
Promises and Performances of ICTs in Rural India: A SWOT Analysis

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ABSTRACT

ICT or Information Communication Technology ordinarily refers to computer based technology and telecommunications. Though it has been passed sixty nine years since independence, the substantial socio-economic development gained by India is not equally distributed to all sections of society. Some sections, like rural, tribal and remote areas can not keep pace with urban areas in development. To assure basic needs of the villagers by generating gainful employment, improving the socio-economic infrastructure for rural areas, to safeguard and improve fertility of land and other resources, lots of programmes and projects had been launched in India since independence. But now-a-days, when there is a huge hype regarding achieving sustainable Development Goals (SDGs), ICTs can play an important role in facilitating these socio-economic capabilities and can able enable the villagers to access various services regarding health, education, employment , Government services etc. Thus ICT has been given an immense responsibility to bridge the gap between rural India and urban India. Especially recently Government has focussed on improving ICT very much. Digital India programme is the most eligible example of it. The Human Resource Development (HRD) minister recently launch e-pathshala app where the students, parents and teachers can access study materials online. There are many newly launched mobile apps like Government e-Procurement System of NIC (GeNIC), Co-operative Core Banking Solution (CCBS), to know everything about hospitals in Government sectors (e-hospital), Knowledge Management System (e-Office) etc. Thus e-governance has been gaining importance day by day.

The present paper focuses on the scope of ICT in Rural Development, the opportunities and challenges that can come along. The paper has also discussed about expected role of ICT in rural development, to find out the extent to which ICT has contributed towards India's rural development and how ICT sector helps to build national and regional internet backbones by enabling policies for telecommunications.

Keywords: ICT, SWOT analysis, Rural Development, HRD, telecommunication, Digital India

INTRODUCTION

Information Technology (IT), also called Information Communication Technology (ICT) ordinarily refers to computer based technology and telecommunications. These are electronic systems for receiving, processing, storing, retrieving and transmitting information, With the availability of the internet, worldwide information is readily available at hand. In the context of globalisation and liberalisation of the economy, information communication technology assumes great significance for the country. (Mondal and Ray, 2009).

To assure basic needs of the villagers by generating gainful employment, improving the socio-economic infrastructure for rural areas, to safeguard and improve fertility of land and other resources, lots of programmes and projects had been launched in India since independence. But now-a-days, when there is a huge hype regarding achieving sustainable Development Goals (SDGs), ICTs can play an important role in facilitating these socio-economic capabilities and can able enable the villagers to access various services regarding health, education, employment , Government services etc. Thus ICT has been given an immense responsibility to bridge the gap between rural India and urban India. Especially recently Government has focussed on improving ICT very much. Digital India programme is the most eligible example of it. The Human Resource Development (HRD) minister recently launch e-pathshala app where the students, parents and teachers can access study materials online. There are many newly launched mobile apps like Government e-Procurement System of NIC (GeNIC), Co-operative Core Banking Solution (CCBS), to know everything about hospitals in Government sectors (e-hospital), Knowledge Management System (e-Office) etc. Thus e-governance has been gaining importance day by day.

The present paper focuses on the scope of ICT in Rural Development in India, the opportunities and challenges that can come along. The paper has also discussed the expected role of ICT in rural development, to find out the extent to which ICT has contributed towards India's rural development and how ICT sector helps to build national and regional internet backbones by enabling policies for telecommunications.

Objectives

- To identify the role of ICT in different sectors of rural development i.e. agriculture, health, education, employment, capacity building and empowerment, financial literacy, social issues, market related information, vocational training etc.
- To assess the opportunities of ICT in India through recently launched ICT related projects in every sector
- To inform about disadvantages of ICT
- To identify the challenges related to ICT
- To suggest what can be done to fulfil the gaps and loopholes in the proper implementation of ICT related projects and apps.

METHODOLOGY

The entire paper based on secondary data.

SWOT ANALYSIS OF ICT Projects in INDIA

STRENGTH

Important areas of Rural Development through ICT

ICT and Agriculture

The vast majority of poor people lives in rural areas and derives their livelihoods directly or indirectly from agriculture. Increasing the efficiency, productivity and sustainability of small-scale farms is an area where ICT can make a significant contribution. Farming involves risks and uncertainties, with farmers facing many threats from poor soils, drought, erosion and pests. ICTs can deliver useful information to farmers about agriculture like crop care and animal husbandry, fertilizer and feedstock inputs, pest control, seed sourcing and market prices.

1. Expert System in Agricultural Extension

Is essentially a decision support system for farmers and extension agents to obtain expert opinion and advice on field specific problems. Some models of EXPERT SYSTEM in the field of agriculture are presented here.

- Expert system developed by MANAGE

The National Institute of Agricultural extension Management (MANAGE) developed an expert system to diagnose pests and diseases for rice crop and also suggest preventive/ curative measures.

- Expert systems developed by the Indian Institute of Horticultural Research

The grape cultivators and mushroom cultivators of IIHR developed a software which is used by a large number of growers for getting proper solutions to their problems. The institute has launched a programme to give comprehensive package of practices for a large number of horticultural crops.

- AGREX

AGREX has been prepared by Centre for Informatics Research and Advancement, Kerala to provide correct and timely advises of fertilizer application, crop protection, irrigation scheduling, diagnosis of diseases in rice and post harvest technology of fruits and vegetables to the agricultural field personnel and farmers.

- Farm Advisory System

Punjab Agricultural University, Ludhiana, developed the Farm Advisory System to support agri-business management.

- Kisan Call Centres

The ministry of Agriculture, Govt, of India has initiated a programme called, Kisan Call Centres in which farmers from remote places in the country can call over telephone to the subject matter specialists (SMS) in the district headquarters (at agricultural departments, agricultural colleges, agricultural technology information centres etc.) and pose problems about their farming to get suitable solutions at various levels. Besides, agricultural information KIOSK and other service centres opened by agri-business companies and NGOs also provide the needed information to the farmers through electronic media (van den Ban and Samanta, 2006).

ICT for Education:

ICT can improve the overall efficiency of the delivery of education in schools and educational management institutions at the national, state/provincial and community level. The use of ICTs in education aims to improve the quality of teaching and learning as well as democratize the access to education.

Market Outlook

Farmers could promote their products and handle simple transactions such as orders over the web, while payment transactions for the goods can then be handled offline. (O'Farrell et al., 1999). It has been shown to be cheaper and faster to trade online than on paper-based medium, telephone or fax. E-commerce could therefore, enable entrepreneurs to access global market information and open up new regional and global markets that fetch better prices. (Mondal and Ray, 2009).

ICT for Economic Development

Information and Communication Technology has a vital role in connecting the rural community to outside world for exchange of information, a basic necessity for economic development. Effective use of ICT can demolish geographical boundaries and can bring rural communities closer to global economic systems and be of meaningful help to the under privileged.

ICT generates Employment Opportunities

Poor people in rural localities have lack of opportunities for employment because they often do not have access to information about them. One use of ICTs is to provide online services for job placement through electronic labour exchanges in public employment service or other placement agencies.

Through the establishment of rural information centres, ICTs can create employment opportunities in rural areas by engaging tele-centre managers, subject matter specialists, information managers, translators and information technology technicians. Such centres help to bridge the gap between urban and rural communities and reduce the rural-urban migration problem. The centres can also provide training and those trained may become small-scale entrepreneurs. (Mondal and Ray, 2009).

ICT in Capacity-Building and Empowerment Communities

Farmer organizations can be helped through the use of ICTs to strengthen their own capacities and better represent their constituencies when negotiating input and output prices, land claims, resource rights and infrastructure projects. ICT enables rural communities to interact with other stakeholders, thus reducing social isolation. It widens the perspective of local communities in terms of national or global developments, opens up new business opportunities and allows easier contact with friends and relatives. Another role is also played by ICT in making processes more efficient and transparent. (Mondal and Ray, 2009).

Role of ICT in Climate Change

The role of ICTs under climate change situation can be explored based on the linkages that exist between ICTs as a system component and its ability to withstand & its ability to recover and to change under changing climatic conditions. ICTs can help strengthen the physical preparedness of livelihood systems for climate change related events through applications such as geographic information systems (GIS), and positioning and modeling applications. ICTs can also strengthen institutions and organizations needed for the system to withstand the occurrence of climatic events, including the support of social networks and the facilitation of coordinated action.

ICT Enabled Rural Development Projects in India

Info Village, Pondicherry

The project was launched in Pondicherry by M.S. Swaminathan Research Foundation (MSSRF), with the support of IDRC Canada in the year 1998. The network provides public services in local language in a multimedia fashion.

Warna Wired Village Project

The Warna project is jointly carried out by the National Informatics Centre (NIC) on behalf of Central Government, the government of Maharashtra and the Warna Vibhag Shikshan Mandal (education department) jointly carried out the project.

e-Chaupal

e-Choupal is an initiative of ITC (Indian Tobacco Company) Limited, a conglomerate in India, to link directly with rural farmers via the Internet for procurement of agricultural and aquaculture products like soybeans, wheat, coffee, and prawns. e-Choupal tackles the challenges posed by Indian agriculture, characterized by fragmented farms, weak infrastructure and the involvement of intermediaries. The programme installs computers with

Internet access in rural areas of India to offer farmers up-to-date marketing and agricultural information. (<https://en.wikipedia.org/wiki/E-Choupal>).

e-Governance in India

e-Governance is basically delivery of Government services and information to the citizens using electronic means. E-Governance involves computerization of services to be provided to the citizens. Another aspect of e-Governance is computerization of Govt. Documents, records and various reports. Its effort should aim to achieve a Simple, Moral, Accountable, Responsive and Transparent (SMART) Government.

Important e-Governance projects in India

- **Bhoomi Project:** This is an economically sustainable project and is one of the most successful ICT project based on land records in Karnataka state in India.
- **Gyandoot:** It is recognised as a breakthrough in e-Governance, demonstrating a paradigm shift which gives marginalised tribal citizens their first ever chance to access knowledge with minimum investment. On January 1, 2000, Dhar district of Madhya Pradesh began the new millennium with a mass-based information revolution. Computers in 21 major centres in five Blocks of the district were connected through an Intranet network. This Intranet has been named Gyandoot.
- **Computer Aided Administration of Registration Department (CARD) :** CARD is a major information technology project in Hyderabad, Andhra Pradesh since 1998.
- **FRIENDS :** FRIENDS is the acronym for Fast, Reliable, Instant, Efficient , Network for Disbursement of services. FRIENDS was launched in the capital city of Kerala, Thiruvanthapuram, in June 2000.

OPPORTUNITIES

This section mainly discuss the newly launched ICT projects by Central and State Government. These programmes surely explicit the opportunities of ICT in our country in various sectors like education, employment, market outlet, financial literacy etc.

Education

National Projects

1. M-Shiksha Mitra

To provide various services and teaching-related work to teacher in a simple and easy way, Madhya Pradesh Government in September 2015 launched M-Shiksha-Mitra mobile app. With this, Madhya Pradesh became the first state to develop such mobile app for teachers.

The app can be logged onto by using user name and password issued for Education Portal. All principals, head masters, school in-charge persons and teachers have been directed to register their mobile number on education portal.

(<http://www.jagranjosh.com/current-affairs/madhya-pradesh-government-launched-mshiksha-mitra-mobile-app-for-teachers-1442545988-1>).

2. National Scholarships Portal is said to be a one stop solution for end to end scholarship process right from submission of student application, verification, sanction and disbursement to end beneficiary for all the scholarships provided by the Government of India.

3. Telecom Ministry launched mobile app named Disha to promote digital literacy in Bihar

Telecom Minister Ravi Shankar Prasad on 10 August 2015 launched a new mobile app named Disha to promote digital literacy in Bihar. The app aims to help people learn about computers and Internet through self learning modules. The app also aims to offer digital literacy to tribal and Dalit women in the state. The app can be downloaded for free from the Google Play Store. (<http://www.jagranjosh.com/current-affairs/telecom-ministry-launched-mobile-app-named-disha-to-promote-digital-literacy-in-bihar-1439264631-1>).

4. Union Government launched web portal Vidya Lakshmi for Students Seeking Educational Loans

The Union Government on 15 August 2015 launched a web portal named Vidya Lakshmi (www.vidyalakshmi.co.in) for the benefit of students seeking Educational Loans. It is the first portal of its kind that provides single window for students to access information and make application for educational loans provided by banks as well as for government scholarships. (<http://www.jagranjosh.com/current-affairs/union-government-launched-web-portal-vidya-lakshmi-for-students-seeking-educational-loans-1440140342-1>).

5. E-Pathshala web portal

The Union Human Resource Development Minister Smriti Irani on 7 November 2015 launched the e-Pathshala, Saaransh and National Programme on School Standards and Evaluation Framework (Shala Siddhi) web portals/ mobile apps. E-Pathshala is a web portal which hosts educational resources for Students, Teachers, Parents, researchers and educators. (<http://www.epathshala.co.in/>).

6. Shaala Siddhi web portal

Shaala Siddhi web portal is a comprehensive instrument for school evaluation which enables the schools to evaluate their performance in more focused and strategic manner. The web-portal

will help all schools to assess themselves and the results can be seen by all enabling them to provide feedback. The initiative has already been successfully piloted in four districts of Tamilnadu.

7. Saransh platform

Saransh is a tool which allows the schools to identify areas of improvement in students, teachers and curriculum to facilitate and implement change. The platform is presently available for classes 9th to 12th and provides a comprehensive overview of standard 10th performance since 2007 and standard 12th performance since 2009 till the current academic session.(<http://www.jagranjosh.com/current-affairs/union-government-launched-epathshala-saransh-saala-siddhi-portals-1447052476-1>).

State Projects (West Bengal)

1. Calcuta App

On 27 th October, 2015 a app for calculator for the smart phone users 'Calcuta' is discovered. C.Y.Gopinath was invented this app. An elegant, logical, space-saving radial keypad replaces the decades-old manual calculator style keypad.

It provides facility to delete errors with swipes left or right, to move numbers in and out of Memory with taps and double taps.

erase memory by wiping it with your finger.

to share the whole calculation by email with a friend or yourself — as a neatly formatted table, ready to go into a spreadsheet or word processor.

Market Outlet

National Projects

1. Mahila E-HAAT

The Union Government has launched an online marketing platform Mahila E-HAAT to facilitate women entrepreneurs to sell their products to buyers. It was launched by Union Women and Child Development Minister Maneka Gandhi in New Delhi. The Mahila e-Haat portal can be accessed at <http://mahilaehaat-rmk.gov.in>.

Key facts Mahila E-HAAT is an online marketing platform to facilitate women entrepreneurs to sell their products to buyers. It is an initiative mainly for women across the country and is part of Union Government's flagship 'Digital India' and 'Stand Up India' initiatives.

2. ASCI launches ASCI online mobile app to curb misleading advertisements

Advertising Standard Council of India (ASCI) has launched ASCIonline, a mobile application in a

bid to address misleading advertisements. The application will provide consumers/users platform to report complaint services for misleading advertisements on a mobile apart from ASCI's online complaint facility. It is India's first consumer complaint mobile app. The mobile app is available free of cost on playstore (for android devices).

(<http://currentaffairs.gktoday.in/asci-launches-ascionline-mobile-app-curb-misleading-advertisements-06201523753.html>).

Employment

National Projects

1. National Web Portal for Apprenticeship Training

On September 10, the Human Resource Development Minister Smriti Irani launched the national web portal for promotion of a national apprenticeship scheme. The scheme is aimed at people who have a graduate degree, hold a diploma, have cleared their 10+2 or hold vocational certificates. It aims to provide opportunities for practical training. It will also be a multilingual platform which currently engages with the user in four languages, which are- Marathi, Bengali, Tamil and Hindi.

Irani also asked the All India Council for Technical Education (AICTE) and National Skill Development Corporation (NSDC) to come together to expand the outreach and exposure, especially for the students of Class 11 and 12. A logo and a slogan "**Sashakt Yuva, Samarth Bharat**" was also released for the portal.

(<http://indiatoday.intoday.in/education/story/national-web-portal-for-apprenticeship-training-launched/1/470970.html>).

2. Union Government launched National Career Counselling portal

Union Government on 20 July 2015 launched National Career Counselling Portal to modernize all government-run employment exchanges. The portal was launched under the aegis of **National Career Service (NCS) project** of Union Ministry of Skill Development and Entrepreneurship.

The portal aims to bring on board around 20 million job seekers already registered with employment exchanges across India. It also aspires to bring 900000 establishments and companies on the

portal. (<http://www.jagranjosh.com/current-affairs/union-government-launched-national-career-counselling-portal-1437475126-1>).

3. www.eex.dcsmse.gov.in

On 14th June 2015, Union Minister for Micro, Small and Medium Enterprises Kalraj Mishra launched [eex.dcsmse.gov.in](http://www.eex.dcsmse.gov.in), a digital Employment Exchange for Industries portal which will connect job seekers and employers.

The employers and job seekers can now register at www.eex.dcsmse.gov.in and already two

lakh job seekers have already registered themselves.

4. India launched eMigrate system for Foreign Employers

India in June 2015 launched online registration system named eMigrate system (www.emigrate.gov.in) for foreign employers (FEs) who wants to recruit Indian workers, including nurses. Under the system, FEs will have to register in the eMigrate system.

Health

National Projects

1. mSehat

Uttar Pradesh government on 13 October 2015 launched the mobile app **mSehat** for health workers to record maternal and infant data in real-time. The application was developed by Kellton Tech, a company that was selected as the technology partner for the initiative by State Innovations in Family Planning Services Agency (SIFPSA). The application is aimed at improving the infant mortality rate outcomes. (<http://www.jagranjosh.com/current-affairs/uttar-pradesh-government-launched-mobile-app-msehat-for-health-workers-1444902142-1>).

State Projects (West Bengal)

1. Mobile app by Dhanwantari Medicare

Renowned medicine shop Dhanwantari Medicare starts a mobile app for selling medicines. Ravindra Khandelwal, one of the chief officers said that the interested customer has to dial 8444004004, then a link will be sent to customer's mobile from the shop. The customer just to click the link to download and install the app. But the customer has to buy medicine of minimum 500 rupees. The aim of Dhanwantari is to reach 1 lakh customers within one year.

2. Telemedicine Congress. Kolkata

The 11 International Conference of Telemedicine Society of India (www.telemedcongress.in), held in Kolkata from 27, 28 & 29 Nov, 2015. Telemedicine Society of India is an Academic Organization promoting education, research and care of patients using telemedicine and eHealth. Telemedicine Congress has at least 350 participation from all over the world. This congress is intended for Healthcare Academicians, Researchers, Policy makers & medical students of Nursing and Allied health sciences.

Agriculture

National Projects

1. Hailstorm App

To fasten payment of crop insurance claims to farmers, the Centre on 5th October, 2015 launched

a pilot programme Kisan, which will use satellite and drone-based imaging and other geospatial technology to get timely and accurate data on crop yields. Payment of crop insurance claims is done on the basis of crop cutting experiments and the government was concerned over the delays in settlements. The app will be used by state agriculture officials and the data will help the Union Agriculture Ministry in having very fast assessment of damage to crops because of hailstorm. (<http://economictimes.indiatimes.com/news/economy/agriculture/government-unveils-kisan-project-hailstorm-app-to-assess-crop-damage/articleshow/49226885.cms>).

2. Crop Insurance and AgriMarket Mobile

Union Agriculture & Farmers Welfare Minister Radha Mohan Singh on 23 December 2015 launched two mobile apps namely Crop Insurance and AgriMarket Mobile. The apps were launched to celebrate the birth anniversary of former Prime Ministers Atal Bihari Vajpayee and Choudhary Charan Singh. The Mobile app Crop Insurance will help the farmers not only to find out complete details about insurance cover available in their area but also to calculate the insurance premium for notified crops, coverage amount and loan amount in case of a loaned farmer.

Mobile app AgriMarket Mobile can be used by the farmers to get the market prices of crops in the mandi within 50 km radius of the device and other mandis in the country. This app automatically captures the location of person using mobile GPS and fetches the market prices of crops in those markets which fall within the range of 50 km.

(<http://www.jagranjosh.com/current-affairs/union-government-launched-two-mobile-apps-for-farmers-1450928088-1>).

Financial Literacy

List of latest schemes and apps launched by banks in 2015

These are the Important Apps and schemes list which were launched By indian Banks Recently to Make Banking Easy for Customers. This list Updated till January 2016 End.

1. Asha Home loan – AXIS BANK
2. Boutique Financing Scheme – SBI
3. Branch on Wheel – ICICI Bank in Odisha
4. Chillar – HDFC Bank
5. China's first online Banking "webank" – Tancet Holdings
6. DDA Housing Scheme 2014 – HDFC Bank
7. Digital Banking "POCKET" – ICICI

8. Digital Village Project in Akodara Village of Gujarat – ICICI
9. eforex – SBI
10. E-KYC – SBI
11. Emi On Debit Card – ICICI BANK
12. E-Wallet – IRCTC
13. Facebook-based funds transfer platform “KayPay” – Kotak Mahindra Bank
14. First home grown INDEX “COMPOSITE INDEX” – SBI
15. I-Mobile app for windows phone – ICICI
16. India’s first” transparent credit card “in association with American Express – ICICI
17. ICICI Apathon App – ICICI Bank launches ‘ICICI Appathon’, a Mobile App Development Challenge
18. India’s first credit card exclusively for Golf Lovers – RBL Bank
19. Instant money transfer – BOI
20. Instant Money Transfer (IMT) – Bank of India
21. Kisan card – AXIS BANK
22. Maha Millionaire”, “Maha Lakhpati” – Bank of Maharashtra
23. M-Pesa – ICICI+Vodafone
24. M-Wallet – Canara Bank
25. State Bank Freedom App – State Bank of India
26. Student Travel Card – ICICI
27. TAB BANKING FACILITY – SBI
28. Tap and pay – ICICI
29. Twitter Handle account – SBI
30. Video conferencing – Indusuld & federal bank
31. Youth for India – SBI
32. First home grown INDEX “COMPOSITE INDEX” – SBI
33. IMobile app for windows phone – ICICI
34. India’s first” transparent credit card “in association with American Express – ICICI
35. India’s first credit card exclusively for GOLF – RBL Bank
36. Instant money transfer – BOI
37. Kotak Bharat’ mobile banking app - Kotak Mahindra Bank (KMB)
38. ‘Saral Rural Housing Loan’ Scheme - ICICI Bank
39. Awareness initiative ‘Dhanchayat - HDFC Bank

(<http://www.studyhaba.com/list-of-important-apps-launched-by-banks-in-2015-appsschemes/>)

Income Tax Payment (e-Commerce)

1. Makeyourtax.com

Makeyourtax.com, a startup funded and incubated by Indus Net Technologies and Taxmantra, is an online tax return preparation and filing software for businesses, individuals, chartered accountants and tax professionals. The software allows hassle free preparations and filing of tax returns, from anywhere and at any point of time. The online application is 100 percent cloud based which makes it easy to access for multi-users and provides total flexibility between the tax payer and the tax consultant. (<http://www.makeyourtax.com/about-us/>).

2. e-Sahyog

Union Finance Minister Arun Jaitley has launched an e-Sahyog pilot project of Income-Tax Department to facilitate taxpayers to reduce their need to physically appear before tax authorities. Main key fact about e-Sahyog project is to reduce compliance cost, especially for small taxpayers and provide an online mechanism to resolve mismatches in Income-tax returns. As part of the digital initiative, IT Department will provide an end to end e-service using SMS, e-mails to inform the tax assesses of the mismatch. (<http://currentaffairs.gktoday.in/union-government-launches-e-sahyog-pilot-project-facilitate-taxpayers-10201527733.html>).

3. Urban Development Minister launched portal for small traders' e-lala

Urban Development Minister Venkaiah Naidu on 23 November 2015 inaugurated 'e-lala', an e-commerce portal of Confederation of All India Traders (CAIT) in New Delhi.

The e-lala initiative is aimed at promoting the interests of 5.77 crore small businesses in the context of rapid expansion of e-commerce in the country.

E-lala will enable physical stores to have their own online stores enabling them to retain their customer base besides additional source of growth in business.

It seeks to eliminate middlemen and resulting in reduced cost of goods and services.

(<http://www.jagranjosh.com/current-affairs/urban-development-minister-launched-portal-for-small-traders-elala-1448280496-1>).

4. Telangana launched e-Vahan Bima Scheme

Government of Telangana on 2 January 2016 launched e-Vahan Bima Scheme to issue motor insurance policy in digital form. The scheme was launched by Information Technology Minister K T Rama Rao in the presence of T S Vijayan, Chairman of Insurance Regulatory Development Authority (IRDA). With the launch of this scheme, Telangana became the first state in the country to legally accept motor vehicle insurance policy in digital form. Under the scheme, an electronic motor insurance policy is issued in digital form with Quick Response (QR) code.

(<http://www.jagranjosh.com/current-affairs/telangana-launched-evahan-bima-scheme-1451883986-1>).

Indian railway

National Projects

1. Indian Railway knowledge Portal

Minister of Railways Shri Suresh Prabhakar Prabhu on 28 th September, 2015 launched Indian Railway Knowledge Portal namely www.kportal.indianrailways.gov.in which has aggregated most of the available knowledge about Indian Railways at one location and has also tried to encompass as much knowledge as possible, by linking websites, documents etc. for dissemination of knowledge on Indian Railways. This portal is an initiative of the National Academy of Indian Railways (NAIR), Vadodara. This initiative is in line with the “Digital India” campaign of the Hon’ble Prime Minister Shri Narendra Modi.

State Projects (West Bengal)

1. Metro App

On 13 th October, Kolkata metro Apps was started. The interested passangers can know every detail of metro rail including time schedule, train fare etc. from anywhere.

2. Paperless ticket

Estern railway ticket started .paperless ticket to decrease the use of paper tickets. For this the railway launched a new mobile app through which the passengers can have tickets of local train as well as express trains.

Tourism

1. e-tourist visa scheme

To encourage the foreign countries, Govt. of India implemented 150 e-tourist visa scheme. Govt. announced to extend this facility to 37 more countries. Before it, this scheme was implemented in 113 countries. (<https://indianvisaonline.gov.in/visa/tvoa.html>)

Use of ICTs in LPG Connection

1. Union Government launched SAHAJ scheme for online release of new LPG connections

Union Government on 30 August 2015 launched a scheme named SAHAJ for online release of new LPG connections for the consumers. The scheme launched by Petroleum and Natural Gas Minister Dharmendra Pradhan can be availed through the portal mylpg.in.

SAHAJ facility will enable the prospective customers to post online request for a new connection by filing Know Your Customer (KYC) form, uploading photographs and bank account details. After submission, the customer will receive the registration number to know the connection status. (<http://currentaffairs.gktoday.in/current-affairs/digital-india>).

2. PAHAL Scheme

Union Government's ambitious Pratyaksha Hastaantarit Laabh (PAHAL) scheme has been acknowledged as the world's largest cash transfer program (households) by the Guinness Book of World Records. Pratyaksha Hastaantarit Laabh (PAHAL) scheme The scheme was formally launched as Direct Benefit Transfer Scheme for LPG subsidy in 2013 in 291 districts under the aegis of Union Ministry of Petroleum and Natural Gas. It was modified and christened as PAHAL in November 2014 and was launched in 54 districts. Currently it covers more than 9.75 crore LPG consumers across the country. The scheme aims at eliminating duplication or bogus LPG connections and its diversion. (<http://currentaffairs.gktoday.in/current-affairs/pahal-scheme>).

Projects under Digital India

1. Prime Minister launched Digital India Week to spread awareness about Digital India Programme

Prime Minister of India Narendra Modi on 1 July 2015 launched the Digital India Week in New Delhi. The newly created week is aimed at encouraging people's involvement and creating awareness among them about various initiatives launched under the Digital India Programme launched in August 2014.

2. **Digital Locker System** aims to minimize the usage of physical documents and enable sharing of e-documents across agencies. The sharing of the e-documents will be done through registered repositories thereby ensuring the authenticity of the documents online, says the government.

3. MyGov.in

MyGov.in has been implemented as a platform for citizen engagement in governance, through a "Discuss", "Do" and "Disseminate" approach. **The mobile app for MyGov** would bring these features to users on a mobile phone.

4. **Swachh Bharat Mission (SBM) Mobile app** would be used by people and Government organizations for achieving the goals of Swachh Bharat Mission.

5. **eSign framework** would allow citizens to digitally sign a document online using Aadhaar authentication.
6. **The Online Registration System (ORS)** under the eHospital application has been introduced. This application provides important services such as online registration, payment of fees and appointment, online diagnostic reports, enquiring availability of blood online etc, the government claims.
7. **Digitize India Platform (DIP)** for large scale digitization of records in the country that would facilitate efficient delivery of services to the citizens.
8. **Bharat Net**, a high speed digital highway to connect all 2.5 lakh Gram Panchayats of country. This would be the world's largest rural broadband connectivity project using optical fibre.
9. BSNL has introduced **Next Generation Network (NGN)**, to replace 30 year old exchanges, which is an IP based technology to manage all types of services like voice, data, multimedia/ video and other types of packet switched communication services. BSNL has undertaken large scale deployment of Wi-Fi hotspots throughout the country. The user can latch on the BSNL Wi-Fi network through their mobile devices. (<http://www.jagranjosh.com/current-affairs/prime-minister-launched-digital-india-week-to-spread-awareness-about-digital-india-programme-1435747890-1>).

10. Punjab Chief Minister Parkash Singh Badal launched Punjab ePMS portal

Punjab Chief Minister Parkash Singh Badal on 2 July 2015 launched the state Portal ePMS (Electronic Projects Management System) to fast track infrastructural development. The portal was launched during the Digital India week. The project was started to enhance efficiency, bring transparency, boost the investor confidence, revive the investment cycle, eliminate the human interaction and improve the communication between industries to Government (B2G), State to Centre (G2G), or vice versa (G2B).

(<http://www.jagranjosh.com/current-affairs/punjab-chief-minister-parkash-singh-badal-launched-punjab-epms-portal-1435897682-1>).

11. Microsoft agreed to set up Digital Village in Maharashtra

Software major Microsoft in first week of July 2015 agreed to develop Smart MIDC (industrial colony) and support Digital Village in Maharashtra. The information was given by Maharashtra Chief Minister Devendra Fadnavis after his meeting with India-born Microsoft CEO Satya Nadella. *ICT Projects for Overall Development*

National Projects

1. e-Pragati

7th September Andhrapradesh Govt. started e-Pragati scheme to bring all Government services

under one roof. It has achieved yet another first by launching the AP State Enterprise Architecture (APSEA), a comprehensive architecture to leverage the latest advances in e-governance tools. The project is envisaged to be implemented in three phase and set for completion by December 2017. The project is aimed at bringing together 745 G2B (government to businesses), G2C (government to citizens), G2E (government to employees) and G2G (government to governments) services offered by 33 departments and more than 300 government agencies.

(<http://www.thehindu.com/news/national/andhra-pradesh/epragati-to-bring-all-govt-services-under-one-roof/article7620552.ece>).

2. NXT DIGITAL- Headed In The Sky

Keeping the diversity of the Indian market in mind, Finance Minister Arun Jaitley started a digital platform named NXT DIGITAL. It offers 500+ channels and services, arrives at packaging and bundling of channels best suited to market's requirement. NXT DIGITAL offers the customer the best in class Set Top Boxes and the convenience of buying them in very small quantities. NXT DIGITAL also provides customized support to the end customer in regional languages. (<https://www.nxtdigital.in>).

3. "mls.org.in"

The Maharashtra state legislature has become the first in the country to launch an online mechanism for legislators to send questions and move different motions in the House. The website "mls.org.in" has been launched as part of Digital MLAs initiative in the winter session of state legislature in Nagpur. To access the website, all MLAs and MLCs have been given unique user names and passwords so that they can send their questions and requests online. The system also facilitates them to move different motions like calling attention and half-an-hour discussion questions for legislature sessions. This facility is designed by the Maharashtra Knowledge Corporation Limited (MKCL) and available on Unicode and can be accessed in Marathi. (<http://www.gktoday.in/gk-current-affairs-december-8-2015/>).

4. Udio

TranServ The leading digital payments company, TranServ has launched 'Udio' India's first Social Mobile Wallet. The Udio Wallet integrates a social, community-driven aspect with anytime, anywhere accessibility to digital P2P (peer-to-peer) transactions via its secure and seamless payment structure, creating a ubiquitous ecosystem for both consumers and brands. It enables squaring of dues, sharing dinner bills or a cab ride a hassle free task.

(<http://www.gktoday.in/gk-current-affairs-january-22-2016/>).

5. Citizen Portal

Odisha Chief Minister Naveen Patnaik on 3rd October inaugurated a state police-citizen portal, enabling tech-savvy people to send their complaints online to the authorities. All the 531 police stations in the state have been linked through the online portal

<http://www.citizenportal-op.gov.in>. People can also track the status of the complaints registered by them on the portal, he added.

(<http://indianexpress.com/article/technology/tech-news-technology/odisha-cm-naveen-patnaik-launches-police-citizen-portal/>).

State Projects (West Bengal)

1. e-district scheme

In October, the e-District mission was implemented in 341 blocks of West Bengal. e-District is a Mission Mode Project with the objective of making the State's services available to the citizens through a computerized system. The services may be availed of through Internet or by visiting any CSC-s (Common Service Center) or a Kiosk. It may not be necessary to visit the Government Offices for submitting the application, knowing the status or receiving certificate / license etc.

(<https://edistrict.wb.gov.in/PACE/login.do>).

2. GPMS (Gram Panchayat Management System)

GPMS (Gram Panchayat Management System) is a part of the e-Governance initiatives of the Panchayats & Rural Development Department of the Government of West Bengal, focused to Gram Panchayats which is the lowest tier of the three-tier Panchayati Raj system and the institution closest to the common people. The prime focus of the software is to standardize the accounting system of the PRIs and to make account keeping easy, transparent and comfortable to the users. GPMS also helps the Gram Panchayats in rendering a number of citizen centric services viz., issue of Birth & Death Certificates, Assessment of Tax on Land and Buildings, Issue of Trade Certificates etc. (<http://www.wbprdgms.in>)

WEAKNESSES

Disadvantages (weaknesses) of ICT projects

- **Policy considerations** : Most developing countries lack policies and strategies that facilitate the harnessing of new ICTs for rural development and where policies have been formulated , proper implementation plans are needed (Fillip, 2000), but that has not been seen in India.

- **Poor Infrastructure** : The telecommunication and electricity infrastructure in India is lacking or is poorly developed in rural areas. Satellite and wireless technologies are also not developed up to the mark.
- **Lack of local content and language barrier** : Information available through ICTs is mostly in English which the majority of the rural communities can not utilise. There is a marked shortage of relevant materials in local languages that responds to their needs.(O'Farrell et. al., 1999).
- **High rate of illiteracy** : A large proportion of the rural population in India , majority of whom are women , is illiterate. This means that these individuals are disadvantaged and lack the basic skills required to harness the benefits of ICTs.
- **Inadequate human resources** : To ensure more meaningful participation in rural development, and to pave way for the creation of a critical mass of people that effectively harness ICTs in India, training and capacity building must be an integral part of all ICT projects. (Mondal and Ray, 2009), but unfortunately it does not seem during the implementation of various ICT projects.
- **Sustainability of projects**: Most projects established with external funding face major challenges after the project period has ended. (Mondal and Ray, 2009). Due to corruption most projects cannot be implemented successfully.

THREATS

- **Cyber crime**: Dr. Debarati Halder and Dr. K. Jaishankar (2011) define cybercrimes as: "Offences that are committed against individuals or groups of individuals with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm, or loss, to the victim directly or indirectly, using modern telecommunication networks such as Internet (Chat rooms, emails, notice boards and groups) and mobile phones (SMS/MMS)"(<https://en.wikipedia.org/wiki/Cybercrime>).
- **Hacking**: In the computer security context, a hacker is someone who seeks and exploits weaknesses in a computer system or computer network. Hackers may be motivated by a multitude of reasons, such as profit, protest, challenge, enjoyment, or to evaluate those weaknesses to assist in removing them.(<https://www.google.co.in/search?q=role+of+ICT+in+empowerment+&hl=en&hl=en&q=hacking>). Hence, Attacks on system software by external networks or hackers is an important threat for ICT projects.
- **Virus affected**: A virus is a computer program that can copy/replicate itself and infect people's computers. A computer virus can get into project's website and get files and information that are sent and received by the user of the project. Some viruses can get into project's website system and try to steal personal and confidential information such

as the passwords or any other confidential and necessary information regarding project planning.

- **Introduction of malicious code:** Malicious code is the term used to describe any code in any part of a software system or script that is intended to cause undesired effects, security breaches or damage to a system. Malicious code describes a broad category of system security terms that includes attack scripts, viruses, worms, Trojan horses, backdoors, and malicious active content. (http://www.webopedia.com/TERM/M/malicious_code.html).
- **E-waste and environmental threats:** Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered e-waste. Informal processing of electronic waste in developing countries may cause serious health and pollution problems, as these countries have limited regulatory oversight of e-waste processing. (https://en.wikipedia.org/wiki/Electronic_waste). As ICT flourishes all over the country e-waste has to be generated and that ultimately causes major environmental threats for the society.
- **System hardware or software failures:** This is also one of the important threats of ICT. If system hardware or software fail when some serious and necessary information is needed, that would cause a serious loss to the farmers, customers and users of the ICT project.
- **Eavesdropping on the system:** Eavesdropping is secretly listening to the private conversation of others without their consent, as defined by Black's Law Dictionary. (<https://en.wikipedia.org/wiki/Eavesdropping>). If eavesdropping happens on the system of the ICT projects, the important, confidential and necessary information regarding project will be leaked or destroyed by the eavesdroppers.

CONCLUSION AND SUGGESTIONS

Knowledge transfer through education and training has been a central concern of rural development initiatives over the years. Recent developments in ICTs offer great potential to support and enhance education and training for development. Information and communication activities are a fundamental element of any rural development activity. Through ICT it is becoming more open, more participatory and more demand driven, involving interactivity, negotiation and two-way information exchanges. There is a new emphasis on the acquisition of information and enabling the rural poor to request information specific to their particular livelihood needs. It is useful to distinguish between knowledge gaps that refer to unequal distribution of technical knowledge and information problems, both of which contribute to underdevelopment. ICTs have the potential to address both these barriers to rural development

by facilitating improved knowledge sharing and information exchange. But still the potential role of ICTs for rural development tend to be constrained by an inherent mutual lack of understanding between technology drivers and development agencies. As a result, ICT applications in developing countries remain largely uninformed by recent developments in the wider development literature and conversely many development agencies have failed to effectively mainstream strategies to harness the potential of ICTs.

Poor infrastructure, poor network, lack of computer literacy, poverty, illiteracy, language barrier etc. are the main problems in the way of implementation of ICT projects. Lack of knowledge about proper and exact needs of the villagers of different areas, lack of sense of the consequences in the future that may be brought by the project, corruption in e-governance and almost in every long lasting programmes of India are the major problems also. Hence, ultimately the digital divide between rural and urban areas is increasing and is often characterized by low levels of access to technologies. Hence, some suggestive measures should be taken for proper implementation of ICT projects immediately.

- ✓ More community based ICT centres should be set up in the rural areas and people with requisite knowledge and skill be put in charge to ensure good maintenance culture.
- ✓ The ICT centres should be attached to schools in the communities to enable the schools children to have hands- on experience in using ICTs.
- ✓ ICTs can help empower the poor to take control of their knowledge environment. This can lead to improved sharing of information locally resulting in greater choices for livelihood strategies e.g. cataloguing and sharing experience between farmers. Local information exchange can help the rural poor organise as groups, articulate needs, defend interests and increase bargaining power. ICTs can help pro-poor institutions listen to the poor, engage in more meaningful dialogue and build consensus and mutual understanding around development objectives.
- ✓ In terms of market opportunities, emerging agricultural technologies are increasingly information intensive and the rural poor must now cope with increasingly sophisticated input and output markets. Hence, this must be kept in mind while planning the outlet of an ICT project.
- ✓ In order to improve access to indigenous and modern knowledge, the key lies in creative mechanisms for content development. Internet content should be produced in ways that are easily understood by rural people with low literacy, including streaming media, audio-visual and web designing formats .This is because the issue of user acceptance of ICTs in the rural areas is very crucial to the success of ICT policies.
- ✓ Corruption must be less in all administrative level.

The importance of ICT can not be denied now-a-days by any means. But the suggestive measures should kept in mind. The government alone cannot carry out this programme. Support is needed from various non -governmental organisations, corporate bodies and individuals from all the areas and from all sectors of beneficiaries. Thus the urban-rural disparity in the distribution of ICTs which has created a localized digital and information divide must be tackled and dealt with decisively if the rural areas in India are to take full advantage of these technologies to enhance their socio - economic development as well as the overall development of the country.

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