

20. Use of Digitization in Rural

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“The soul of India lives in its villages.” Mahatma Gandhi. The Indian economy is predominantly rural with over two-thirds (65.97 %) of its population and workforce residing in rural areas. Rural India contributes a substantial part of the total net value added in many sectors, with an overall 46% contribution to our national income. With a population of 833 million people residing in 640,867 villages, it is projected that, by 2050, more than half of India’s population will still be rural, despite rising urbanisation. Thus, the growth and development of the rural economy is imperative for inclusive development and overall growth of the country. Apart from this Urban India is not able to provide proper space livelihood and proper amenities to increasing population. The report speculates that by 2050, the urban population will have increased to 87.7 million and the rural population will account for 78.3 million people. However, this overhaul will take place somewhere after 2045 itself, suggests the data. The urban population of India has seen a rise from 17.1 per cent to 29.2 per cent between 1950 and 2015. Meanwhile, the rural population declined from 82.9 per cent (in 1915) to 2015’s 67.2 per cent. The speculation for the year 2050 suggests that the urban-rural segregation will be 52.8 and 47.2 with a difference of 5.6 per cent.

Within a decade of globalization, the rate of urbanization increased by one-third of its previous growth. This has resulted in stress on the country's urban conglomerations.

Rural FMCG market accounts for 40 per cent of the overall FMCG market in India, in revenue terms. Businesses in India are optimistic about growth of the country's rural consumer markets, which is expected to be faster than urban consumer markets. The report highlights the better networking among rural consumers and their tendency to proactively seek information via multitude sources to be better informed while making purchase decisions. With increasing contribution to development and exposure to needs, the buying capacity of rural Indians has taken a sharp upward turn. However, rural consumers have a strong value-for-money orientation, significant local cultural affinity, and a more conservative financial outlook. Their purchasing aspirations are often constrained by easy availability. Digitisation and technology can facilitate access and availability of more and more services and products be made available to meet the rising aspirations of the underserved and unreached rural India. This is being driven strongly through the government’s **Digital India** programme. One of the key enablers is the growing internet penetration, expected to grow from 25% in 2016 to 55% by 2025.

Only 38% of the 117,200 branches of scheduled commercial banks are working in rural areas, and a meagre 40% of the households have bank accounts. Thus, India is home to 19% of the world’s unbanked population. Financial inclusion is an important priority of the government. This gap at the last-mile is being filled by banks through a combination of finance and technology enabled by business correspondent agents.

India is an agrarian economy with agriculture supporting 60% of our population. Indian agriculture is highly dependent on human labour and good rainfall. While most developed economies have mechanised farming and reduced dependency on rains through state interventions and good planning, Indian farmers still plod along with obsolete farming techniques to support a growing population. Yet the contribution of this major sector to GDP has been steadily declining and currently stands at 15%. On the other hand farmers don’t have access to market their product on current prevailing rate. Farmers need timely information about farm production, pest control, inventory management and tracking. Farmers also need Climate-Smart Precision Farming to avoid rain dependency.

In 2012, only 27 percent of adult Indian women had a job, or were actively looking for one, compared to 79 percent of men. Rural jobs have been decreasing and not enough rural women have been able to make the transition to working in urban areas. India could boost its growth by 1.5 percentage points to 9 percent per year if around 50% of women could join the work force. India’s maternal mortality rate is high and accounts for 20

percent of global deaths occurring due to preventable causes related to pregnancy and childbirth. In India Infant Mortality rate is 29.848 which is worse than Bangla Desh (24%) and Sri Lanka (7.1%).

Digitization can facilitate some of the key needs of **rural** India including governance services, banking and financial services, educational and healthcare services, mobile/DTH recharge, e-ticketing services, online shopping, etc.

A. EGOV SERVICES :

Following major services are being provided to rural citizen after digitization.

- **eDistrict Services-** Under this services citizen can apply online for Birth Certificate , Death Certificate, Residential Certificates, Caste Certificates and other certificates and can get it within prescribed timeline. This has eliminated and helped them to get all relevant certificates from their villages and they can devote their valuable times in study/farming/other household activities and can increase productivity.
- **PDS:** In its bid to better target subsidies and ensure leakage-free distribution of foodgrains, the government used automated ration shops. This helped to extend benefits to needy at the same time it also helped to eliminate bogus beneficiary and Govt saved around 5000 Cr yearly. This fund is being used in other development work.
- **PMJAY(Ayushman Bharat):** The scheme's aim is to provide cashless hospitalization to 50 crore Indians (mostly rural) to the extent of Rs 5 lakh per family in any hospital in India. All this at no cost to the individual. This is possible due to digitization of individual records.
- **Land Record Digitization:** A complete computerised compilation of land data, starting from the original owner to the present status of land, including an image of the property and the landowner for identification purposes, will reveal the total area of land owned by a person. Making land records available to all is helping to contain/check property frauds. This is also helping rural mass to know all record in a single click. Land registry mutation and fee payment can be done from village center itself.
- **MGNREGA(Job Guarantee to Rural People):** Digitization has helped to reduce false job cards and beneficiary can get payment directly to their account through DBT.

B. USE OF DIGITIZATION IN AGRICULTURE

- **Expert Advice:** In this project the village information centre (VIC) receives information by voice, mail and SMS with help of IMD/ISRO/CSIR. Farmers receive advice on rotation of crops, fertilisers and pesticides. Digitization technology can be used for on-farm sensing technology to records various soil, environment and crop parameters and uses artificial intelligence and data science to make on-farm predictions. Some of the major benefits we can get from Climate-Smart precision farming are -
 - Costs savings in terms of water, energy, fertilizers, and pesticides. * Product losses prevention by controlling weather conditions to adequate harvest times. Optimizing farmers daily tasks by automating processes.
 - Getting real-time alerts about crop's conditions to make adjustments to reach optimal growth conditions.
- **Marketing Support:** It is helping farmers and buyer through Real Time Price Discovery, Better Price Realization For Producers, Reduced Transaction Cost For Buyers, Stable Price and Availability to Consumer. In April 2016, Govt launched eNAM (National Agriculture Market), an online platform for farmers that integrates agricultural markets online, allowing farmers and traders alike to view all Agriculture Produce Market Committee-related information and services, commodity arrivals and prices, and buy and sell trade offers, thus helping farmers bid for the best prices across markets.

C. USE OF DIGITIZATION IN RURAL EDUCATION SYSTEM

- **Improvement in Quality Education:** Recent numbers point out that there are 97,273 single teacher schools in India, which account for about 8.8 percent of the total schools in the country. These obstacles don't just lead to poor quality of education, but also contribute to high dropout rates in rural schools—nearly 50 percent by the age of fourteen.
Education can be digitised in rural areas by providing multimedia teaching tools to teachers and engaging students through learning methods that utilise digital tools, such as smart-boards, LCD screens, videos, etc., to teach them different concepts. By making it possible for one teacher to deliver information remotely across several locations, interactive digital media will also help address the shortage of teachers in these schools. Some of the state has started doing this.
- **Monitoring of Attendance :** Attendance of teacher as well as student can be monitored through GIS based APP.

D. USE OF DIGITIZATION IN RURAL HEALTH SYSTEM

India has a lower than average doctor to patient ratio, which is further skewed by concentration of medical facilities in the urban centers. medical professionals through Telemedicine.

Availability of care: The impact of digitization holds strong significance for rural services as there is a huge dearth of hospitals with modern facilities and quality medical practitioners. Accessibility to healthcare setups and unavailability of doctors is a huge concern in rural India.

Quality healthcare services through digital devices can now reach small towns and villages through local health camps and/or Primary Health Centers, as small portable devices now provide accurate health readings. Advanced telemedicine: Digital devices, that provide real time health readings, negate the requirement of manual intervention for diagnosis like heart monitoring, Blood Pressure data, sugar levels amongst others vital statistics and offer continuous data management while providing access to quality medical practitioners through connected devices.

Access to timely specialist and super specialist advice: Digital Devices, can substitute the need for physical presence of specialist medical practitioners and large medical setups across the underdeveloped interior locations of the country, providing similar services at reduced costs. This can be an effective low-cost solution given the existing network of primary healthcare centers and district hospitals which can be leveraged.

Affordable care: The cost of quality treatment is quite high in India with majority of leading hospitals located in major metros or Tier I locations. Government aided hospitals cannot cater to the rising population and growing need of medical assistance across all age groups. Portable medical devices, available at affordable costs, help monitor health readings from the comfort of one's home negating the need to travel and visit hospitals for every small medical need. These devices can be shared through mobile apps with doctors and concerned family members and can be continuously monitor through connected devices.

GIS based Ambulance Services: Using GIS 108 Ambulance services are being provided to rural people. It is quick and cost effective. Rural citizen can be connected to nearest health care system and during transportation expert care can be also be provided through call center.

E. USE OF DIGITIZATION FOR WOMEN EMPOWERMENT AND FAMILY WELFARE IN RURAL AREA

Women and child Health Recording and timely assistance: A 6.15 per cent reduction since the last survey figures of 2014-2016 has been observed in Maternal Mortality Rate. ASHA workers are using Smart Phones and Mobile APP to provide following data :

- Identifying and registering new pregnancies, births and deaths,

- Mobilizing, counselling and supporting the community to demand and seek health services and connecting to doctors at block/district level
- Identifying, managing or referring cases of illness
- Tracking and completing timely immunizations sessions, health records to provide timely assistance

Women Empowerment: Women in Rural area using Smart Phone to sell their products to middle level system and getting money directly into their account.

F. USE OF DIGITIZATION FOR RURAL ECOMMERCE:

Now using technology rural producer can also connect their product through Amazon, Flipcart etc