, communicate, collect, and deliver value for and with their customers (Mikalef & Krogstie, 2020). Firms can determine forthcoming trends and plan responses in advance (for instance, change delivery mechanisms, develop new products, etc.) by leveraging the power of insights (Pereira et al., 2021) from advanced analytic and/or data mining techniques (Mikalef & Krogstie, 2020; Liu et al., 2021). Firms, further, respond and/or adapt to these trends more efficiently and effectively by interconnecting business functions (Mikalef & Krogstie, 2020) and the automation of analytical and business processes (Liu et al., 2021). Firms can, in so doing, surprise and mesmerize customers by anticipating their needs (Kathpal, 2020) and offering experiences that are aligned with their requirements (Flavian et al., 2019).

Customers’ expectations for personalized experiences have increased tremendously. Firms can gain comprehensive insights that help them to manage the demands of their existing customers (Deighton et al., 2021) and improve their experiences (Kathpal, 2020) as a consequence of access to real-time and more detailed information about customers (Mikalef & Krogstie, 2020), along with more advanced data mining capabilities (Themistocleous, 2019; Mikalef & Krogstie, 2020). By understanding the personal preferences of customers with respect to marketing mix variables (Davenport et al., 2020) (in connection with a big picture perspective of all customers together), firms can develop and provide customized services and communication practices (Dwivedi et al., 2021). In this context, new-age technologies, for instance, AI, allow a firm to convey right message to the right customer in the right medium (Shah & Shay, 2019; Chintalapati & Paney, 2021) at the right time (Huang & Rust, 2020). Furthermore, firms can work towards lowering the customer loss by developing nuanced ‘customer churn models’ (Favoretto et al., 2022) that can better forecast future behaviors of customers (Kopalle et al., 2021).

In addition to developing customized marketing strategies to engage with their customers (Huang & Rust, 2020), new-age technologies also

hold the key for firms to engage directly with their stakeholders (i.e., suppliers) (Chatterjee et al., 2022a). For example, they can create digital and automated smart contracts by using blockchain which allows firms to use micro-currencies to directly and instantly reward customer engagement (Shah & Shay, 2019). Firms' engagement strategies can be modified in the future (Liu et al., 2021) to communicate directly (without mediators such as media planning or buying firms) with individual customers in real-time (Mikalef & Krogstie, 2020) about their products and services, offers, and so on. Thus, they can authenticate that they are actually reaching the audience for whom they have paid (Huang & Rust, 2020), as well as monitor and evaluate the effectiveness of their marketing efforts (Handarkho, 2020). In this way, they can also communicate with customers in an observable and verifiable way around their values (Kathpal, 2020), accordingly increasing customers' trust in them (Vial, 2019).

As a result of increased automation, more comprehensive insights, and better interconnectivity of business functions (Favoretto et al., 2022), firms can improve their product development (Chatterjee et al., 2022a) and enhancement processes (Kumar et al., 2021) and achieve process optimization (Davenport et al., 2020). Since they can monitor their equipment (and their usage), and proactively carry out maintenance (Shah & Shay, 2019) with technology enabled innovations, analytics, data storage, and solutions, they can expect to reducing operating expenses, increasing productivity, and improving the efficiency (Hahn, 2020). The rise of chatbots, intelligent agents, robotics and etc. has promoted the growth of automated customer support alternatives to handle routine enquiries (Wisetsri et al., 2021) and address more complex issues. These automated agents can provide efficient customer service (Pereira et al., 2021), lower costs, and provide outstanding (Thrassou et al., 2020) and consistent service quality (Venkatesh et al., 2019) by learning with each interaction (Qin, 2020).

1.6 Book Content and Structure

With these considerations in mind, this book is organized in an attempt to understand the technological improvements in the field of global marketing. The current book presents another 11 chapter, aiming to advance our understanding on how technological innovations are likely to shape the practice and discipline of marketing for the next several decades. The careful selection of chapters considering their quality, their relatedness to the book theme, and the significance of their contribution to knowledge through solid empirical and/or conceptual scientific theorization serves multiple purposes, whereas, the value is both contemporary and historical. In putting this works together, we were gratified to provide compelling, multidisciplinary insights from researchers working across the marketing, IT, and strategy domains.

Chapter 2 is titled ‘Digital transformation of the organisations using AI integrated partner relationship management’. The analysis communicates the emergence of artificial intelligence (AI) and its impact on businesses. AI has several applications in finance, customer relationships, human resource management, service management, legal department of the firms, supply chain management, and so on. The analysis explains how different industries use various kinds of AI applications to improve their efficiency and enhance their profitability. But applications of AI also have several issues such as AI algorithms’ biasness, privacy infringements, customer profiling without consent, legal issues related to personhood, and so on. Without the integration of AI with their existing applications, it is not possible for the business to digitally transform their various functionalities. Thus, the authors (Sheshadri Chatterjee, Ranjan Chaudhuri and Demetris Vrontis) introduce Partner Relationship Management (PRM), an application integrated with different functions of the organisation. This system uses various methodologies, software, strategies, and web-based capability for information exchange with different stakeholders. Integration of PRM with artificial intelligence (AI) can help organisation in accurate and quick decision making. The study concludes with some recommendations to policy makers, government agencies, and corporate practitioners.

Then, Chap. 3, looks at the banking sector (titled: Creating Value Proposition for Rural Banking Customers in Emerging Markets: Adoption of Mobile Banking Technology Induced by Disruptive Events in India). Nitin Shankar and Sana Moid focus on India's ongoing transition to a cashless economy through mobile phones and the Internet. Cutting-edge technologies like Artificial Intelligence, Machine Learning, Cloud, Internet of Things, Human Computer Interface (HCI) and Blockchain are likely to further enhance digital banking and associated financial inclusion for unbanked citizens. This effort comes with a changing consumer mind-set towards the adoption of technology, which was cultivated by enforced Covid-19 lockdowns and national Demonetization. Drawing on a survey, conducted among citizens in rural areas, the chapter examines further the behavioral drivers and restraining factors of rural banked customers towards mobile banking technology.

Subsequently, Chap. 4, titled 'A review of internet financing through peer-to-peer lending: A cross-country comparative analysis', provides a literature review of the internet finance in China. More specifically, the author (Panagiotis E. Dimitropoulos) focuses on online P2P lending and its contribution to business advancement. Technological developments have manifested into several dimensions within business and entrepreneurship. Internet finance (through peer-to-peer lending) is one such advancement which has developed rapidly in recent years and has also brought new challenges to financial management, investments, business financing and growth. However, the development of internet financing has also created some additional risks within the financial market. The findings present implications for platform managers, lenders, and borrowers.

Chapter 5 examines the 'Digitalisation of Love and Lies on Online Dating Platforms in Coronavirus Times: Advancement through Technology'. Covid-19 facilitated a different form of technology-assisted dating. Instead of meeting in person as before the pandemic, in restaurants, bars or pubs, daters were more inclined to meet digitally, preferring meetings via Zoom, Microsoft Teams, and Skype. As a result, businesses were advanced through digitalisation, online services, computers, mobile phones, outdoor gear, walking and running shoes and bicycles and bicycle gear. While previous researchers focus mainly on 'lies' and 'deception'

(Markowitz & Hancock, 2018), Ursula Schinzel reveals a transition to 'love' and 'trust'.

The following chapter (Chap. 6, titled: 'The social impact of clinical tools for neuromarketing research: possible applications for the wine sector', by Giuseppe Festa, Elenica Pjero, Simone Feoli) engages with new instruments adopted in neuroscientific activities, within the field of neurosciences. The study offers a brief introduction to neuromarketing research, while focusing on the theme of ethical sustainability, proposing some possible solutions, with specific examples in the field of wine marketing.

Also, in the field of social media, Chap. 7 examines 'The influence of Facebook discussions on purchase intention and word-of-mouth'. The main question driving the study concerns Facebook discussions, their perceived credibility, and how they are linked to behavioral intentions. After reviewing relevant literature, the first part presents a research model linking seven constructs. In the second part, H. Krasila, H. Karjaluoto and Munnukka Juha have tested the research model and hypotheses with a sample of 151 consumers from one Facebook group dealing with shoe recommendations for kids. Out of the seven hypotheses tested, six were supported. The findings reveal that the higher consumers rank the Facebook comment writers in terms of their expertise and trustworthiness, the higher the perceived WOM credibility is. In addition, the results reveal that perceived WOM credibility is strongly linked with brand awareness, purchase intention and WOM.

Chapter 8, 'Discourse on Method: Rapid, efficient, cost-effective creation of "wikis of the mind"', presents a process to create an integrated database of the mind concerning how people decide when presented with a topic or problem and combinations of metaphors representing solutions. The authors (Howard Moskowitz, Arthur Kover, Stephen Rappaport, Ariola Harizi, Petraq Papajorgji, Ardita Todri and Laura Stefania Rodriguez Bejarano), use an experimental design to create test combinations of solution statements (vignettes). The respondent evaluates different scenarios (or vignettes) created using the experimental design theory. Each vignette represents a metaphor for the solution to the problem, and it is presented to the respondent using a Likert scale. The data are then subject to OLS (ordinary least-square) regression at the level of the

individual respondent to derive unique decision rules. Data mining and clustering technologies are used to group similar respondents into mind-sets. The process is generalized so that the same experiment structure can be used for several dozen different problems. The process is illustrated by addressing 27 social issues and a set of 16 metaphors representing solutions.

Moreover, the next two chapters in the book concentrate on health sector. Chapter 9, 'How Technologies Assessment Conceptualization and their Certification could help the Medical Business Boosting Performance', by Larisa Mihoreanu, looks for innovative standards of quality in the health sector, through continuous assessment of technologies and care services evaluation. The analysis is current as it takes place in the light of ongoing pandemic (COVID-19), and the need to increase responsiveness and resilience worldwide. The comparative analyses show that health technologies assessment's alignment with international requirements brings all medical businesses to conformity and assures their fair, legal and ethical regularity and consistency.

Chapter 10, by Lior Naamati-Schneider, concerns an exploratory study conducted in dental clinics. It presents the mapping of perceptions and difficulties in adapting to a competitive market in the digital era. The study, presents the highlights of a qualitative pilot study of dentists who run private clinics in Israel. It sheds light on how health organisations, such as private clinics, adapt their management structure to a competitive market in the digital age and the obstacles they encounter. The findings fill a knowledge gap in this field, enable a better understanding of the functioning of health organisations and private clinics, and are the basis for recommendations and action plans that can benefit both health systems and their clients worldwide.

Then, Chap. 11, is titled 'Social Marketing, nudging policies and consumerism: advancements through technologies from neuroscience'. Myriam Caratù reviews the state-of-the-art of consumer neuroscience inter-discipline, applied to the concerns of consumerism. At the same time, it answers questions such as: is this niche methodology destined to be the next main one in the consumer and consumeristic research? What are the challenges and the difficulties to overcome in this sense?

The final chapter of the book is reporting from the education sector. Chapter 12 is titled 'Inclusive Online Collaborative Learning Environments in Vocational Education'. The authors (Hans Rüdiger Kaufmann, Anna Kurth and Lars Schäffner) propose a comprehensive model on online collaborative learning environments that holistically takes infrastructural factors, pedagogical principles, the interplay between technology and pedagogical principles, cultural differences and inclusion aspects into account to elevate the topic onto a more strategic level. In addition, the contribution presents the results of the still ongoing triangulation research validating the initial model by both, qualitative research (focus groups in the project participating countries having applied content analysis) and quantitative research (survey with online questionnaires in the project participating countries having applied multivariate analysis).

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