

Conclusion:

Operation of railway services has progressed a lot since the advent of the first locomotive. Railways is the most preferred mode of transport for more than 70% of the population. With changing times, railway operations and services have developed with better orientation towards customers. Management of railways, ticketing systems and availability of services are now developed to be stronger catering to the need of larger customers.

The need of railways has become impervious with growing population and especially in a country such as India, expansion as well as improvement of railways is a necessity. In Indian context, the existent railway infrastructure seems to be lackadaisical with number of inadequacies in service and satisfaction. Even though technological advancements are integrated in the system, ICT (Information and Communications Technology) is to be utilized more pervasively.

Information and communication technology has had a central role in railways right from its inception. Since the beginning, telephone and communication lines were carried along railway routes, as communication was crucial in railway operations. Even in modern times, improvement of railway services and operations is difficult without integration of strong ICT systems. Railway systems have improved in various fronts with extensive usage of ICT. Some of the most important advancements are in fields of Operations, Customer Services and access to railway services.

Utilization of high capacity digital technology with comprehensive set of functionalities has now become the heart of modern rail operations. Advancement of ICT has developed the overall operations within railway management. Railway

systems based on IP and MPLS Networks enables delivery of diverse modes of communication and traffic. Such system facilitates developed mode of operations within the system for better performance of railway traffic. The system can be integrated to improve various aspects such as site access control, Video surveillance, remote access monitoring and equipment telemetry and so on. Corporate LAN networks integrated with public address systems can be created using advanced ICT. RFID based freight consignment tracking can be implemented improving railway freight services.

One of the most important contributions of ICT in railways is in the domain of customer service and access to information. Railway systems are integrated with efficient and real-time frontend ICT platforms for improvised customer services. Modern railway systems have to deal with massive commuters and an increasing transportation of goods. Moreover, the need of better services has increased with the requirement of more pervasive railway services. Real time information system is a crucial aspect of customer service. Passenger inquiry about availability of trains, arrival and departure schedules at stations and status of booked tickets are some of the aspects that serves as parameters of customer satisfaction of railway services. In fact, they are the most important facets for access to railway service. For a huge and complicated railway network system such as India, efficient use of ICT can certainly make a difference. In present times, railway information systems are being integrated to mobile services. Adding to this, many web applications are being developed through which railway services can be accessed via mobile devices.

However, much is still desired and left to be done when it comes to information dissemination. Railways sit on huge reams of information that is either unorganized or

not looked into at all. Much of the information is generated and consumed at local or station level and is still prone to manual errors as often seen in the ETA (Expected Time of Arrival) predictions. There is no single source of information and consumers often have to hunt for the information they are looking for. The use of ICT is imperative in railways. Digital technology can make railway services more secure and safe. Customer oriented features providing a range of services can be developed to make access of railways simplified and comfortable. ICT plays a vital role in train operation. It provides various kinds of solution and services to the various problems prevailing in many fields. Indian Railways has to exploit the potential of ICT to its fullest extent. This will smoothen the train operation further and improve the passenger services.