



RUSSIA

p. 973.743.1277
 f. 973.743.1278
 e. info@surroundtech.com
 w. www.surroundtech.com

650 Bloomfield Ave, Suite 102
 Bloomfield, NJ 07003



In Brief

- Seaboard marine needed to replace its homegrown IBM i system to more effectively run its business and communicate with its personnel
- Lack of advance planning abilities was impacting the company
- The goal of Horizons was simple: drive operational efficiency by enabling dispatchers to make more informed decisions
- More than 300 green screens were reused in the dispatch project without any changes to the backend programs
- The real benefit can be found in the estimated 15 to 20% increased overall operational capacity

Seaboard Marine Tightens Its Operations with Modernized Dispatching System

A new driver dispatching system is paying big dividends in the operations of Seaboard Marine, a major shipping company that operates out of the Port of Miami. The company was considering replacing its homegrown IBM i system to get the functionality it required. Instead, it built a new .NET-based application to modernize the existing IBM i system that allows dispatchers to coordinate more effectively with drivers. Additionally, GPS-enabled tablets carried by the drivers keep them in constant contact with dispatchers.

Seaboard Marine is a Miami-based shipping company that moves imports and exports between the United States and trading partners in Central America, South America, and the Caribbean. The subsidiary of \$5.5-billion Seaboard Corp. operates more than 40 vessels in the region, which serve 35 ports in 25 countries. In Miami, the company works with more than a 100 drivers who ferry goods back and forth between customers in the South Florida region and the Port of Miami.

Seaboard has established itself in the regional shipping business by adopting a business model built on speed. Fast customer response is critical for Seaboard because of the short shipping distances between ports. Ships are only in port for a few hours at a time, which means imported containers need to be offloaded and reloaded quickly.

Custom Delivery

Like many IBM i shops, Seaboard had mixed feelings about the server (previously known as AS/400 and iSeries), upon which it runs and its homegrown ERP system, called SOS, which is composed of 13-million lines of RPG code generated from CA 2E (formerly Synon/2E) development environment.

"The IBM i system works to our advantage because we developed it ourselves," says Mercy Longa-Porro, the company's Vice President of Information Systems.

For more info, contact:
 Lee Paul
 Phone: +1 (239) 405-8427
 Email: info@surroundtech.com



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“The dispatch department ... suffered the most under inflexibility of the IBM i server’s green screen interfaces.”

"We have the source code, so my team can adapt and make modifications as needed. This has been a clear competitive advantage over time. However, it's become impractical for us to continue to enhance that system because technology is moving faster than green screen functionality. The dispatch department, in particular, has suffered the most under the inflexibility of the IBM i server's green screen interfaces. Dispatch is a critical component of Seaboard's Miami operations, where hundreds of containers are moved daily. Dispatchers were struggling to handle the work in an efficient manner.

Part of the inefficiency stems from the nature of Seaboard's work: Only 20 percent of the container moves that Seaboard's drivers do on any given day can be planned in advance, meaning Seaboard's dispatchers are working on the fly to service the other 80 percent as they occur. Being able to react quickly to changes is a critical factor to Seaboard's success.

With over 100 drivers working on any given day, Seaboard's five dispatchers often struggled to navigate through the various IBM i green screens to complete a dispatch order and get the information out to drivers. Dispatchers would segment the work into job types, but there was no overview of all activities. Compounding the system issue was the fact that all dispatching information was communicated manually, either by radio or phone, or by printing out dispatches to give to the drivers when they walked into the office.

This inefficient system was having a negative impact on Seaboard, its drivers, and its customers. The lack of visibility into the fleet's real-time location would often lead to two or more drivers being in the same location, when a single driver could have handled the work. Dispatchers could only plan one move at a time, leading to wasted time, wasted fuel, and wasted opportunities.

Technological Solutions

If there was a caveat to Seaboard's situation, it was that it had lots of room for improving operations by delivering an element of logistical foresight. Planning more than one move in advance would go very far tightening the slack in the system. The only question was how to get there.



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The route was not directly obvious. Years earlier, Seaboard's executive management had GPS systems installed in the trucks, providing visibility into their whereabouts. But the GPS data wasn't integrated into SOS, which limited its usefulness.

What Seaboard really needed was a way to connect the data and logic in its dispatching system with the location and other data coming from the trucks. The dispatching system maintained all the data and business rules that made the work flow. Without integration to this back office system, the GPS data is simply not that valuable.



To get this level of integration, Seaboard considered replacing the IBM i applications and implementing a pre-packaged transportation management system (TMS). However, the fact that prepackaged TMSs aren't designed to enable same-day service would mean that Seaboard would need to customize it extensively. On top of that cost, there is the inherent risk in embarking on a large project to migrate to a new ERP system.

The company may still retire the IBM i SOS applications, but its IT staff realized it didn't need to replace the old system to give its dispatchers new screens and new location-aware functionality. Application development manager Dave Seger had heard about a product called re:new that would allow him to build a composite application in Microsoft .NET that leveraged Seaboard's existing IBM i logic on the backend.

New 'Horizons' for Seaboard

The re:new solution, which was co-developed by application modernization software vendors Surround Technologies and looksoftware, utilizes pre-built application frameworks and software generation wizards to accelerate the development process and requires only basic Microsoft .NET programming skills. With minimal changes to their existing systems needed, low risk and little disruption to their business, Seaboard's IT department decided to give it a shot.





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Seaboard liked the improved look and feel that re:new could give the SOS dispatching system, and hired Surround Technologies to build a whole new .NET dispatching system based on it, which is called Horizons. Surround Technologies' Kent Pickard was the lead developer on the project, which began in early 2012 and made extensive use of the two products that make up re:new, Surround's Accelerator for .NET technology and looksoftware's newlook smartclient.

The goal of Horizons was simple: drive operational efficiency by enabling dispatchers to make more informed decisions and plan more than one move ahead at a time. Getting there, however, would require major additions to the SOS dispatching system functionality.

Horizons would accomplish the goal by making three major changes. First, it provided Seaboard with a new composite application that reused the IBM i assets, but presented the information through an intuitive and modern user experience. Secondly, Horizons would collect real-time GPS data and driver status information from a mobile app running on Android tablets. Thirdly, Horizons would introduce entirely new screens that blended location data with existing business processes, providing dispatchers with an entirely new way to look at their operations.

The development team used Accelerator to generate .NET code against the existing DB2 for i database, and populate pre-built screens that are similar to the familiar Microsoft Outlook." Accelerator gives us a good architecture out-of-the-box that took care of the underlying plumbing that's required of an enterprise application like this," Pickard says.

The use of Accelerator's frameworks and code generators allowed the team to spend more time working closely with Seaboard's IT department to hone the business specific functionality delivered with Horizons. "This allowed us to iteratively develop the application, using a short feedback loop," he said. "It also contributed to a high adoption rate by dispatchers once the application went live."



PROFESSIONAL
 CONSULTING SERVICES

Our Professional Services Team offers enterprise experience and established technology leadership to deliver cost-effective state-of-the-art solutions. We can mentor your team, coach your team, or do the entire project for you – and everything in between. In this case the integration of a system whose power was not fully utilized was roadmapped into the modernization strategy by the Surround Professional Consulting Services team to provide maximum benefits to the newly designed system.



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Going Graphical

New composite modules were developed for the most commonly used functions, such as viewing dispatch requests, assigning dispatches to drivers, and pulling up a previously assigned dispatch. In some cases, Horizons combines into one screen information that used to be spread across 20 green screens. In total, more than 300 green screens were reused in the dispatch project without any changes to the backend programs.

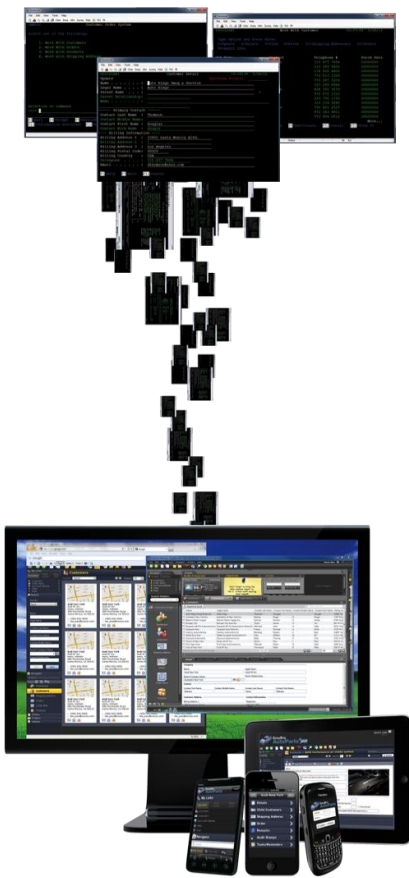
A new graphical grid provides an instant upgrade over previous ways of digesting information. Dispatchers can sort columns and filter query results, providing multiple, intuitive ways to quickly pull up critical pieces of data. Users can now sort incoming dispatch requests in any way, the most important of which are distance, day and time, by type, by priority, by equipment requirement, or by location. It looks and feels just like Outlook, not a cryptic mainframe.

The map-enabled screens in Horizons will see a lot of use at Seaboard. These screens utilize Google Maps overlaid with real-time GPS information from drivers, as well as information about the customers. Different icons tell the dispatchers about the needs of the customer (whether they need an empty or full container picked up or dropped off, etc.), and the location of the drivers. Clicking on a customer icon in the Google Maps grid opens another screen that gives a list of the drivers closest to that customer location, as well as their current job status.

By combining different pieces--GPS data, driver-status data from the mobile software running on tablets, Google Maps, Google Geocoding, SQL Server data, and IBM i data and business logic—Horizons is clearly more than the sum of its parts, and has made dispatchers' jobs much easier.

Real World Benefits

Dispatchers immediately took to the slick-looking new Horizons application when Seaboard started rolling them out in mid 2012. But the real benefit can be found in the 15 to 20% increased overall operational capacity.



Going Graphical:

20 green screens were able to be combined into 1 screen.



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The most significant example of this is each driver, on average, can now do one job per day more than before Horizons was in place. A part of this is due to the turnaround time of Seaboard's drivers at the port. Because drivers now get assignments through the tablets, they no longer need to exit their vehicles and walk into the dispatch office. This saves about 15 minutes for every visit. Each driver visits the port about four or more times a day, so the system has saved over an hour for each driver just at the port. With the new system in place, Seaboard dispatch and drivers have been setting new records for the number of jobs completed in one day.

“ ... the real benefit can be found in the 15 to 20% increased overall operational capacity ”



Success Is Easy to gauge when things are done right:

- Greater visibility into the drivers' locations and the types of equipment they're pulling also saves time.
- Rerouting drivers on the fly means fewer wasted hours on the road and less fuel burned
- Significant drop in the error rate associated with dispatching

Greater visibility into the drivers' locations and the types of equipment they're pulling also saves time. Rerouting drivers on the fly means fewer wasted hours on the road and less fuel burned. Such efficiency simply wasn't possible before. "You couldn't do that without actually seeing the location of the drivers," Seger says. "It would have required getting all the drivers on the radio, and trying to figure it out."

Seaboard has also seen a significant drop in the error rate associated with dispatching. New assignments are sent wirelessly to drivers' tablets, eliminating the need for dispatchers to verbally assign jobs and risking errors when communicating customer names, addresses, or directions. The use of Google Maps on the tablets provides a reliable way for driver's to get directions to unfamiliar accounts.

Overall, drivers have been very supportive of the new Horizons applications and the tablet interfaces. Most of the drivers are individual contractors, so the extra efficiency in routing means they can finish more jobs per day, and spend



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less money on fuel doing it. Customers also benefit because estimated arrival times from Seaboard are now more accurate. And, because drivers are continually updating their tablets with their current activity (i.e. arriving at customer site, leaving the port, etc.) customers can also get more detailed updates when they call dispatch.

“We're saving money by having more efficient dispatching. Now we can handle more jobs and provide better service with the same amount of dispatchers.”
- Longa-Porro, VP Information Systems

"It would be nice to plan for the entire day, but we know that's not possible," Seger says. "We need to be able to react to changes as efficiently as we can. Now we're not flying blind so much. If I can see what's out there, I have a better chance of dealing with the curveball that gets thrown to me later."

Longa-Porro sees the bottom-line benefits of Horizons. "We're saving money by having more efficient dispatching. Now we can handle more jobs and provide better service with the same amount of dispatchers. Also, we can see where the drivers are, so we can make sure the next job they get assigned is in the general vicinity of where they are, as opposed to driving longer distances because we didn't know who was where," she says.

"We're capturing data on a timelier basis, so therefore we can notify our customers a lot faster as to where their shipments are, and of course that translates to better customer service," she continues. "Surround Technologies has been a great partner to work with. At this point it's been a very good deal for us, and a very good start to our modernization initiative."

Press Contact:
Lee Paul
Phone: +1 (239) 405-8427
Email: info@surroundtech.com

See It In Action:
If you'd like to see this or any of our solutions in action contact us and we will be glad to setup a 1-on-1 demo.

Call: +1 (239) 405-8427 or
Email: sales@surroundtech.com



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Company and System Information

Seaboard Marine is an ocean transportation company that provides direct, regular service between the United States and the Caribbean Basin, Central and South America. Established in 1983, Seaboard Marine is a wholly-owned subsidiary of Seaboard Corporation. We have identified unique and strategic opportunities in more than twenty-five countries while adapting to constantly changing environments. With each office and location contributing steadily to our company's growth, Seaboard Marine is a trade leader in the Western Hemisphere.

From: www.SeaboardMarine.com



Surround Technologies Surround Technologies is a software innovation business with solutions and services to substantially accelerate the creation, modernization, delivery and maintenance of high-quality state-of-the-art software. Surround's Accelerator Development Solutions are the only rapid application development solutions with windows, web and mobile user experiences in an n-tier agile architecture with no limitations or proprietary lock-in. Whether modernizing legacy applications or creating new functionality, with Accelerator, you will deliver your software faster with better results and more functionality. Surround's Professional Services Team adds enterprise experience and established technology leadership to deliver state-of-the-art solutions to our clients.

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