RoyalCaribbean ®
INTERNATIONAL

Cruise Line Improves Business Insight and Employee Efficiency with Intelligent System

Overview
Country or Region: United States
Industry: Hospitality

Customer Profile
Royal Caribbean International is the second-largest cruise company in the world with 21 ships that sail to more than 270 destinations. The cruise line also operates land tours in multiple countries.

Business Situation
Royal Caribbean sought to cut costs, increase revenue, and improve workflow with a better point-of-service (POS) system and by automating checklists for food temperature inspection.

Solution
Royal Caribbean deployed handheld devices to monitor food temperatures and an integrated POS solution based on Windows Embedded, Microsoft SQL Server and Windows Server.

Benefits
- Integrates data from POS, tablets, signage, TV, photo gallery, and ticketing systems
- Automates alerts for cooler malfunction
- Reduces time to complete HACCP checklists and generate temperature compliance reports
- Cuts temperature check times by 60%

Agilysys

par ®

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>
> *Bill Martin, Vice President and Chief Information Officer, Royal Caribbean Cruises, Ltd.*

Royal Caribbean International wanted to gain better insight into customer behavior and enhance workflow on its innovative new cruise ships. To improve operations, Royal Caribbean deployed a solution from Agilysys and ParTech (PAR) that connects Windows Embedded devices including 325 point-of-service (POS) terminals, 50 tablets, and 300 digital signs with backend servers running Microsoft SQL Server and Windows Server. The intelligent system shares data with show-ticketing systems, photo galleries, and in-room entertainment to give new insight into spending habits and enable more-effective selling strategies while cutting operating costs with digital signatures and electronic receipts. Connecting 35 handheld devices with existing IT infrastructure and food storage equipment has also improved workflow throughout the ships, including reducing food-inspection time from five to two hours. Finally, the solution has enhanced the guest experience by seamlessly sharing data among multiple devices and venues to provide ready access to photos as well as availability in restaurants, spas and shows.

"The Windows powered technology on board ships just seems to complement the whole experience... From the photo gallery to the digital signage to the point-of-sale solutions, everything works together seamlessly."

Bill Martin, Vice President and Chief Information Officer, Royal Caribbean Cruises Ltd

Royal Caribbean's *Oasis of the Seas*

Situation

Royal Caribbean International is a global cruise brand with 21 ships, and four under construction, sailing to 270 worldwide destinations. It is part of Royal Caribbean Cruises Ltd., which operates multiple brands and a combined total of 41 ships. The Royal Caribbean International line includes the innovative Oasis-class ships, with amenities such as amphitheaters, spas, and seven distinct environments or "neighborhoods" for guests to enjoy.

Royal Caribbean introduced its two Oasis-class ships, Oasis of the Seas in 2009 and Allure of the Seas in 2010. In addition to offering new amenities, the cruise line planned to improve the systems that supported customer service. For example, Royal Caribbean sought a more connected system than the point-of-service (POS) solutions from IBM that it was using on other vessels. The company wanted to use an intelligent system where POS devices could do more than sell products and services—it also wanted to collect

information that it could use to enhance them.

Improving workflow for employees was another goal, but the size of the ships presented numerous challenges. The Oasis-class ships are the largest cruise ships in the world, with 16 passenger decks and more than 2,700 state rooms. "We have more than 2,300 employees working in many different areas on board ships," says Jason Miller, Technology Analyst at Royal Caribbean Cruises Ltd. "We wanted a solution that would cut down on the time it took them to find information."

For example, before starting their shifts, crew members needed to go to a centralized location to sign in. Likewise, maintenance workers had to go to an office to pick up a work order before starting a project. Since it could take 15 minutes just to walk from crew quarters to a job site, the company wanted to help employees save time by providing the information they needed at their workstations.

The company also wanted to speed passenger payment transactions. One of its initiatives included replacing paper with digital receipts, which Royal Caribbean expected would cut costs as well as improve customer service. In addition to the material cost of paper, manually reconciling paper receipts with electronic records of transactions was an expensive, time-consuming process. As a result, Royal Caribbean would often write off smaller charges on disputed bills.

So before launching its new ships, the cruise line turned to Agilysys, an IT solutions provider for the retail and hospitality industries. Royal Caribbean wanted Agilysys to help design a solution that would improve workflow and customer service. Agilysys had helped the cruise line

PAR EverServ 6000 POS terminal

implement POS systems on other ships, and Royal Caribbean wanted to take advantage of its expertise for the current project.

The team targeted multiple areas for improvement, including POS and food-service areas. On the cruise line's other vessels, monitoring food safety was a labor-intensive process. The task would be especially challenging on the larger Oasis-class ships, which include 11 galleys spread across four decks. Furthermore, the company needed to comply with United States Public Health Service Act guidelines for food safety. The act requires cruise ships to implement a Hazard Analysis and Critical Control Points (HACCP) plan, which is a systematic approach to preventing food-borne illness.

Working with HACCP checklists, inspection teams carrying clipboards and thermometers would circulate through dozens of coolers and service areas, manually testing and recording the temperature of each food item. Royal Caribbean and Agilysys estimated that it would take more than five hours to complete a full round of inspections. "On an Oasis-class ship with hundreds of locations to check, we realized that a team of employees would have time for nothing but inspections during a shift," says Miller. "We wanted to find a solution that would reduce their workload so that they could do other things."

Royal Caribbean looked for an intelligent-system solution that could streamline workflow and optimize service for passengers.

Solution

With help from Agilysys, Royal Caribbean decided to implement a solution that includes POS terminals and temperature-monitoring devices from PAR, a supplier of solutions to the hospitality and retail industries worldwide. The devices would be part of an intelligent system powered by the Windows Embedded operating system. "Microsoft has been a good partner for us," says Jim Dennedy, President and Chief Executive Officer of Agilysys. "The level of support we get is critical to the stability of the applications we deploy, and it's one of the main reasons we continue to base our solutions on Microsoft technology."

In 2009, Royal Caribbean deployed approximately 325 PAR EverServ® 6000 POS terminals and 50 tablets on Oasis of the Seas. The terminals and tablets, which run Agilysys InfoGenesis™ POS software on Windows Embedded POSReady, handle more than financial transactions. They also collect data that the company uses to improve its services and selling strategies. The information, which includes data on spending patterns and sales promotions, is stored on server computers that run Microsoft SQL Server data management software on the Windows Server operating system. Then, the data is aggregated and analyzed onshore to help make business decisions.

The POS solution shares data with multiple devices and systems, including digital signage, show-ticketing systems, photo galleries, and in-room entertainment systems. For example, Royal Caribbean deployed more than 300 digital signs running the Windows operating system on each ship. Pulling real-time data from the POS solution, the signs display information such as the number of guests in a particular restaurant. If the venue is too crowded, passengers can go to a restaurant with more room.

The photo gallery is an example of another solution that saves time. Instead of posting

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> *Jason Miller, Technology Analyst Royal Caribbean Cruises Ltd.*

photos on a digital wall for passengers to search through, the software saves the images to folders maintained on a Windows Server file server.

To eliminate paper receipts, Royal Caribbean implemented DataMagine™, a document-management solution from Agilysys that scans, stores, and retrieves documents and images. DataMagine connects with POS terminals to collect digital signatures and store electronic receipts. The solution also automates processes for waivers and releases that passengers need to sign before participating in potentially risky activities. In addition to reducing the time passengers spend in line, the solution helps the company resolve charge disputes faster and more affordably.

Employees in all areas of the ship have been able to improve their workflow. For example, restaurant staff can sign in to their shifts directly from POS terminals. And instead of going to an office, maintenance technicians use handheld devices powered by the Windows Embedded Handheld operating system to get work orders electronically from anywhere on the ship.

Royal Caribbean has seen some of its biggest efficiency gains from the PAR EverServ SureCheck intelligent checklist for food-safety solution. To monitor food temperature, the company deployed PAR EverServ® SureCheck handheld devices powered by Windows Embedded Handheld. The solution also includes a data warehouse based on SQL Server and Internet Information Services Server.

Royal Caribbean delivers inspection tasks and HACCP checklists to the handheld devices through web-based software. Then, employees use the devices' built-in RFID sensor to read tags installed in coolers.

Within seconds, the device downloads temperature records collected during the previous visit and compares them to the current reading. The device immediately alerts the user if the cooler is non-compliant and suggests corrective actions to resolve the problem. Then it sends a message to the facility maintenance team to check the cooler, and the employee moves on to inspect the next station.

Royal Caribbean also uses the integrated temperature probe on the devices to monitor food temperatures on buffet lines and other open areas. The automated processes replace digital kitchen thermometers and paper logs. Instead of manually transferring records from logs to spreadsheet software, inspectors can immediately run reports against the data collected by the EverServ SureCheck solution.

Royal Caribbean continues to improve shipboard operations. Since deploying the PAR solutions on its Oasis-class ships, the cruise line has installed new PAR POS terminals on five smaller vessels. It is also considering implementing the PAR EverServ SureCheck solution on more ships in the fleet.

And to ensure continuous availability of archived documents, Agilysys is currently working with Microsoft to move the DataMagine solution from its on-site Windows environment to the cloud on the Windows Azure platform.

Benefits

Royal Caribbean implemented a solution from Agilysys, PAR, and Microsoft that includes Windows Embedded–powered POS and inspection devices. The intelligent system connects diverse devices and data sources to improve business decisions, cut cost, and improve workflow. The solution

PAR EverServ SureCheck
handheld device

ultimately enhances the on-board experience for passengers by facilitating data flow across platforms and devices.

Improves Business Insight
 By connecting a back-end system that stores and analyzes data with sales and monitoring devices, the company is tapping its existing resources to create new business intelligence. The cruise line can gather information from multiple connected devices and systems, including POS terminals, ticketing systems, and in-room amenities. "The more information we can collect about our guests, the more we can customize our products for them," says Bill Martin, Vice President and Chief Information Officer at Royal Caribbean Cruises Ltd. "With a PAR and Agilysys system based on Windows Embedded, we can capture data in numerous ways, and that's incredibly enabling information in the hospitality industry. The guests love it because they know we're catering to them, and we like it because we can make more money."

Cuts Operating Costs
Royal Caribbean has significantly cut operating expenses with its new technology environment. The company has realized significant savings by automating processes and improving the way it handles data. "With a Windows Embedded powered solution from PAR and Agilysys that generates electronic receipts, we can quickly retrieve payment records and no longer write off disputed charges," says Miller.

Improves Workflow
Connecting data and devices is also improving workflow. Before, Royal Caribbean estimated that it would take inspection teams nearly an entire shift to complete HACCP inspections. Now, they can automate and streamline processes to

reclaim their workday for other projects. Miller says, "With an automated solution that includes PAR SureCheck devices running Windows Embedded Handheld, we reduced inspection times from five to two hours."

Crew members throughout the ship benefit from enhanced communications and efficiency "In the past, it could take more than 30 minutes just for technicians to pick up a new work order and return to the site," says Miller. "But with their Windows Embedded Handheld powered devices, they can quickly retrieve a work order, finish the job, and notify people that the project is complete."

Enhances Hospitality Experience
Most importantly, the intelligent system has improved the on-board experience for Royal Caribbean customers. "The Windows powered technology on board ships just seems to complement the whole experience," says Martin. "When you provide information in one place, the data is shared throughout the system. From the photo gallery to the digital signage to the point-of-sale solutions, everything works together seamlessly."

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