

# Portnet: An e-Governance Project for Rural Masses

**Ajith Brahmanandan**

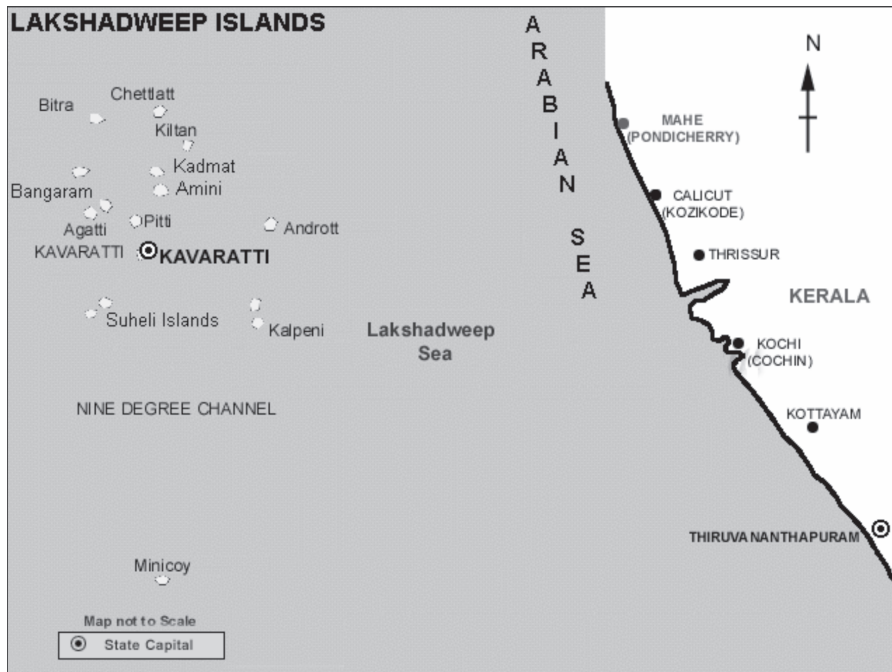
Technical Director & SIO, NIC, Lakshadweep

## ABSTRACT

The project envisages the implementation of 'anywhere to anywhere' ship ticket advance reservation system from anywhere for passengers and cargo ships of the Lakshadweep Administration. The project also aims at improving transparency and bringing accountability to the ticketing process and providing citizen services to the rural masses living in these remote and geographically isolated islands. The connectivity to the islands is achieved through state-of-the-art VSAT network as an extension of NICNET. The software was designed and developed using Microsoft.NET technologies. Ship schedules, ticket availability and ticket status are available through the internet, and a ship ticket availability display system is also introduced in all locations to ensure transparency of the system. As every citizen of Lakshadweep has to depend on the ship service for one or the other purpose, this system makes their life easier. The project covered the entire territory including an island having a population of around 300 people.

## Introduction

The Union Territory of Lakshadweep is a group of 36 islands of which 11 are inhabited islands. They are spread over the Arabian Sea at a distance of 150 to 420 km away from the mainland, and are geographically isolated (Fig. 1). The distance between the islands is about 65 to 400 km. The geographic isolation of the islands makes each island virtually a territory by itself requiring all the basic amenities on the island itself. However, facilities like hospitals, educational institutions, employment exchanges, regional transport offices, etc., are only available either at the capital island, Kavaratti, or on the mainland. So, each and every person in the islands has to depend on the ship service for one or the other reason. In short, the ship service is the lifeline of the Lakshadweep Islands, and the lives of these people depend on the schedule of a ship or the availability of a ticket on a ship.



**Fig. 1** *The Lakshwadweep Islands*

## Scope of the Project

The scope of this project is to facilitate ship ticket advance reservation (G2C) from anywhere to anywhere on any ship in Lakshadweep from any of the authorised ship ticket counters. The project also aims to provide transparency and accountability in the ship ticketing process. The ship service being the lifeline of the people of Lakshadweep, the project aims to improve the life of the people by providing a facility around which they can plan their programmes.

## Technology and Design

A first-hand account of the information and communication technology facilities available in the islands is considered. In the absence of any type of data communication facilities, reliable internet facilities, leased-line facilities or ISDN facilities, the project used a VSAT network as an extension of NICNET. A KU-Band VSAT network connecting all the port offices of Lakshadweep was established to cover all the islands including the island with a population of around 300 people.

The selection of a suitable technology for the data base management and development was the next crucial decision. The management of the system has to be from one place and monitoring from another. The citizens should get up-to-date information about the ship schedules, availability and ticket status. The data base should also be a centralised one, highly secured, the development should be fast and future upgrading should be easier.

A web-enabled system was developed with SQL Server 2000 as the data base and was developed using ASP.NET. The data base and applications are hosted in the highly secured NIC SAN server at New Delhi.

## Technicalities Involved

- Microsoft ASP.NET, IIS, MS SQL Server 2000
- As the islands where the tickets are issued are remote and geographically isolated without any technical manpower, it is essential to have a system with minimum technical expertise required at the user end.
- As the ship schedules, issue timing, EQ release, etc., are managed from one location, a system with a centralised management is required.
- Faster development features like a rich set of web form controls and a set of validation controls of ASP.NET.
- Inter-operability features of Microsoft products (Windows/IIS/SQL Server).
- Previous experience in using .NET, SQL Server 2000 by team members.

## Implementation

Necessary amendments were made in the ship ticketing and booking system.

- In the first phase, tickets for ships starting from Kochi and Kozhikode were issued from Kochi, Kozhikode and Kavaratti, where internet facilities were available.
- The key factor was the availability of reliable Internet access at all the port offices in the remote islands and training for all port officials in remote islands.
- In the second phase, 'anywhere to anywhere ship ticketing' was introduced by providing internet access to all the port offices through VSAT network.
- The project is rolled out and is in operation since 26 January 2006. Tickets for all the ships can be issued from all the port offices of the Lakshadweep Administration.

- The facility will be extended to the proposed 33 Community Information Centres (CIC) and in the city centre at Ernakulam for the issue of tickets.
- The system is proposed to be linked to the tourist booking and e-permit system and resident ID card system, which are under development

The project provides advance ship ticket reservation system and freight booking for all the ships plying to Lakshadweep. The software is developed using .NET technologies and uses SQL Server 2000 as the relational data base. The system is introduced in all the 12 ticket counters of the Lakshadweep Administration. The port office at Kochi can monitor the consolidated reports at any time. Tickets can be booked from anywhere to anywhere 30 days in advance from any of the 13 ticket counters. Freight tickets can also be booked through this system.

Ship schedules, ship ticket availability and ticket status are also provided to the public through the web site.

### Learning from the project

- The use of right technology at the right place can change the lifestyle of the people in rural and remote areas as well.
- Web technologies are most suited to territories like Lakshadweep, where there are geographically isolated islands and management only at one location
- While developing in .NET care should be taken that sufficient bandwidth is available to the users of the system

### Benefits Accrued

This system has revolutionised the style of living of the islanders. Now they are planning their journeys in advance and purchasing tickets in advance, which had made their lives easier. Earlier their journeys were uncertain. The people of Lakshadweep have benefited greatly due to the implementation of the project. A short list of the major benefits follows.

- Citizens can reserve/cancel ship tickets from anywhere to anywhere in any ship in advance.
- The entire rural population is benefited as the ship service is the life-line of Lakshadweep.
- Ship ticketing process have become transparent.
- All the ship tickets are issued through this system. There is no manual issue of tickets.

- The citizen is empowered as he or she gets the availability status of the tickets through the availability display system and through the internet.
- Centralised management of the ship ticketing process – release of ship schedules, release of EQ tickets, monitoring of the sales of tickets and centralised accounting and monitoring.
- The age-old system of sending ship programmes/change in schedules/EQ release, etc., by FAX/wireless have been stopped as everything is available online instantly and is managed centrally.
- Any ticket (passenger/freight) for any ship from anywhere to anywhere is available through a single window.
- The awareness of the benefits of information technology has reached the people living in these remote and isolated islands.
- Each and every citizen in the islands is aware that ‘there is magic box’ in the port office that is making their life easier.

## Replicability of the project

- The project can easily be replicated in any location where similar ship ticketing system is required.
- It can also be replicated for any other ticketing application with minor modifications.
- The system is being replicated with minor modification for the tourist booking of various package tours in Lakshadweep.

## Current Status of the Project

All the passenger tickets for all the ships are issued through this system. If one wants to travel by ship in Lakshadweep, one has to purchase tickets through system. All the freight tickets since that date are also issued through this system.

## Future Development Plan

The project is being enhanced for booking tickets through credit card/pre-paid card and also for e-ticketing. It is also proposed to issue tickets through the CIC and the proposed Common Service Centres (CSC). The Lakshadweep islands being a restricted area, only bona fide residents and valid permit holders can travel to these islands. To ensure that tickets are issued only to the bona fide passengers, a data base of such residents and permit holders is being prepared and the same will be integrated into the ship

ticketing system. Before the issue of the ticket, the system verifies the authenticity of the user and then issues the ticket.

## Conclusion

The Portnet project enables the entire population of Lakshadweep who depend on the ship service for their everyday life to travel with ease. All the passenger ship tickets and freight tickets for ship journey in Lakshadweep are issued through this system. This is the best citizen service possible to the rural population in the remote and geographically isolated islands with the use of information and communication technology tools.

The project not only achieved its objectives but also convinced the authorities about the power of ICT tools. It also made the rural population aware that information technology tools ('a magic box in the port office' to the general public) could change their lives.