

# The New Era of Digital Transformation in Healthcare: “Emerging Technologies for Value-Centered Marketing in Healthcare Ecosystem”

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**Abstract-** In an increasingly digital competitive environment, especially in the healthcare ecosystem, digital transformation leaders have an important role, with only a handful of companies evolving into more upgraded digitalisation systems. To renovate experiences of customer, companies required to adapt digital marketing achievement in the drastically modified digital era, reinventing marketing with this kind of travel in the healthcare industry. Also, it is very important to evaluate the impact of digital transformation over the professional competencies and the cutting edge of digital marketing in healthcare industries, which are an integral part of some organization, is to improve digital marketing capabilities as well as invest in current skills training. One way to think strategically is to attract and give alternative services health quality that guarantee their likelihood and satisfaction of recommending additional health care. This research demonstrates that social media sites play a significant part in promoting social networking. The results of this research showed that digital approaches are necessary to improve medical services to expand an enterprise. Although healthcare IT (HIT) has effective and efficient potential for increasing quality as well as decrease costs in healthcare ecosystem, major challenges have to be addressed, especially in the healthcare sector. This potential has to be fully realized. Research provides true lessons and evaluate the outcomes in learning importance of digital transformation to improve healthcare ecosystems knowing the importance of technology innovation to enhance environments.

**Key words-** Electronic health records, Healthcare transformation system, Health information technology, Value-Centered marketing, digital marketing, promoting social media, Digital transformation, Digital era, Digital marketing success, Digital marketing skills.

## **Introduction:**

The role of marketing with digital transformation in improving healthcare industry:

In this digital era of healthcare the broad perspective of relationship is becoming increasingly important, healthcare advertisers are being persuaded that the patients become more interested to access information that enable them to empower them with new technical innovations, digital health techniques which are boosting patients' awareness, safety measures in proper controlled manner. (Purcarea, 2016).

It can be little more than a declaration to determine the vital significance and absorb most important national dramatic challenges confronting our nations today climate and employment change, health safety and status, poverty as well as well- being of people plays a crucial importance and consumes most of the significant national resources. (Institute of Medicine 2000).

The reality that the American health insurance process is also unreliable and provides fewer effective digitisation facilities in the health-care sector allows paper-based patient reports part of the explanation. Such reporting systems do not enable policy makers in the markets to regularly access crucial pieces of clinical information when making their clinical decisions which result in the disclosure of resources or medical errors. The large and profound usage of HIT “Health Information Technology” in the health- care sector will minimize and boost costs by digital transformation in the environment, along with other complementary modifications (Instituto de Medicina 2001), although the benefits and potential unintentional effects remain challenging to understand. (Institute of Medicine 2000).

Digital transition in healthcare provides us with a forum that absorbs our mutual experience and bursaries with sufficient tools for conducting research work which can educate public deliberations, digital system and competitive marketers to engage effectively in national healthcare change discussions.

This statement offers an description of the present situation for providing the analysis of the present HIT studies status. In order to resolve the digitalization, we then recognize critical study problems that are unattended, as well as suggest appropriate approaches.

*“Today healthcare system is undergoing a major transformation fueled by regulatory shifts and technological advances (Porter and Rivkin 2000). New policies are pushing healthcare organizations to contend with a paradigm change where value is rewarded over volume, and where the nature of competition is being radically altered (McClellan and Leavitt 2016)”*

Technology advancements have increased clinical analytics' popularity as a method for assessing and generating interest in hospital marketing (Agarwal et al. 2010; Bates et al. 2014). A broad range of technology has enabled market penetration in a number of structured as well as unstructured forms to collect vast quantity of granular data related to health. Such advances allow it possible to shift to value-based care that allows outcomes to be assessed and quantified (World Economic Forum 2017).

The shift to value oriented offerings and accelerated technical and empirical advances pose new problems and opportunities that are ideally tailored to the marketing emphasis on the growth of consumer satisfaction. While it is not historically a central area for digitalisation, such incentives are now recognised by marketing experts (Nakata et al . 2019; Spanjol et al . 2015).

*VCM “Value-centered marketing” in healthcare is characterized as the methods used to identify, delivering and quantify value for health promotion and disease treatment.*

#### **The main objectives of this research are:**

1. In order to present value-centered marketing structure.
2. In order to define the supporting role for value-centered marketing in analytics as well as health technology.
3. In order to identify significant value-centered marketing research gaps associated with process, precision, and preferences.
4. Focus on unintentional effects and the concept of justice in technical and theoretical healthcare delivery.

#### **Overview of Existing Research**

A huge literature review is present on Hospital Information Technology with respect to digital transformation of marketing, and this statement is within the reach of a comprehensive overview and

analysis of every published research. Our analysis shows that Value-Centered Marketing study is based mainly on two subjects: the effect of Digital Transformation on health results as well as problems of HIT acceptance. We propose specific concepts to structure this literature: synthesize the results of previous studies.

While a increasing number of studies are reported in clinical journals, Medical Technological Journal, though limited paper are published, National & International journals. We summarize many representative clinical trials, on New Era of Digital Transformation of Marketing services especially in Healthcare Industry, published in recent years on the modern age of the digital transformation of marketing services, and referred publications to the literature reviews as needed.

#### **Value-Centered marketing:**

#### **Healthcare Industry Ecosystem**

We start by offering a brief description of the dynamic relationships among different players in the ecosystem-policy makers/ regulators, suppliers, payers (governments and insurance networks), providers, along with consumer. The major requirement of consumer is illness treatment along with wellness promotion. In view of the costs of treating severe diseases as well as even drugs, the industry has gradually evolved into one covered by insurers, which covers hospitals and service providers in large insurance networks. (The Greenberg and De Lew 1992)

Suppliers to provide a customer (patient) with drugs as well as another items are usually supplied by the suppliers, but paid by the contributors. The government tried to control suppliers, providers, and payers. (De Lew and Greenberg 1992)

Although customers and end users of healthcare services and products are the primary generators of demand, interestingly, they are seldom at the center of the health environment. Typically, health care delivery interactions have affected occupiers, suppliers, and providers. This often does not assign importance to positive health conditions or take consumer choice into account which may contribute to the unnecessary over- supply of resources (Porter which Kaplan 2016).

To order to resolve such issues, a modern method for the introduction of the volume-based framework such as digital payment is actively introduced (Burwell 2015). Value-based schemes are built to improve effective coverage for healthcare sector consumers, thus growing costly and

needless obstacles in the delivery of services. (Medicare and Medicaid Services 2017a)

### **Need for Value-Centered Marketing**

Marketing efforts depend on, revenue in the conventional volume-based framework which are geared to health providers and not to customers (Schwartz and Woloshin 2019). Additionally, commercial insurance services recently introduced regular outreach campaigns that have historically concentrated on business and not consumer clients. (Hadland et al. 2018; Hadland et al. 2019); and The goal is to encourage particular patients to select the strategies and physicians that match their desires and priorities and eventually contribute to better results for patients (Rice 2013).

Opposing the edge of healthcare advertisement, current demand dependent paradigms have clearly lost customer appeal. It has contributed to an immediate need for the health marketing ecosystem to be reconceptualized and eventually to offer customer interest a central position (Lynn et al. 2015). Along with the acceptance of the new marketing strategies in the industry, to grow further development of value centered marketing era with digital transformation, leading to more technological advancement ahead in the healthcare based systems.

Therefore, this analysis focuses specially on developing health technologies as well as analytics are significant in order to improve service for customers, specifically for patients who required clinical care, however this research also emphasis on the role of different stakeholders in the system (Lynn et al. 2015).

### **“With Emerging Technologies and health analytics, offering a marketers a robust set of opportunities”**

The aim of VCM for quantifiable value development across the key dimensions of process, precision, and preference. VCM has to be based on data as well as automation in order to accomplish this purpose. Fortunately, development in health analytics in past years has rendered it possible for the VCM to give advertisers

a broad variety of incentives, both in terms of knowledge access and research methods. Choi et al. 2016 (Switzerland). In terms of analysis, processing, and analytics substantial improvement was made in the area of methodologies in the health study system.

Health analytics have become a huge help for Value-Centered marketing, due to the use of massive data in healthcare and developments in methodology.

### **Electronic Health Records**

EHRs was developed to monitor a broad variety of patient details and enhance coordination among various providers including primary care laboratory along with physicians technicians, specialists and patients. Accordingly, data may only contain standardized details such as diagnoses, medication prescriptions, and demographic information, but also unstructured data including free-text clinical reports, which can provide further insights into patient’s social environment, behaviour, and attitudes (HealthIT.gov 2018). Health research models utilizing EHR data usually allow clinical experience for input parameters to be chosen, and non- numerical data to be manually coded, which is labor intensive. Non-numeric info, including diagnostic codes, can then be translated easily into machine vectors (Wang et al, 2018). With this new path to digital age transition adoption, a new route has helped the big data on EHR systems to be properly leveraged.

### **Mobile Devices and Wearable’s**

Social networking, mobile devices, and wearables offer a vast variety of possibilities for the processing of large- scale data (Oldenburg et al. 2015). Throughout addition to sensor data related to the wellness and health sectors, it provides mobile data utilized in many marketing fields, like fine grain tracking data. Throughout fact, health devices and trackers gather vast quantities of user data, such as activity levels, diet, and physiological measures such as weight and heart rate. There have also been a increase in mobile apps collecting healthcare details related to many health conditions. For starters, through the help of coordinated sensors, diabetes patients may accurately control their sugar level. From smartphone phones, walked steps, respiratory rate, and pulse rate, etc. are evaluated (Donevant et al. 2018).

The interest of consumer in digital health continues to develop, wellness health and apps crossed 3.35 billion worldwide (IQVIA 2017) users.

Through continued growth in collaboration of health care practices, a lot of marketing research will be necessary.

### **Social Media and Online Channels:**

There have also been several impacts for consumer analysis and interest co-creation in marketing analytics field through

the social network and online. Such results are also valuable in the area of health research. As ordinary people are likely to be among the new wave of patients, the electronic platforms become much more critical to recognize and accomplish them.

Online forums are another useful source of health care results, as a great number of individuals switch to interactive support networks to help their wellness goals such as weight reduction and to consider more the possible advantages and costs of different clinical treatment programs (Goh et al. 2016). A recent movement to include consumer needs in decision taking is evolving in acknowledgment of the value of what patients want. The user is regarded as an involved participant in shared decision-making, whose interests are crucial in decisions on treatment and health strategies (Légaré and Wittman 2013).

#### **Targeting the right consumers for treatment and preventive care**

Payors are urging clinicians to create services to help individuals build and sustain healthier behaviors to meet their public health targets and to reduce the expense connected with chronic diseases. With scarce treatment services, the detection of people to be addressed remains a major obstacle, but data-driven approaches are advancing. Digital media may also leverage communications technology to bring about societal impact by using improvements in statistical modeling. (Bryant and Grier 2005). The provision of more effective, reliable healthcare programs is also essential to brand management and customer satisfaction. Nevertheless, clinicians require extremely granular knowledge regarding their patients to meet the pledge of treatment quality. Several organisations have seized up the value of meaningful customer interactions and have concentrated up customer retention (Lee et al. 2016).

#### **Balancing potential benefits and unintended consequences of Value-Centered Marketing**

New analytics as well as technologies provide unprecedented possibilities to realize the value-added care promise. They require regular calculation, automation, customisation and rapid exchange of knowledge. Whereas some proponents are hopeful about the possible beneficial effect of the technology transformation in healthcare on disadvantaged customers (Bathija and Bhatt 2018), unintended effect avoidance needs effective pre-exploration and concerted intervention. If properly leveraged, new technology and analytics will render medical organisations too efficient:

1. assess and encourage buyers to behave on their interests, what is of considerable significance to them;
2. Speak with accuracy about public health;
3. Follow a consumer-focused approach with caution.

The resources and skills involved in obtaining and gaining from technical health interventions may often be viewed as being self-evident, but digital medical technologies continue to be created, validated and utilized by customers from disadvantaged communities.

*As well as concerns with incomplete data for disadvantaged groups, the production of EHR data will contribute to affiliation bias (Gianfrancesco et al. 2018).*

**Many scholars then provided vital opportunities for the growth of health surveillance and data creation (Rich and Miah 2017; Ruckenstein and Schüll 2017).**

#### **Conclusion**

To transition into value-based payment schemes, a value-centric marketing strategy needs to be built to optimize customer choice, specifically adapt to health concerns and provide user-oriented services. Where there has once been an barrier to insufficient quantification, advancement in healthcare technology and analytics allow Value-Centered marketing.

A key market challenge is to grasp digital transition accurately into this modern age. Experts share views on digital reality, fear of digital age and survival techniques, particularly in the field of healthcare. For example, user engagement with mobile devices is continuously changing: wearables and embedded mobile apps have joined digital marketing fields in detail.

From a growing healthcare environment, we have implemented the three Ps of value-centered marketing as an operational structure in order to explain how interest in healthcare can be created and prioritize main innovation areas. Our marketing Value-Centered approach offers actionable advice that will enable consumers, including physicians, pharmaceutical providers and insurance firms, to create trust for multiple stakeholders. After presenting a brief summary of the cutting-edge state of the art in health technology, we have provided case-specific usage cases for use in Value-Centered marketing

Lastly, the correlation between marketing sciences along with health information will lead health stakeholders into a

consumer- oriented culture which seeks positive patient interactions, however vigilance is required to make sure that VCM benefits everyone, even vulnerable populations, are recognized.

### Referemces

1. Negricea, C.I. & Purcarea, I.M., Digital marketing challenged by delivering value in the flux business environment, *Holistic Marketing Management*, Volume 7, Issue 2, 2017, pp. 07-13
2. Negricea, C.I. & Purcarea, I.M., Digital intelligence and digital marketing effectiveness, *Holistic Marketing Management*, Volume 7, Issue 1, 2017, pp. 12-17
3. Purcarea, T.V., Creating the Ideal Patient Experience, *J Med Life*. 2016 Oct-Dec; 9(4): 380-385, retrieved on 09.09.2017, from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5141398/>
4. Institute of Medicine. 2000. *To err is human: Building a safer health system*. National Academy Press, Washington, DC.
5. Institute of Medicine. 2001. *Crossing the quality chasm: A new health system for the 21st century*. National Academy Press, Washington, DC.
6. World Economic Forum. (2017). *Value in healthcare: Laying the foundation for health system transformation (Insight Report REF 220317)*.
7. Agarwal, R., Gao, G. G., DesRoches, C., & Jha, A. K. (2010). Research commentary — The digital transformation of healthcare: current status of digital era and the road ahead. *Information Systems Research*, 21(4), 796–809. <https://doi.org/10.1287/isre.1100.0327>.
8. Porter, M. E., & Kaplan, R. S. (2016). How to pay for health care. *Harvard Business Review*, 94(July–August), 88–98. Porter, M. E., & Rivkin, J. W. (2000). *Industry transformation (Rev. 00/ 07/10.)*. Boston: Harvard Business School.
9. McClellan, M. B., & Leavitt, M. O. (2016). Competencies and tools to shift payments from volume to value. *JAMA*, 316(16), 1655–1656. <https://doi.org/10.1001/jama.2016.14205>.
10. Koh, H. K. (2016). Improving health and health care in the United States: toward a state of complete well-being. *JAMA*, 316(16), 1679–1681. <https://doi.org/10.1001/jama.2016.12414>.
11. Burwell, S. M. (2015). Setting value-based payment goals — HHS efforts to improve U.S. health care. *The New England Journal of Medicine*, 372(10), 897–899. <https://doi.org/10.1056/NEJMp1500445>.
12. Centres for Medicare and Medicaid Services. (2017a). *NHE Fact Sheet - Centers for Medicare & Medicaid Services*. Retrieved from <https://www.cms.gov/research-statistics-data-and-systems/statistics-trendsand-reports/nationalhealthexpenddata/nhe-fact-sheet.html>. Accessed 19 June 2019.
13. De Lew, N., & Greenberg, G. (1992). A layman’s guide to the U.S. health care system. *Health Care Financing Review*, 14(1), 151–169.
14. Hadland, S. E., Cerdá, M., Li, Y., Krieger, M. S., & Marshall, B. D. L. (2018). Association of pharmaceutical industry marketing of opioid products to physicians with subsequent opioid prescribing. *JAMA Internal Medicine*, 178(6), 861–863. <https://doi.org/10.1001/jamainternmed.2018.1999>.
15. Hadland, S. E., Rivera-Aguirre, A., Marshall, B. D. L., & Cerdá, M. (2019). Association of pharmaceutical industry marketing of opioid products with mortality from opioid-related overdoses. *JAMA Network Open*, 2(1), e186007–e186007. <https://doi.org/10.1001/jamanetworkopen.2018.6007>.
16. Rice, T. (2013). The behavioural economics of health and health care. *Annual Review of Public Health*, 34(1), 431–447. <https://doi.org/10.1146/annurev-publhealth-031912-114353>.
17. Schwartz, L. M., & Woloshin, S. (2019). Medical marketing in the United States, 1997–2016. *JAMA*, 321(1), 80–96. <https://doi.org/10.1001/jama.2018.19320>
18. Lynn, J., McKethan, A., & Jha, A. K. (2015). Value-based payments require valuing what matters to patients.



JAMA, 314(14), 1445–1446.  
<https://doi.org/10.1001/jama.2015.8909>.

19. Oldenburg, B., Taylor, C. B., O’Neil, A., Cocker, F., & Cameron, L. D. (2015). Using new technologies to improve the prevention, evaluation and management of chronic conditions in populations. *Annual Review of Public Health*, 36(1), 483–505. <https://doi.org/10.1146/annurevpublhealth-031914-122848>.

20. IQVIA Institute for Human Data Science. (2017). The growing value of digital health: Evidence and impact on human health and the healthcare ecosystem. Retrieved from <https://www.iqvia.com/institute/reports/the-growing-value-of-digital-health>. Accessed 18 Sept 2018.

21. American Medical Association. (2016). Digital health study: Physicians’ motivations and requirements for adopting new digital clinical tools. Retrieved from <https://www.ama-assn.org/practice-management/digital>. Accessed 13 June 2019.

22. HealthIT.gov (2018). Hospitals participating in the CMS EHR incentive programs. Retrieved from <https://dashboard.healthit.gov/quickstats/pages/FIG-Hospitals-EHR-Incentive-Programs.php>. Accessed 18 Sept 2018.

23. Wang, W., Chen, M., Gao, G., & McCullough, J. S. (2018). Surfing the ocean of digital health data: A deep learning approach to precise readmission prediction. Presented at Conference on Information Systems and Technology (CIST), Phoenix, AZ, and November 3–14, 2018.

24. Choi, E., Bahadori, M. T., Searles, E., Coffey, C., Thompson, M., Bost, J., ... Sun, J. (2016). Multi-layer representation learning for medical concepts. *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining - KDD '16*, 1495–1504. <https://doi.org/10.1145/2939672.2939823>.