Personal Health Management Wearable by Millennials: A Review

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Abstract: Millennials are not only the world-wide biggest generation— they are presently likewise the world's most powerful end users. And their decisions and openness to new tech are a main impetus in expanding adoption. The growth of the market for these sophisticated wearables depends on the acceptance of the technology by consumers. In the near future, wearable health trackers are predicted to proliferate in the industry. The technological innovations can possibly impact the general business range as each gadget and item can be recognized particularly inside the modern internet infrastructure, with tremendous advantages.

Keywords: Internet of things, Healthcare management, Millennials health management, Personal health management, smart wearables

1. INTRODUCTION

Millennials are not only the world-wide biggest generation— they are presently likewise the world's most powerful end users. And their decisions and openness to new tech are a main impetus in expanding adoption. One of the most known traits of millennials is the way they are comfortable with technology. The capacity to utilize, apply and understand different technologies have differentiated millennials from other generations specially in their workplace. Regarding technology adoption, it is millennials quick adopting habits that have created various opportunities for huge success. The demand for new technology is increasing and companies are into pressure as they have to change and update various business processes to encourage other organizations to adopt advanced technology solutions and which will improve efficiency in their working environment.

According to a new report published by the Case Foundation, It's not just millennials seeking to change the world. They are changing the way social change is going. Millennials are more concerned about social issues. Civil rights/racial discrimination, healthcare (for themselves and their elderly parents and grandparents), employment and education are in this country's millennial causes of constant concern. Millennials, more than previous generations, believe that affordable health care is a right that all should have. The biggest change now the world is facing that earlier people use to have family doctors but millennials don't want personal relationships with the doctors. Millennials want healthcare system to be more transparent to whom they can reach 24/7.

For millennials, who want a much more user-friendly experience with their health-care, the day cannot come soon enough but from various healthcare applications people can keep check of their health and with various gadgets they can be updated with a pulse, blood pressure, calories burnt and many other features coming in near future (Bajaj, P. and et al (2021)).

Empowered customers, armed with access to an abundance of information, have established the standards of personalized involvement in many facets of their everyday lives, including healthcare (Hutchison, 2018). WTDs offer visual dashboards of customer behaviors that can be applied to health-based applications such as diet monitoring and medical follow-up; consumers have become familiar with these behaviors. Consumers have shown increasing interest in bioelectrical sensors and safety — monitoring tools aimed at living a healthier, safer, and more efficient life, with fitness bands and smartwatches leading the way in the US market (Russey, 2018).

1.1 Wearable health tracking technologies

Wearable devices can consume extremely rich context information sources, such as voice, place and gesture. A research by Billinghurst et al [3] claimed that wearables have the ability to sense handshakes, cause face recognition and recognize individuals.

In the near future, wearable health trackers are predicted to proliferate in the industry. Researchers also called Lifelogging, quantified self, or personal informatics monitoring all facets of one's everyday life. Wearables can monitor

measures, as well as other physiological details (e.g., heart beat rate). Wearables use stored data to allow users to gage progress and to gather incremental feedback. The data are visualized in order to increase user awareness of everyday activities and facilitate independent living and improve the quality of life of citizens. A research by Brandao et al. evaluated behavior trackers' ex-users and current users and investigated discouragement factors and explanations that may lead to long-term adoption. Another study by Jameson et al. developed a mini-wearable sensor device to enhance the safety of visually impaired users during ambulation. The sensor warns them on head-level when they are about to meet obstacles. The system emits an acoustic warning when it detects a hazard.

2. REVIEW OF LITERATURE

2.1 Internet based products and its impact on business

The researcher discussed some of the benefits of internet based smart devices which are smarter analytics, enhanced security, increased productivity, smart inventory, safer travel and real time demand visibility. The significant markets inside this field are smart homes and wearable gadgets. The examination recommends that the internet-based smart devices are having immense development potential and it will be a key income driven market (Sachchidanand Singh and Nirmala Singh, 2015).

2.1.1 Digital innovations affect value of company

Digital devices describe individuals, systems, data, and objects linked to the network. This paper shows the impact of technology innovation on the intellectual capital of a high-intensity cognitive company. The research proposes strategic advice for decision-making of companies interested in new technology investments. (Alan Murray and Armando Papa (2016)).

2.1.2 Trust in techno-based applications

Conventional models of trust built within the framework of interpersonal, organizational, technological, and information systems may be inadequate for use within techno-based framework. The research results indicate the trust dimensionality can differ depending on the nature of the techno-service being assessed. (Tracy Harwood and Tony Garry (2017)).

2.1.3 Implementation of theoretical viewpoint

Adoption of the Internet of Things is only limited to a few implementations. This study sets the stage for detailed research in a wide variety of application areas such as healthcare, well-being and assistance for the elderly, smart cities and smart supply chains, etc. Researchers found that Indian consumers are ready for smart home devices (Monika Mital and et al (2017)).

2.2 Consumer resistance to smart products

Perceived usefulness, perceived novelty, perceived price, intrusiveness, privacy and self-efficiency have an effect on consumer resistance to smart products. To date, most research studies have concentrated on either the adoption (Hsu & Lin, 2016; Kim & Shin, 2015) or the purchasing of smart goods (Chang et al.). Second, previous empirical research on innovation resistance looked at the impact of various forms of risk (Wiedmann et al., 2011), usage and value obstacles (Laukkanen, 2016) and self-efficacy (Ellen et al., 1991).The study has some limitations as digital natives are heavy users of technology devices and services so the use of a student sample limits the generalizability of our tests. (Zied Mani and Inès Chouk (2016)).

2.3 Use of technology in healthcare

Healthcare and e-Tourism are among the quickest developing business areas on the planet. Researchers have seen major changes in both sectors, as mostly these services are shifted to SMEs and individual entrepreneurs. The researchers said that various technological sector business companies should collaborate with both sectors for increasing business. (Ekaterina Balandina and et al (2015)).

2.3.1 Technology device lifestyle disease management service

The researchers provided an important manual for healthcare service designers, from the viewpoint of the technology user. Data on the profession of service providers, task scope, devices, expert support and a range of shared personal medical data were suggested as major attributes that speaks about the expected changes in the healthcare service delivery process because of the acceptance of technology. (Suwon Kim and Seongcheol Kim (2018)).

2.3.2 Cloud computing model for healthcare systems

Sapna Tyagi and et al (2016) in the "Cloud Computing Definition Model for Healthcare Systems" proposes a future in which anything / anyone / any service can be connected through appropriate information technology that would bring about a technological revolution in domestic, smart homes, products tracking, healthcare systems.

2.3.3 Internet based healthcare services

The researchers said that specialists around the world have begun to find various technological solutions that will improve healthcare services such that upgrades current services by uniting the abilities of the internet based devices. The Internet

of m-Health Things, Adverse Drug Reactions, Community Healthcare and Children's Health Information are the various types of healthcare services which are based on internet (Syed Tauhid Ullah Shah and et al (2019)).

2.3.4 Healthcare Analytics using machine learning algorithm

The Internet of Things makes things very active participants permitting communication between the things and transferring the data. It has broad range of applications in different sectors such as healthcare. The collected data is recorded and analysed from sensors for providing better decision making in various situations, minimizing the maintenance cost and so on. (Shanmugasundaram.G and Sankarikaarguzhali.G (2017)).

2.4 Problems and factors related to adoption of wearable devices for managing personal health

Ksenia Sergueeva and et al (2019) Performance perceptions, social impact, enabling circumstances, hedonic motivation, habit, and personalization are significant predictors of customer intention to use wearable devices. Price benefit, privacy and health knowledge are not important in the consumer's decision to adopt a WTD.

2.5 Millennials media usage

The researchers studied the millennials use of media in this research. The study results may be used to develop or market products and services to millennials. They were interested in media and media-related devices and spent a lot of time watching, reading and listening to media (Mingyu Lee and et al (2020)).

CONCLUSION

This was observed through literature review with the help of these literatures and other published material that products and services can be designed to match the needs and preferences of customers, which will significantly lead to further improving the user's experience of the goods or services. Adding more flexibility to the wearables could adjust to changing circumstances for the consumer. New sources of knowledge need to be accounted for, user usability increases, and the emphasis on design aesthetics when creating wearable health technologies. In healthcare industry there are many manufacturers giving different product and devices. They have not followed any standard protocols across the devices. This leads to interoperability issues. The device diversity and management of value added services are the major standardization issues present. The IoT healthcare network must allow the mobility of patients and must able to connect anywhere at any time. This feature enables to connect dissimilar patient environment.

REFERENCE

1. Singh, S., & Singh, N. (2015, October). Internet of Things (IoT): Security challenges, business opportunities & reference architecture for E-commerce. In 2015 International Conference on Green Computing and Internet of Things (ICGCIoT) (pp. 1577-1581). IEEE.
2. Murray, A., Papa, A., Cuozzo, B., & Russo, G. (2016). Evaluating the innovation of the Internet of Things. Business Process Management Journal, 22(2), 341.
3. Harwood, T., & Garry, T. (2017). Internet of Things: understanding trust in techno-service systems. Journal of Service Management.
4. Mani, Z., & Chouk, I. (2017). Drivers of consumers' resistance to smart products. Journal of Marketing Management, 33(1-2), 76-97.
5. Balandina, E., Balandin, S., Koucheryavy, Y., & Mouromtsev, D. (2015, July). IoT use cases in healthcare and tourism. In 2015 IEEE 17th conference on business informatics (Vol. 2, pp. 37-44). IEEE.
6. Kim, S., & Kim, S. (2018). User preference for an IoT healthcare application for lifestyle disease management. Telecommunications Policy, 42(4), 304-314.
7. Shanmugasundaram, G., & Sankarikaarguzhali, G. (2017). An investigation on IoT healthcare analytics. International Journal of Information Engineering and Electronic Business, 9(2), 11.
8. Tyagi, S., Agarwal, A., & Maheshwari, P. (2016, January). A conceptual framework for IoT-based healthcare system using cloud computing. In 2016 6th International Conference-Cloud System and Big Data Engineering (Confluence) (pp. 503-507). IEEE.
9. Shah, S. T. U., Yar, H., Khan, I., Ikram, M., & Khan, H. (2019). Internet of Things-Based Healthcare: Recent Advances and Challenges. In Applications of Intelligent Technologies in Healthcare (pp. 153-162). Springer, Cham.
10. Sergueeva, K., Shaw, N., & Lee, S. H. (2020). Understanding the barriers and factors associated with consumer adoption of wearable technology devices in managing personal health. Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 37(1), 45-60.
11. Lee, M., Kwahk, J., Han, S. H., Jeong, D., Park, K., Oh, S., & Chae, G. (2020). Developing personas & use cases with user survey data: A study on the millennials' media usage. Journal of Retailing and Consumer Services, 54, 102051.
12. Mital, M., Chang, V., Choudhary, P., Papa, A., & Pani, A. K. (2018). Adoption of Internet of Things in India: A test of competing models using a structured equation modeling approach. Technological Forecasting and Social Change, 136, 339-346.
13. Harwood, T., & Garry, T. (2017). Internet of Things: understanding trust in techno-service systems. Journal of Service Management.
14. Lee, M., Kwahk, J., Han, S. H., Jeong, D., Park, K., Oh, S., & Chae, G. (2020). Developing personas & use cases with user survey data: A study on the millennials' media usage. Journal of Retailing and Consumer Services, 54, 102051.
15. Bajaj, P., Almugari, F., Tabash, M. I., Alsyani, M., & Saleem, I. (2021). Factors influencing consumer's adoption of internet of things: an empirical study from Indian context. International Journal of Business Innovation and Research, 24(3), 315-338.