Kumejima Town, Okinawa Prefecture

Case Study

Accelerating community revitalization through Wi-Fi networks
Providing a wealth of services to both residents and tourists

Overview

Kumejima is an island town located on Kume Island in Okinawa Prefecture, about 100km west of the main island of Okinawa in the East China Sea. There are a number of excellent scenic spots and historical cultural assets on the island, which itself has been designated a prefectural natural park. While tourism and agriculture have long been the linchpins of its industry, in recent years Kumejima Town has drawn attention from around the world for its success with ocean thermal energy conversion (a technology that generates electricity with the aid of deep ocean water) and new businesses spun off from the technology. However, Kumejima Town also faces administrative issues. “Although our birth rate is the second highest in the nation, many people leave the island after graduating high school, meaning that our population is slowly declining,” says Haruo Ota, Mayor of Kumejima Town. “Accordingly, we face the problem of stagnation in our primary industries.”

Challenges

In order to revitalize the community, Kumejima Town set a goal of restoring its residential population to 10,000 from the current level of 8,000. To achieve this goal, it embarked on five projects that are advanced even at the global level: 1) Use of 100% renewable energy for the island’s electrical power; 2) Preparation of an ICT platform based on island-wide Wi-Fi networks and application services; 3) Demonstration testing of a traffic control system for driverless cars, using quasi-zenith satellite signals; 4) Construction of a cold chain based on cold storage containers and plant factories using deep-sea water; and 5) Creation of an advanced ICT education model for remote islands.

The aim of the ICT platform project is to create an environment enabling the use of IT devices at any place and any time, creating the foundation for a variety of projects to combat depopulation and to revitalize the community. The specific solution adopted, based on a proposal from NEC, deployed public Wi-Fi networks on an island-wide scale for use by residents and tourists. To make effective use of the Wi-Fi, the town developed application services for tourists using the AR (augmented reality) technology that NEC has implemented for other local governments, as well as services to help local residents produce crops for local consumption, watch-over services for the elderly, and services to improve safety and security for residents.

Kumejima Town’s initiative was selected as a demonstration project for the Ministry of Internal Affairs and Communications’ “ICT City Development Promotion Project,” making it eligible for assistance from the national government.

The Wi-Fi networks and the systems were built over only four months from September 2013. In parallel with this, the operational systems for each application were thoroughly...
considered and built. In December that year, the town began providing the public Wi-Fi and the application services.

"Although we had a huge number of things to do on a tight schedule, with NEC's full-scale cooperation and detailed support, we were able to conduct the project on schedule," recalls Yukio Nakamura, Director of the Planning Section at Kumejima Town Office.

Solution

The public Wi-Fi environment, with access points in 23 locations including public facilities, schools, and private lodging facilities, has enabled ubiquitous connection to the Internet for outdoor users around the island. Indoor antennas installed within Kumejima Airport and the ferry terminal enable Wi-Fi usage inside those facilities. Moreover, the town created separate systems to take into account the differing usage of public Wi-Fi services by residents and by tourists. The system for residents, emphasizing high-level security, employs access authentication based on IDs and passwords issued to registered users. The system for tourists, placing weight on convenience, maintains a secure environment while offering freedom of use through simple sign-up procedures. Four applications were launched along with the public Wi-Fi service.

1. Kume Island Tourism Navigator

Based on NEC's UNIVERGE AR Solution, this is a smartphone app aimed at tourists. Among other features, it uses AR technology to display "AirTag" information on tourist spots and restaurants, and lets users collect stamps at spots around the island.

2. "Local Production for Local Consumption" Economic Cycle Service

This system for residents performs online matching of information on foodstuffs required by hotels and restaurants with information on vegetables not put into normal distribution by farmers (clearance sales and bumper crops).

3. Support Service for the Elderly and Persons Requiring Assistance

The town provided elderly residents with tablet devices for simple touch-based entry of daily health status, as well as video calls with Town Office staff and public health nurses.

4. Disaster Response (Safety and Security) Service

This system broadcasts Disaster-Response Mail messages in the event of typhoons, earthquakes, or other disasters. Recipients respond with information confirming their safety, keeping administrators up to date on the status of local residents.

Image of Kumejima Town as an “ICT City”

Kumejima Town, Okinawa Prefecture

disaster-response information, the system’s mail distribution menu includes local government information, notifications from the town, and information for elementary and junior high school students and parent-teacher association (PTA) members.

Results

Usage of the public Wi-Fi service is holding steady at nearly 10,000 connections per month by residents and tourists combined. The convenience of freely usable Wi-Fi services in Kumejima Town has also earned the praise of visitors from other prefectures and from overseas, who visit to observe the ocean thermal energy conversion and deep-sea water facilities. Downloads of the Kume Island Tourism Navigator app have exceeded 1,800 as of November 2014, and are showing steady growth. Kazufumi Kochi, Chief of the Planning Section, says, “As tourism guidebooks on Okinawa don’t carry much information on Kume Island, we believe the app is useful as a local medium for promoting the island.” The applications for residents, too, are gradually proving effective as their use increases.

The “Local Production for Local Consumption” Economic Cycle Service currently targets only elderly residents engaged in field cultivation and home gardening. Vegetables that once had been thrown away now create income, motivating and delighting the elderly producers. The Support Service for the Elderly and Persons Requiring Assistance has brought new benefits to the lifestyles of users, who enjoy entering their health status as a part of their daily routine.

About

While the applications for residents have been well received by users, issues have become apparent with some of the services. As many of the services are aimed at the elderly, users’ self-perception of discomfort with IT devices has proven an obstacle to expanded use. “While we believe that we’ve achieved the ease of operation that we’d hoped for, actual users aren’t becoming accustomed to the system so readily,” says Mr. Nakamura. “We think it’s important to take action to further heighten users’ proficiency and recognition, as well as pursue ease of use.”

The Disaster Response (Safety and Security) Service has also not seen strong adoption by residents, as it is perceived as a system for use only in emergencies. To create more opportunities for use, Kumejima Town plans to enhance information distribution via the service in normal times as well.

“We’ve built an island-wide Wi-Fi networks for connecting to the Internet at any place and any time, have provided services for residents to aid both daily living and the local economy, and have provided information tools to let tourists better enjoy Kumejima Town,” says Mr. Ota. “We view these as very meaningful initiatives that we’ve enacted ahead of other regions. Moving forward, we plan to further enhance the lineup, increase the benefits for residents, and connect this initiative to stronger revitalization of the region.” The town holds high expectations for the continued support of NEC as they work toward expanding functionality and services in the future.

This solution is available only in Japan