Advances in Computer Science and Information Technology (ACSIT)
p-ISSN: 2393-9907; e-ISSN: 2393-9915; Volume 6, Issue 1; January-March, 2019, pp. 11-14

http://www.krishisanskriti.org/Publication.html

RailTel: Pioneer in Indian Digital Revolution

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Abstract—*In words of Hon'ble Minister of Communication and IT, Sh. Ravi Shankar Prasad "Digital India is more for the poor and underprivileged. It aims to bridge the gap between the digital haves and have-nots by using technology for citizen". The Digital India campaign is a dream venture of the Government of India which was launched on 1 July 2015 by Honorable Prime Minister Narendra Modi to change India into a digitally empowered society and knowledgeable economy and, along with good governance for citizens with an objective of providing transparent, participative and responsive government. Digital India envisage, universal digital literacy and approachability for all digital resources for citizens by ensuring that the services and resources are accessible in local regional languages and providing digital scaffold to participatory governance ensuring convenience, like making all government certificates and documents available on the Cloud with portability. The objective of this paper is to provide the information that how the telecom arm of India Railway, RailTel Corporation of India ltd. is converting the dream of Digital India into reality. The research methodology is descriptive in nature and the data for this study is collected through secondary sources such as websites, newspapers, magazines etc. The study gives a bird eye view of the operation undertaken by RailTel for the growth of Indian Digital Economy.*

Keywords*: Digital India, Governance, Indian Railway, RailTel, RailWire.*

1. INTRODUCTION

In words of Hon'ble Prime Minister Sh. Narendra Modi "E-Governance is an essential part of our dream of Digital India, the more technology we infuse in Governance, the better it is for India". RailTel, A Miniratna PSU under Ministry of Railways providing a digital network framework across the country and converting the dream of Digital India into reality. RailTel was formed on Sep'2000 with authorised capital of Rs. 1000 Cr. RailTel is a NLD, ISP (Class A) licenses holder and UL (for ILD) and IP-1 registration holder from DoT.

RailTel is one of the largest neutral telecom services providers in the country owning a Pan-India optic fiber network of more than 45000 RKM. covering all important towns & cities of the country and several rural areas covering 70% of India's population. RailTel is in the forefront in providing nationwide Broadband Telecom & Multimedia Network in almost all parts of the country in addition to modernization of Train operations and administration network systems for Indian Railways.

With its Pan India high capacity network, RailTel is working towards creating a knowledge society at various fronts and has been selected for implementation of various mission-mode Govt. of India projects in the telecom field. RailTel started its journey as a Telecom service provider with traditional services like –MPLS VPN, Tower Co location, Leased line etc. With time the service portfolio diversification was done and now RailTel is also providing Enterprise services like HD Video Conferencing (Telepresence as a Service), Data Centre Service, Retail broadband service- RailWire etc.

The growth of RailTel has been steady and over the years it has established itself as a dependable service provider. RailTel has generated revenue of 1025 cr. in FY 17-18 which is 13.88% higher than the previous year's revenue. The profit before tax of RailTel is 196 cr. for FY 17-18 and RailTel has given a dividend of Rs. 44.47 cr. to railways apart from the revenue share of Rs. 27.64 cr.

The footprint of RailTel is changing telecom and ICT scenario of India. RailTel is an integral part of Digital India Mission which envisages creating a Digital society for inclusive growth. RailTel is currently executing/ planning to execute many projects which are / is going to change the digital map of the nation.

Creating Digital Hub In Indian Railway Station.

A railway station is a place which is accessed and frequented by people from every walk of life, every class, social strata and railway stations are present in the remote areas of the country as well.

1. Railway station Wi-Fi project

RailTel has taken a lead in providing fast Wi-Fi for the use of passengers at A1 & A and B category Railway stations. RailTel roped in Google as the technology partner for setting up fast Wi-Fi network initially covering 400 A1 & A category stations. Under this partnership, RailTel has enabled 700+ stations with Wi-Fi facility as on date. The station Railwire Wi-Fi is a state of the art high speed network backed by the physical infrastructure of RailTel and high-end technology

from Google. RailTel is upgrading its backbone infrastructure to backhaul high speed connectivity of approx. 1Gbps per station.

2. Rural Station Wi-Fi project

RailTel has started a project of providing RailWire Wi-Fi at rural stations as a pilot project. This project is going to be a pioneer in bridging the digital divide between urban and rural India as these 200 stations will be quintessentially stations which cater to rural areas where the internet service is either unavailable or not upto the mark. A Digital Service centre will be set up in these stations to extend digital literacy and various online services to rural population.

Redefining Rail Experience

Indian Railways remains a very big mode of transport with 2.3 Cr people using Railways to commute per day on an average. It is one of the major touch points for an average citizen.

1. Rail Cloud

RailTel has been entrusted with setting up of Rail Cloud – the cloud service to Indian Railways to create a common IT infrastructure platform, which will enable hosting of all future IT applications and rapid development of IT applications. This is a core support to the **One ICT programme of Railways which is a** strategic initiative of Indian Railways for business transformation and bringing Indian Railways on one digital Platform. RailTel is hosting the Rail Cloud in its Tier III Data Centers at Secunderabad and Gurugram. The Rail Cloud will reduce procurement/provisioning of IT infrastructure (IT hardware/platform) to less than 24 hours which will revolutionize the pace of IT deployment on IR. The Rail Cloud is expected to be highly scalable with optimized management solutions to scale both vertically and horizontally for meeting the current and future requirements of IR.

2. Railway Display Network

RailTel has conceptualized an integrated railway display network of more than 1 lakh screens spread across 2,000+ stations equipped with an array of connected LED screens and video-walls. These screens shall be connected using RailTel's extensive fiber network and managed centrally from data center. With its spread this will be one of the largest centrally controlled Display Network of the world. The screens shall enable relevant passenger and train information, travel & tourism related information and local station guides among other. Being centrally controlled, it will also enable providing relevant social messages and emergency communication while being fully integrated with social platforms. After the successful Proof of Concept (PoC) of RDN deployment at 16 stations (4 big stations and 12 small stations) RailTel has geared up for full-fledged execution and the roll out will start soon.

3. Content on Demand

Under this project, entertainment in the form of video content will be provided as a service on trains.

4. Nirbhaya Project

RailTel has been entrusted with the execution of 'Nirbhaya project' - Indian Railways endeavor to setup high-tech surveillance system at 983 stations of A1, A, B and C category railway stations for providing safe, secure and pleasant experience to Railway passengers especially women and children. The project envisages to provide high level security vigilance and improve the ensuing action in case of an alert by adding state of art functions like motion detection, quick review and intrusion detection. In the video surveillance solution, each station will have robust, secure and scalable network architecture implemented which will cover all platforms and other areas such as waiting halls, ticket counters, entry, exit, refreshment area, and foot over bridge, parking area etc. of a railway station. This network will work as a platform for implementation of Video Management, Video Recording, Video Analytics and Facial Recognition System etc.

Creating a Knowledge Society

Access to high speed affordable internet is a basic necessity. Especially it is crucial for education institutions as it opens a door of opportunity for students, faculty and stakeholders by accessing knowledge base already available.

1. National Knowledge Network-

National Knowledge Network (NKN), a visionary project of Govt. of India, envisages connecting all higher centers of learning and research by bringing together all stakeholders from science, technology, higher education, healthcare, agriculture and governance to a common platform. RailTel has been selected as one of the implementing partners of the network by providing high capacity bandwidth pipes for the NKN project.

2. Central University Wi-Fi Project-

RailTel has bagged the order for building and maintaining state of art carrier grade Wi-Fi Network in the 38 universities across country. The network would distribute the bandwidth provided by NKN (National Knowledge Network) to the end users i.e. Students, Faculty & Staff of the University. The 38 universities includes Central university of Karnataka, Central University of Kerala, Central University of Tamil Nadu, Rajiv Gandhi University, Itanagar, Assam University , Silchar, Tezpur University, Tripura University, Viswa Bharati, Shantiniketan, Central etc.

Bridging the Digital Divide

1. Bharatnet-

BharatNet is one of the most important component for bringing internet service to the rural population and RailTel is proud to be a partner in this project. Under phase-I, RailTel has been allotted 8768 GPs for providing broadband services in the States of Gujarat, Daman and Diu, Dadra and Nagar Haveli, Puducherry & North Eastern states- Meghalaya, Mizoram, Tripura, Arunachal Pradesh, Manipur, and Nagaland. All the contracts for the Phase-1 work have been awarded.

The work for providing cutting edge infrastructure through BharatNet is on full swing. RailTel has already completed all the GPs in Puduchery and then have been successfully commissioned in Mar'15. In addition to this, all the GPs in Anand District & Vadnagar block of Gujarat, Unakoti District of Tripura & Bishnupur District of Manipur has been commissioned in all respect. Work in other gram panchayet is on track and RailTel expect to meet the deadlines.

BharatNet is a challenging project for RailTel in many aspects. The mammoth task of connecting the unconnected part of India came with it's fare share of roadblocks. The terrains allotted to RailTel in North East area are hilly area and difficult to reach. Narrow roads, non existent basic infrastructure and harsh weather made it even more difficult to lay OFC cable for creating a robust network.

2. USOF Project – NE 1& NE 2

RailTel is also developing telecom infrastructure in North East area by creating intra/inter district network connecting all District Head Quarters (DHQ) and SDHQs (block) in the respective states under the NE1-NE2 project of USOF/DoT. North eastern states being one of the most unconnected areas this project is surely going to be a landmark project in bringing telecom infrastructure to the farthest part of the country.

3. RailWire: Express Network

The retail broadband model of RailTel which creates an ecosystem of growth for others as well by roping in Local Cable operators as our Last Mile connectivity partners. Currently RailTel has more than 1 lakh customers across India and the number is rapidly increasing.

ICT Advantage to Coal Sector

RailTel is one of the pioneer in providing MPLS-VPN connectivity to major companies in coal sector. Till date RailTel has commissioned around 700 links for various key players like Eastern Coalfields, Coal India Ltd. BCCL etc. by connecting their weigh bridges, offices, HQs etc. spread over a wide geographical areas in difficult terrains with virtually no infrastructure availability.

Project Panchdeep

Employee State Insurance Corporation (ESIC) is one of the largest e-Governance project of Government of India with more than 6 crore beneficiaries across 2200 locations. RailTel has been entrusted with the Operations and Maintenance of ESIC Panchdeep project which includes - **Pehchan** (All services related to issues pertaining to identification, authentication and verification of IP's) – **Pashan** (All services related to hardware of data center, disaster recovery, desktops/PCs/Laptops/Printers and middleware) **Dhanwantri** (All services related to the hospitals, dispensaries and diagnostic centers where medical aid is provided) **Milap** (All services related to provision of networking and bandwidths) and **Pragati (**All services of ERP modules related with Finance, Human Resources, Legal, Audit, Annual Performance Appraisal Report, Public Grievance, Right To Information, Vigilance, Training, Project Management, Recruitment, Central Receipt and Issues, Library, Material Management, Campus Management, Health Insurance Module and Document Management System)

CSR- Bringing a Positive Change

RailTel's CSR (Corporate Social Responsibility) projects are also focused on achieving the goal of Digital India. RailTel has already provided high speed Wi-Fi facility at National Rail Museum.

RailTel have started Community Resource Information Centers (CRIC) at 5 Villages of Meham Block of Rohtak District which aim to provide Digital Literacy to over 1000 beneficiaries in a year. The training is being provided free of cost to all beneficiaries in partnership with a NGO (Digital Empowerment Foundation). These centers are provided with digital infrastructure like Railwire Internet, laptops, Printer, Projector with screen etc. Beneficiaries of CRIC centers includes people from all spheres of life like students, teachers, adults (focus on unemployed youth, women, farmers),Panchayat Members, anganwadi Workers, self help groups, Govt. employees (agriculture, rural development, health workers, etc.)

RailTel is also planning to provide Free Wi-Fi facility at 200 villages benefitting over 2 lakh of rural population, Digital Service Centers at 10 rural Railway stations across India providing digital literacy & e-gov services, Digital Literacy Centers at 2 villages of Varanasi, Women empowerment & skill development center in 1 village of Delhi , Telemedicine setup at 2 railway dispensaries in MP, Provision of IT infrastructure including desktops, printers, scanners, projectors, etc. at 3 Sanskrit Colleges being operated by Badrinath & Kedarnath Trust and many more. One of the RailTel's CSR initiatives namely 'Akansha Super 30' related to providing of coaching to the talented students from economically weaker section of the society. The students of this center come from poor socio economic background

belonging to different occupation ranging from labourer to farmer.

Conclusion

RailTel ***"pioneer in Indian Digital revolution"*** facilitating Railways expeditiously in modernizing their operation and safety systems. RailTel is providing state of the art communication infrastructure along with planning, building, developing, operating and maintaining a nationwide broadband telecom and multimedia network to supplement national telecom infrastructure to spur growth of telecom, broadband and IT enabled value added services in all parts of country specially rural, remote and backward areas. RailTel is generating revenue through commercial exploitation of its telecom network and in turn contributing to the economic growth of nation by creating a knowledge economy.

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