

Empirical Study of Digital Marketing in Modern Age

Dr. Chitranshi Verma

Asst. Prof., Department of Management, St. Aloysius College (Autonomous) Jabalpur, M.P., India

Abstract: *In the present context, the entire marketing gamut has revolutionized due to the advancement in technology and digitalization. Digital Marketing has forayed into all the sectors of economy and has elevated the standards of marketing communications. Marketing is going beyond advertising and promotion, digital access to the brands is bridging the gap with consumers. Real time access to support and services have become possible and easily deliverable with the technology that has emerged as a game changer. This paper is trying to analyze how digital marketing has ventured and transformed into technology driven economy. The usage of data analytics, AI tools, bots, E-CRM have helped the marketers in making well informed decisions in all the domains of marketing and business at large.*

Keywords: Digital Marketing, Marketing, Business Analytics, Big Data

1. Introduction

With the advent of technology, digital marketing has grown manifold. The increasing popularity of this concept can be owed to the easy accessibility and availability of digital services and devices. The studies have shown that there were around 5.07 billion users of internet round the globe, which accounts for 63percent of world's population. From SMS to social media, there are numerous ways to reach out to the targeted audience. Moreover, digital marketing tools and tactics prove to be very cost effective either for small or large businesses. In the internet savvy world, digital communications with consumers through numerous platforms have helped the marketers in enhancing their presence and promoting their brands.

2. Objective

The present paper is an attempt to understand and analyse the use of digital channels, social media and web-based advertising by marketers in understanding the consumers perspectives and how can they bridge the gap in the consumer market.

3. Research Paradigm and Methodology

The present study is undertaken with help of literature review of available secondary data. This study is descriptive and exploratory in nature. An attempt has been made to extensively review the past studies of highly authoritative resources. For extraction of data various journals, papers and websites have been reviewed. It is open-ended research based on studies and trends prevailing in past and present scenario in the field of digital and online marketing. This paper is further pliable for further studies and investigation due to the advent of changes and revolutionary innovations in the field of technology and automation. This work would serve as elementary study for future researches in this discipline.

Health Wearables: Ensuring Fairness, Preventing Discrimination, and Promoting Equity in an Emerging Internet-of-Things Environment

The digital marketing system can easily check and keep track of online consumer behaviour patterns through various health apps which are installed in mobiles and other smart devices and through various fitness gadgets and wearables (Montgomery & Kathryn 2011). The synchronisation of collection of data and marketing system owing to the advancement in data analytics programme, growth of numerous digital platforms, and due to the innovations in online tracking techniques has led to the Big data era (Tufecki 2014). Big data is characterized by its enormous amount, the faster speed at which it is generated, processed and analysed, its wide variety, its significance (Cai & Zhu 2015).

With the proliferation of software and tools of analysis, the activities of digital media companies and their sponsors have grown manifold, enabling them to gain deeper insights from the easily accessible huge amount of invaluable data around the world (Smith 2014).

The wide span of consumer practices and behaviour, their interests, opinions, activities and transactions, especially on smart devices can be easily gauged and scrutinized through the detailed and prevalent system (Campbell et. al, 2011). In this evolving phase of wearables technology, various new and innovative methods of data collection have evolved and has become the mainstay for the consumers experiencing it (Rejeb et. al, 2020). Many of these methods have been derived from the traditional Big data digital marketing practices which are in use currently on various smart gadgets and devices designed to optimize the exceptional capabilities of wearables and their part in the regular routine of end users. (The White House 2012); (Montgomery et al., 2018, p.37).

Big data is the mainstay for the major public enterprises which are accustomed to promote significant health and welfare, to resolve issues in our present medical system, keeping it economical and accord advancement in end results (Department of Health and Human Services 2017).

The Affordable Act of 2010 also laid down the provisions by which medical practitioners can easily maintain and monitor the patient health records digitally and at the same time providing the access to patients to keep track of their health records (Federal Mandates for Healthcare 2016). On the same guidelines, the health information Technology for Economic and Clinical Health Act (HITECH) developed the position of the National Coordinator for Health Information Technology (ONC) under the HHS, the department of Health and Human Services in 2009 which was delegated with the responsibility of enabling the individuals to gain better access to health care through Health Information Technology. The primary aim of this act is to develop the learning health system which would cater to both individuals and medical professionals and would pave way for continual upgradations in the line of treatment by the optimal use of IT systems (Greene et al., 2012). It also encompasses an information technology framework with the help of which the individuals can get access to not only the electronic records but also data from various other platforms which individuals have accessed at some time, and gives the holistic view of their health. This framework also helps numerous other government agencies and researchers who are involved in health care to access, design and develop the state-of-the-art medications and therapies (Department of Health and Human services 2017).

The concept of precision medicine which is based on new technologies to point out and track the differences based on environment, genes and lifestyles has evolved and has changed the the conventional system of healthcare leading to customize solutions for ailments (Burwell & Monaco 2015). It is a field of new genetic study which helps in knowing the structure of gene and its repercussion upon its interaction with the environmental factors. It helps in creating customized approach in identifying the individual at risk, its underlying cause and the way in which that condition can be treated (Hizel et al., 2017; Montgomery et al., 2018).

The huge capital funding for technology in physical fitness and medicine has a significant bearing on the health well being and wearables market. Corporates engaged in pharmaceuticals or health care are easily obtaining lump sum investments for extensive range of discoveries and for setting up digital enterprise in order to smoothen and transform the traditional health care facilities. Approximately, funding of more than \$4 billion was infused in the year 2014-15 in the digital health technology comprising of technical gadgets that can be worn, biosensors and various other kinds of hitech equipment and gadgets based on the individual health records and updates (Google ventures 2017). As per the reports of Price water house Coopers, all these developments in the market have led to the New Health Economy which in turn have revolutionized the contemporary business models. The practices and processes are being restructured and reformulated under the influence of various universal issues like-cost concerns, upsurge in the number of long-term disorders and ailments, older population, upgradation in technology,

increasing competition in market (PwC 2017). New health economy is creating a inter connected health infrastructure which includes health resources, digital tools and techniques to provide for individualized well-being and health care. It also takes into account research and development, innovation of health care facilities and equipment etc. (PwC 2021).

The frontiers of medical facilities and the electronic markets are disintegrating in this new health economy. From the past few years, various specially designed resources providing Big data facilities to the vendors have also evolved. For instance, Data management platforms provide the vendors with consolidated standard for managing their entire set of consumers and campaign information (BlueKai 2017). This is done by collection and analysis of information about consumers from the varied online and offline sources. This comprises of varying degrees of information groups like “first party data” which can be obtained from the personal record of individuals, like their transactions through their electronic devices; “second party data” which can be gathered by some other organizations like online publisher and “third party data”, which can be collected from various other resources and can comprise of their demographic and financial details (Lotame2013). This entire gamut of data can be synced to further develop the refined niche customer base and to track and focus them throughout the third-party ad networks and exchanges. Such ad networks, data management platforms, identify the campaigns which are best executed and implemented all throughout the different platforms and audience base with great precision and which can be further used to streamline the media procurement in future (BlueKai 2017). IMS Health, a data management platform and cloud-based computing service engaged in health marketing, suggests that the health profile of individuals can be significantly examined and controlled by gathering their observable and profile data from all the entities of the public health environment which comprises of the medical professionals, the patients, buyers and other representatives (Etwaru 2015; (Montgomery et al., 2018).

The advertising agency is all preparing itself to harness the potential of wearables. Ad firms and other data collection organizations are very actively engaged in taking opportunity of the new gadgets representing their clients (Partner forum 2015). In the latest analysis by an e commerce marketing agency, the electronic wearables are very much capable of providing very minute details on varied observable and transactional data. It takes into account the wide span of user activity and their state of mind and well-being. Majority of the marketers under study are interested in knowing the life style information about their customers from these gadgets. Smartwatches are deemed to be another layer of screen in the contemporary cross screen marketing system whose usage is increasing manifold from the past few years (Criteo; Martin 2017). Cross screen marketing system is a process whereby the marketers try to create the unified campaigns that would bind together all the electronic gadgets and devices, cellular smart phones, tablets, desktops and laptops. Through such a system in place, the electronic

platform is readily available to the marketers which provides them easy and steady access to their audience segments (Laroche et al., 2014). There is much emphasis laid on connecting the non-electronic information with the behaviours that consumers display online and also amalgamate the therapeutic and clinical information with the non-clinical records to interpret and forecast the well being status quo (Gupta 2015).

Wearables have emerged remarkably as a medium which are enabled to perform the critical function of accessing the particularized observable statistics about clients (Transformational Technology 2016). Like for instance, the company 'Under Armour' is intending to its consumers who are accessing its various health care applications - My fitness pal, map my fitness etc. on their devices, through its 'Connected Fitness' ad network (Under Armour 2017). Various surveys undertaken for digital marketing organizations have revealed that wearables along with other paired gadgets are going to provide the incrementally substantial prospects of all the users. In the developing digital world, these wearables exist parallelly with smart gadgets like web enabled televisions, watches, high end mobile phones, tabs, health care equipment and numerous other contact sources easily available in the surroundings (Criteo 2017; Montgomery et al., 2018).

Apart from the various other stakeholders in the developing digital and associated health set ups, the organizations engaged in medicine are assumed to be the ones who would be gaining considerably out of wearable marketing. Among the developed nations, only the United States and New Zealand are allowing to promote through direct-to-customer channel for the medicinal merchandise. Despite of governmental administration in promotion of commodities of pharmacy, there are several flaws in the system which have capacitated the companies to embark upon heavy promotional activities. The budget expenditure of direct to customer promotion has risen to whopping amount of more than \$4.5 billion in the past few years (Staton2015). Although the major chunk of budget has always been set aside for promotion through TV broadcast, the pharmacy corporations are venturing actively towards the digital platform which is proving to be very economical method of easily reaching out to the masses (Ventola 2015). Representatives from Wharton, Mckinsey and Google have recommended the health and medical sector to adopt three D's of digital marketing - discovering the insights about clients decision making, then designing the products and offers in accordance to that and finally delivering them to the target audience so that they can be much more benefitted (Bell et. al., 2016; Montgomery et al., 2018).

Congruent processes are already developed by medicine and pharmacy sector to identify and focus their clients on the basis of any specific illness or situation. More commonly termed as Condition targeting which has grown manifold in this world of digitalization. The advertising agency Adprime provides identification of clients on the basis of various conditions like cancer, diabetes, coronary illness, various kinds of immuno-deficiencies, mental well

being and disturbed sleeping patterns. The organization aims at catering behavioural and script targeting services on the basis of analysis of prescribed medicines with the help of which companies can easily reach out to their clients by way of treatment and diagnosis.

Condition targeting also takes into account the count of online queries by patients needing assistance on health and medicine. Studies have shown that out of 100 consumers surveyed, 70 of them would access the digital platform to seek any clarification about health issues. Out of 20 queries in google search engine, one is always related to health and well being. Approximately, half of the clients seek for information on feedbacks and reviews on medical practitioners. Global studies have proven that African, American, Latin communities are more dependent on their digital devices to seek health related information (Anderson 2017; Montgomery et al., 2018).

Digital Marketing in the disinformation age

The framework of various social media platforms is very much impacted by digital marketing. Empirical researches and the existing body of knowledge has shown that development in most of the digital media interfaces like Facebook's timeline or Twitter's trending is facilitated in such a manner where the users can freely express and demonstrate their thoughts and feelings. (Papacharissi 2016; Dijck 2013; Marwick 2015). One of the ex-officials of Facebook acknowledged the fact that the company has created its terminal with the objective of making the portal compulsive to augment the production of remunerative data from the users (Glum 2017).

The architects of Facebook projected that users exhibiting their social connections, affiliations, associations and commendations would capture dividends to optimize their addictedness to the portal (D'Onfro 2018, (Guilbeault 2018).

Digital marketing transliterates straightforwardly into enticements for extracting individualized content as it enables these portals to merchandise the data to other parties and further this content can also be used to filter their artificial intelligence theorems, which are supposed to be one of their highly appreciated products (Martinez 2016). Social media companies work upon this individual content to create prognostic model of consumer buying attitude and marketers endeavour for such models in the open market (Turow 2011; Turow 2017). With the help of these constructs, social media platforms can track all the posts and content of users in real time (Davidson 2017). These kinds of huge databases are very valuable for marketing and promotion firms which are unceasingly involved in taking advantage of consumers concerns and emotions of self-contentment to sell their offerings in markets (Bakan 2011). Due to exploitative nature of merchandisers inducements, the United States sanctioned the Children's Television Act (Pub. L.101-437) and the Children's Online Privacy Protection Act (Pub. L.105-277) to administer control on the communications targeted at children. But various social media portals do not come under the purview of such legislations as under the

Communications Decency Act (CDA 230), such platforms express themselves as passive dealers of consumers content, without engaging in modifying or corroborating such data (Ehrlich 2002; Hwang 2017); (Guilbeault 2018, p.35).

Not taking into account the social interventions by external bodies as the source of disinformation can be misleading. For example, there is a dubious stress on the capability of Russian hackers and application programmers who tampered electoral process purely on the basis of their high-tech dexterity. In actual, their strategies capitalize on the existing set up which is currently accessible on social networking website (Madrigal 2018).

According to the report on the digital advertising industry named "Russia's Election Interference is Digital Marketing 101" (Ghosh & Scott 2018a; Ghosh & Scott 2018b;), Russian intervention in the electoral process of 2016 applied the mechanisms of Facebook for micro directing and promotional activities. Such services of Facebook accelerated these movements by giving the platform to manufacturers to aim at the group of consumers on the basis of ethnic background, gender, association with political groups and other trending classes (Beck 1983; Angwin 2017).

Several other players within the geographical spread can also take advantage of this impact machinery which is embedded in social networking websites. Zuckerberg elucidated that in the year 2013, how a person at Cambridge University drafted a temperament quizzing app which provided easy reach to personal whereabouts of numerous consumers on that networking portal because of the website's lenient policies during that period (Guilbeault 2018). Despite of restricting and reframing of the policies in 2014, the data was transferred to external agency which in turn mobilize this information to fuel the electoral crusade for the presidential seat in US (Confessore 2018).

The predominant deliberation of Russia's intervention has focused specifically on sole scientific know how about bots. The most common illustration showcases bots as highly advanced automated machineries which can be controlled and directed and were put to use by some unethical systems programmers and computer nerds. This seems to be inappropriate for two rationales, first is that bots are not just artificial intelligence meant for external disturbances, but as a matter of fact, the original proofs of bot application was found in Massachusetts in 2010 (Panagiotis et. al, 2012; Guilbeault & Woolley 2016). The other is that bots are not very refined as they commonly work on simpler algorithms that even any novice techie can execute (Woolley & Howard 2016). Their potentiality to affect the human beings is largely dependent on the manner in which the interactive lineaments and various tools are put to use (Guilbeault 2016). Non coders can easily retain bots from various portals in operating markets on the internet. Social networking website Facebook affirms that by using dual factor verification, the company is able to substantially reduce the number of

bots from its portal, but since many spurious profiles have been in existence by several subscribers over a long period of time and so are fully validated and therefore cannot be easily identified from the authentic ones (Guilbeault, 2018).

The advertisers who generate earnings for these social networking websites are also providing to the advancement of technical know how which is further put to use for raising deceitful movements. Both the companies namely Twitter and Facebook have worked hard on structuring rules and regulations to avoid bots probably for inconsistent motives (Gorwa & Guilbeault 2018). These networking portals are in lucrative position due to bot enabled activities, which mobilize the subscribers activities leading to sharing and dissemination of multimedia content. In addition to this, Facebook has made huge investments in AI based applications which can be used for support services for users and for marketing promotions digitally (Constine 2017; Tarrand 2017). Following the suit, other leading tech companies like IBM are also making investments in Artificial Intelligence enabled gadgets and devices, which can interact with consumers and also develop prognostic model of their buying attitude (Guilbeault & Finkelstein 2018).

Contemporarily, the social networking portals are also accountable for handling any false information's misleading the public at large and the bot technologies. In one of the legislative sessions of the US, the owner and founder of one of the leading social networking sites confirmed the use of various intrinsic controls being exercised. For instance, Facebook has mandated for all promotions relating to politics to be linked with particular pages clearly stating their sponsors and promotional strategies used in past. Various social media players have extended their approval for the Honest Ads Act 2018 which is meant to implement and exercise control on electoral campaign promotions on mass media and social media as well. This act would mandate all advertisers on various networking platforms to reveal the expenses and sponsors and for whom the entire campaign has been intended. This Act is also supposed to tighten the control on any international funding in such campaigning.

Despite of strict standards being set in place, there are certain areas where the media corporates can have their own practices designed suited to their needs. Facebook has strategized to curb the spurious matter by means of down voting option enabled. These system checks are guided by Katie Harbath, director of Facebook's International team who takes care of government and politics and who has also been a Republican digital strategist. His principles resonated that by multiplying the volume of activities of social networks, a unified approach would develop to screen the correct matter from the false information (Ferguson 2017).

One of the creators of Twitter Evan Williams has clearly stated that if all the users on social media portals honestly share their opinions and knowledge on web, it would be of great significance to the society (Streitfeld 2017,

Guilbeault 2018). The progressive principles of various social networking websites stimulate such behaviour which also leads to circulation of false and incorrect information and also gives rise to increase on click bait content resulting in higher usage rate by subscribers (Vosoughi et. al., 2018). The general mass is not able to get clear picture about Facebook's strategy whether it is guided by the progressive mindset or by their organizational motives (Guilbeault 2018).

4.The separation of platforms and commerce

Prominent networking websites act as demanding mediators for e-commerce and public relations at large. Because of the imperative tasks these social media players are performing, the legislative authority in the United States named Facebook, Google and other such providers as "modern public square" while the counterparts like Amazon have been termed as nineteenth century railroad (Ramirez 2019). Various authorities all over the globe have started examining the dominance of these social media players in the market (Australian Competition & Consumer Comm'n, Digital Platform Inquiry 2018). Different social networking portals have altogether different business structures, processes and flow of activities and different target audiences. Despite of differences in their operations, business models, processes, altogether different target set of customers, there's one remarkable aspect which is common to these portals is that they perform the functions of both service providers who caters services to external vendors, application architects, content planners and as a market player who is in competition with the same set of manufacturers (Khan 2019).

In the initial phase, Amazon performed as an online merchant wherein it used to fetch the merchandise directly from wholesalers at discounted prices and then further sell it to the end users at market price. It was in the year 1999, when the company launched online services for auctions and an initiative known as Z shops which allowed the merchants to list their items directly on Amazon market place and sell to the consumers (Zhu & Liu 2018). This concept of fixed price shops at Amazon portal facilitated the wholesaler merchants to have control over the market pricing and shipping (Weinstein 2018). This move of Amazon of welcoming the merchants on its portal remarkably widened the range of merchandise listed on its platform, thereby making it free from holding the large inventory of goods (Khan 2019). This initiative of the company has made it occupy the position of market leader in the electronic marketplace in the United States. Studies have shown that approximately 54% of the product related searches originate from Amazon and the portal is also estimated to acquire 52.4% of the United States online shopping budget (Garcia 2018). Amazon's presence in online market place is greater than twice the share of total market of its next nine such portals in competition and also the studies have shown that merchandisers account for 90% of their revenue generated through Amazon (Soper 2019).

Being listed on Amazon is inevitable for most of the vendors. Revenue generation through its electronic platform is very flourishing component of Amazon's business in totality (Dzieza 2018, Khan 2019). Marketplace sales are a lucrative and booming part of Amazon's overall business (Amazon annual report, Jan 31, 2019). Apart from providing market platform to external vendors, Amazon also forayed into marketing of its own brand products on its portal. It initiated by providing personal branding in the year 2009 by selling items like batteries and HDMI cables (Kim 2018). In this long span of more than 10 years, its personal branding has grown to cover varied range of products like toys, footwears, garments, other wearables, household and décor items, beverages and eatables, baby products, medicines, towels, wipes, pet foods etc. Amazon has grown to around 137 own brands wherein one brand accounts for more than 1500 different merchandises (Murphy 2017, Khan 2019).

It is believed that actions taken by Amazon to sign some mutual agreements with other trade names could be taken as the company's strategy to fight fake and spurious products which were seriously impacting Amazon (Alvarez 2018). But actually, Amazon has also wisely decided whether to exercise control on spurious brands only if they are listing and marketing their goods through Amazon. For instance, sports goods manufacturer Nike never listed its merchandise on Amazon for many years for the same reason where few merchants were marketing both fake and original Nike merchandise on the marketplace, so eventually Nike entered into an agreement to sell in wholesale to Amazon as it imposed stricter regulations on imitated goods (Stevens & Germano 2017).

A company official from Birkenstock which has refrained itself from listing its merchandise on Amazon since 2017, expressed that the shopping portal Amazon can thoroughly exercise its policy of preventing copied merchandise from listing only when any vendor can fully list its complete range of offers with Amazon (Levy 2016). Vendors realised that in order to overcome any issue on portal regarding their product listing, they should have greater degree of association with Amazon which could provide them easy accessibility to vendor's business insights and enable them to earn higher profits and exercise better control (Angwin & Mattu 2016). Also, Amazon initiated new service for \$ 30, 000 to \$60, 000 for vendors to keep a check on imitators. Expansion in digital advertisements by Amazon advocated the suppliers to promote themselves to ensure good visibility among consumers (Reilly & Stevens 2018, Khan 2019).

Apart from implementing direct sales Amazon also suggested the merchants to frame their own retail strategies. Owning huge digital marketplace, Amazon is unmatched in its ability to gather and analyse the electronic commerce information. Amazon keeps a track of all consumer transactions and sales records in very advanced and precise manner (Freeland 2018). Besides keeping track of all overall purchase trends, Amazon maintains the micro details of consumers activities on its portal as to at what price level consumers are inclined to

buy or for how much time the consumer was on any product page or the responses of consumers towards any particular image or clipping of any merchandise, which adds to the ever growing depository of market acumen and knowledge base (Freeland 2018). It is in the similar fashion as physical retail stores keep track of number of visitors in their store, but also which products were much viewed and inquired, as well as the entire purchase negotiation and dealing and all consumers feedbacks and responses. Such reports of Amazon are collected not only on Amazon listed merchandises but also on third party vendors giving Amazon the hold of more than 50% of online shopping in the United States (Khan 2019).

Researches proved that Amazon utilize this database of market intelligence to cater to both its retail segment and its personal brands. In many instances, Amazon has taken over dominant products in the market and procure them directly from the suppliers thereby preventing the third party vendors to appear in search results (Bensinger 2012). Amazon's personal brand also monitors and tracks the much demanded merchandise in the market. One of Amazon's in house brand Amazon Basics in the initial years focused on general items like DVD's, batteries etc, gradually it forayed into wider range of products (Soper 2016).

In the initial years of its launching the house brand of amazon was operating passively as it was holding and tracking the business insights of other popular brands in market. Using its arsenal of market intelligence for progression, Amazon enlarged its online presence by widening its product line by adding huge range of merchandise to its Amazon Basics (Khan 2019). Studies have shown that with the advent of Amazon in direct competition with the external vendors has not impacted the price of product or satisfaction level of customer but discourage the vendors from promoting their offers on its portal.

Another sphere in which Amazon is proving its mettle is voice computing segment where it both acts as a primary service provider and also competing with similar platforms. It started its voice assistant market in 2015 with the launching of Echo, its blue tooth enabled smart speakers having artificial intelligence software installed in it. It got its first mover advantage in this segment in the market (Khan 2019). Another company Alphabet, the founder company of Google made its dominant share in the market in the realm of artificial intelligence, digital marketing, biotech broadband, Android, Chrome, Google search, Cloud computing services, Youtube, Google Maps (Hartman 2018; Khan 2019).

References

- [1] Antonio Martinez (2016), "Chaos Monkeys: Obscene Fortune and Random Failure in Silicon Valley", New York: Harper.
- [2] Bakan, Joel (2011), *Childhood Under Siege: How Big Business Targets Children*, New York: Free Press.
- [3] Cai, Li, and Zhu, Yangyong (2015), "The Challenges of Data Quality and Data Quality Assessment in the Big Data Era" *Data Science Journal*, 14.
- [4] Confessore, N. (2018), "Cambridge Analytica and Facebook: The Scandal and the Fall Out so far", *The New York Times*, (April 4).
- [5] Dijck, Jose V. (2013), "You have one identity: Performing the self on Facebook and LinkedIn", *Media, Culture & Society*, 35 (2), 199-215.
- [6] Ehrlich, P. (2002), "Communications Decency Act 230", *Berkeley Technology Law Journal*, 17 (1), 401-419.
- [7] Gorwa, Robert and Guilbeault, Douglas (2018) "Unpacking the Social Media Bot: A Typology to Guide Research and Policy", *Policy & Internet*, 10 (2), <https://onlinelibrary.wiley.com/doi/full/10.1002/poi3.184>.
- [8] Greene, Sarah M., Reid Robert J, and Larson Eric B. (2012), "Implementing the learning health system: From concept to action", *Annals of internal medicine*, 157, 207-210.
- [9] Guilbeault, Douglas (2018), "Digital marketing in disinformation age", *Journal of International Affairs*, 71 (15), 33-42.
- [10] Guilbeault, Douglas (2016), "Growing Bot Security: An Ecological View of Bot Agency", *The International Journal of Communication*, 10, 5003-21.
- [11] Khan, Lina M. (May 2019), "The separation of platforms and commerce", *Columbia Law Review*, 119 (4), 973-1098
- [12] Laroche, Michel, Kiani, Isar, Economakis, Nectarios, Richard, Marie O. (2014), "Effects of Multi-Channel Marketing on Consumers' Online Search Behavior: The Power of Multiple Points of Connection", *Journal of Advertising Research*, 53 (4), 431, DOI: 10.2501/JAR-53-4-431-443.
- [13] Marwick, Alice (2015), "Status Update: Celebrity, Publicity, and Branding in the Social Media Age", *New Haven, NJ*, Yale University Press.
- [14] Metaxas, Panagiotis T., and Mustafaraj, Eni (2012), "Social Media and the Elections", *Science*, 338 (6106), 472-473.
- [15] Montgomery, Kathryn C. (2011), "Safeguards for Youth in the Digital Marketing Ecosystem." In *Handbook of Children and the Media*, second edition, Dorothy G. Singer and Jerome L. Singer, eds. CA: Sage Publications, 631-48.
- [16] Montgomery, Kathryn, Chester, Jeff, and Kopp, Katharina (2018), "Health Wearables: Ensuring Fairness, Preventing Discrimination, and Promoting Equity in an Emerging Internet-of-Things Environment", *Journal of information policy*, 8, 34-77.
- [17] Smith, Cooper (2014), "Reinventing Social Media: Deep Learning, Predictive Marketing, And Image Recognition Will Change Everything", *Business Insider*, 20 (March)
- [18] Stanley, Jason (2016), *How Propaganda Works*, Princeton, NJ: Princeton University Press.
- [19] Tarrand, Alex (2017), "Facebook Messenger Bots: What Every Marketer Needs to Know", *Adweek*, 29 (December)

- [20] Tufekci, Zeynep (July 2014), "Engineering the Public: Big Data, Surveillance, and Computational Politics", *First Monday*, 19 (7)
- [21] Turow, Joseph. (2017), *The Ailes Have Eyes: How Retailers Track Your Shopping, Strip Your Privacy and Define Your Power*, New Haven, CT: Yale University Press.
- [22] Ventola, C. Lee, "Direct-to-Consumer Pharmaceutical Advertising: Therapeutic or Toxic?", *Pharmacy & Therapeutics*, 36 (10), 681-84.
- [23] Vosoughi, Soroush, Roy, Deb, and Aral, Sinan (2018), "The Spread of True and False News Online", *Science*, 359 (6380), 1146-51, <https://doi.org/10.1126/science.aap9559>.
- [24] Woolley, Samuel C., Howard, Philip N. (2016), "Political Communication, Computational Propaganda, and Autonomous Agents: Introduction", *International Journal of Communication*, 10, 4882-90.
- [25] Zhu, Feng, Liu, Qihong (2018), "Competing with Complementors: An Empirical Look at Amazon.com", *39 Strategic Mgmt. J.*, 2618, 2623-24