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MOBILE APPS IN AGRICULTURE: A BOON FOR FARMERS

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Agriculture plays a vital role in the Indian economy with over 58 per cent of rural households depending on agriculture as their principal means of livelihood. Agriculture, along with fisheries and forestry alone contributes 17.32 % of the Gross Domestic Product (GDP) in India. The challenging task for farmers is information management mainly in terms of the amount of data and the complexity of processes in precision farming. To meet this pressing challenges in this digital era, technology driven smart mobile apps cater to the needs of the farmers.

The digital boom in the recent past has made India one of the largest users of internet and mobile telephony in the global map. India is 2nd largest user of Internet next to China with 560 million internet subscribers in 2018 (IAMAI, 2019). Rural Internet penetration has increased from 9 per cent in 2015 to 25 percent in 2018 with estimated 251 million internet users. India being a young country with around 200 million rural youths i.e 41 % of total population in India, are motivated and attracted professionally to agriculture and allied fields. And therefore, there is significant positive indication of digital transformation among the rural masses predominantly represented by rural youth. According to 'The Rising Connected Consumer in Rural India', a study by the Boston Consulting Group, up to 300 million Indian consumers are expected to be online by 2020. More than half of the new Internet users are expected to come from rural communities. Cheaper mobile handsets, spread of wireless data networks, and evolving consumer preferences will all drive rural penetration and usage (BCG, 2016).

Information and Communication Technologies (ICT) has seen a powerful role in daily life of farmers.ICT in agriculture is an emerging field focusing on the agricultural development and rural development in India. Introduction of ICT in Indian agriculture enables the dissemination of requisite information at the right time. ICT tools like Mobile Apps serve as smart Decision Support Tools (DST) and are designed to help users make more

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effective decisions by leading them through clear decision stages and presenting the likelihood of various outcomes resulting from different options. The modern day's mobile apps are software programs designed to run on smart phones, tablets and other devices. The application software on a mobile phone handset or tablet computer that enables a user to access specific information; make payments and other transactions; send messages; etc. The application (app) is downloaded (for free or for payment) from a wireless network from an online store and may require a live connection to function effectively.

The growth of mobile communication technology is creating a number of opportunities for social empowerment, and grassroots innovation in developing countries. One of the areas with potential impact is in the contribution of mobile applications to Agricultural and Rural Development (ARD), by providing access to information, markets, and services to rural inhabitants (World Bank, 2012). In, India Digital literacy initiated by Digital India (2015) has given fillip and increased availability of bandwidth, cheap data plans and increased awareness driven by government programmes to rapidly bridge the digital gap between urban and rural India.

Emerging Challenges

Even though India's mobile phone users and internet subscribers have outnumbered several developing nations in terms of its usage. Still, farmers in rural areas are yet to reap the benefit of digital revolution and therefore; affordability, accessibility and availability still possess the determining factors for mobile app utility. Mobile applications indeed have a widespread penetration worldwide in all sectors; and to a lesser extent in the agricultural sector. And therefore, the development of mobile apps for agriculture compared with other business sectors is limited. One of the major reasons why the farmers have faced challenges is because they rarely received adequate and timely information on various influencing factors such as weather, rainfall and soil conditions. Similarly, the majority of farmers do not have access to a communications platform that provides market trends and other current updates.

In this era of digital world information farmers face challenges with regard to information management of huge data and the complexity of processes in precision farming. Access to data from the mobile app having different format and different specific contents can be heterogeneous in their structure and format. Thus, creates difficulty for the laymen and farmers to easily access its service. The inventions in technology in agriculture domain

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remains far from reach to the farmers; because of either most of them are illiterates or due to unawareness of the location of information and service provides. Hence, most of the farmers fail to meet the desired production rate thus affecting their rate of production/output. However, research has shown that they have keen interest in learning to operate and use technology which will enable them to take constructive and in time decisions about their farming .Mobile phones do have a multi-dimensional positive impact on sustainable poverty reduction and identify accessibility as the main challenge in harnessing the full potential. Hence, there is an immense opportunity to enhance the broadcasting of agricultural information that farmers receive through the use of ICTs.

Penetration of Smart phones in Agriculture

Among the technologies invented in the past few decades, smartphones have gained large market shares among various user sectors due to their usefulness, ease-of-use, and affordability. A smart phone is the device that is used to make telephone calls, having additional features and abilities like to send and receive e-mail, Wi-Fi and modem ability, internet access, Office documents, easy touch screen operation and most of all the capability to run custom software. The ‘user interface’ is one more important characteristic of smart phone. The number of smart phone users in India is expected to double to 859 million by 2022 from 468 million users in 2017 growing at a compound annual growth rate (CAGR) of 12.9% (ASSOCHAM-PwC,2019).Mobile subscriptions are expected to reach 1.4 billion by 2021, according to the Ericsson Mobility Report of June 2016. (CNBC, 2016). For India, over the last decade, the markets in both developed and developing countries have been flooded by mobile phones, tablets, and other pervasive devices. Depending on the availability of network 2G and 3G, the applications have helped the farming community at large to be connected, updated, prepared and profitable, (Vodafone, 2010). These mobile-based smart applications potentially deliver timely information to different subscribers such as farmers, traders and producers. The information delivered includes weather, rainfall, crop information at large, while some applications also help update the market data of commodity prices and facilitate the local buying /selling via hand held devices.

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Advantages of Mobile Applications

The advantages of mobile apps include: affordability, wide ownership, voice communication, and instant and convenient service delivery. Due to these, there is explosion across the world in the number of mobile apps, facilitated by the evolution of mobile networks and by the increasing functions and falling prices of mobile handsets (World Bank, 2012). All types of information on crop, soil, climate, rainfall, seeds, and machinery at any point in time, and any number of times is available on finger tips of farmers. For farmers, and their advisers, software tools can facilitate effective farm management by recording data efficiently, analyzing it, and generating a series of evidence-based recommendations. The available information is compiled and very well organized that farmer does not have to waste time while retrieving and referring. The market connectivity is also improved with the visibility and knowledge of the potential buyers and sellers in the locality with an opportunity to develop direct contacts. The commodity prices can be delivered in a real time mode. Mobility can assist the farmers in better warehousing facility by updating their stock, track the dead stock, make note of the purchase requirements and thereby honoring the delivery commitments in a timely manner and getting the stock reach the end consumer and at the same time ensuring quality. Cell phones have a greater impact on price dispersion for participants who are further away from their markets, and for those with worse roads. In addition to it, the farmers can be well updated about their investments, track orders made on purchases, view bank statements, be well informed of insurance details and deadlines and thereby plan the production effectively.

Disadvantages of Mobile Applications

Due to less relative advantage, compatibility, trialability, observability and more complexity of the mobile apps creates difficulty and disadvantageous for its user to easily access the applications. With the diversity in languages, even if the best of the applications do not support regional languages then translation will be required at all stages which will increase the dependency and in turn reduce the acceptability and popularity. At times, due to network issues, speed of the data delivery, legal restrictions, it might prevent the farmers by getting the updated and complete information. There may be a requirement of a skilled person to understand and translate the various complex functions to be performed on farm, ambiguous information and videos in other languages. The farmers in the developing nations

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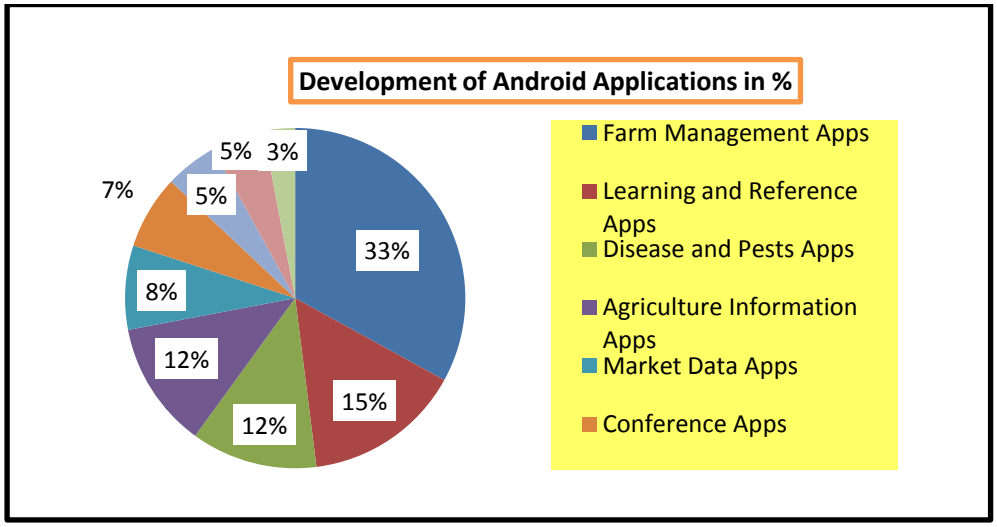
may not be adequately equipped to afford and use the applications which may be chargeable and also require huge data usage thereby levying the network charges on the burdened shoulders of the farmer (World Bank 2011).



Source: Patel, H., & Patel, D. (2016)

Conclusion

Mobile technology is transforming access to information among farming masses. Emergence of digital revolution and internet penetration in the rural areas has enthralled farmers to access to new apps that would keep pace with the modern technology. A number of new apps are emerging in response to new requirements and challenges in agriculture and allied sector. As the number of apps continue to increase it is important to be selective in choosing the app, review and ensure that the App provides credible and current information and meets requirements. Since agricultural work is context-based, which is primarily distinguishable by different geographical locations, smart phone applications already available in one scope of context can be developed to fit other crops or countries or regions. Hence, mobile app should aim at holistic rural development and forge closer links between farmers and consumers through gender-sensitive technology, training and capacity building of the farmers through technology-driven platforms for income generation activities.

References

ASSOCHAM-PwC, 2019.Emerging technologies disrupting the financial sector, Background Paper. May, 2019. Conference on Communication Systems and Network Technologies (CSNT), Rajkot, India. 11-13 May 2012, pp. 950 – 955.

Volume 2 – Issue 1
Online ISSN: 2582-368X
www.agriallis.com

BCG, 2016. The rising connected consumer in rural India by Nimisha Jain and Kanika Sanghi. August 10, 2016. https: // www.bcgperspectives.com /content/ articles/ globalization-customer-insight-rising connected - consumer-rural-india/

CNBC, 2016. How India is shaping the global smartphone market by Harriet Taylor 21 September 2016. https://www.cnbc.com/2016/09/21/how-india-is-shaping-the-global-smartphone-market.html

IAMAI, 2019. India Internet Report-2019.Internet and mobile association of India. https://www.iamai.in/KnowledgeCentre

Patel, H. and Patel, D. (2016). Survey of android apps for agriculture sector. *International Journal of Information Sciences and Techniques*, *6*(1-2), 61-67.

Vodafone, UN. 2010. Wireless Technology for Social Change: Trends in Mobile Use by NGOs, 2010

World Bank, 2012. Mobile applications for agriculture and rural development. Washington, D.C.: World Bank Group. http: // documents.worldbank.org/ curated/en/ 167301467999716265/ Mobile-applications-for-agriculture-and-rural-development

World Bank, Info Dev, 2011. ICT in Agriculture Sourcebook, Agriculture and Rural Development.