



AUTOMATING AND OPTIMISING SHIP SUPPLIES LOGISTICS

Ent-Vision is a technology start-up that uses data, artificial intelligence, machine learning, natural language processing and geospatial solutions to automate process and optimise resources.

The Journey So Far

With a combined industry experience of over 50 years in technology, software development, regional marketing and business development, the two co-founders of Ent-Vision started their entrepreneurial journey in 1996. What began as a marketing services company soon evolved to become a business focused on improving data quality. Ent-Vision Smart Data was created in 2016 as an associate company of their original start-up to help large multinationals cleanse and standardise marketing databases. Through Smart Port Challenge (SPC) 2018, they saw an opportunity to address operational inefficiencies caused by data silos and poor data quality in the maritime and logistics industry. This led to the spin-off of Ent-Vision to focus on leveraging their Smart Data technologies and artificial intelligence to help enterprises automate operational process and optimise resource utilisation. The MPA grant that Ent-Vision was awarded enabled them to hire data analysts and AI engineers to fast-track their product development and embark on a pilot project with Winspec Logistics. They have since also been involved in a number of other programmes such as Infocomm Media Development Authority's (IMDA) Open Innovation Platform where they test-bedded a project with Teho Rope and are now moving forward for commercial deployment.

Innovation Opportunity

The sales process for ship supplies is largely manual with suppliers receiving Requests for Quotation (RFQ) from vessels in various formats through emails. In addition to being extremely labour intensive and prone to errors, this often results in loss of opportunities due to slow responses or inability to recommend suitable alternatives.

Equally challenging are issues such as high delivery costs and under-utilised delivery trucks due to silo order processing, inconsistent data format, unstructured dataset and errors from manual data entry. With the narrow port loading window, any ship arrival schedule changes will cause congestions, and it is extremely difficult to coordinate just-in-time delivery to fulfill order commitment.

As one of the busiest port in the world, there is an average of 1,000 vessels at Singapore Ports at any time, most needing ship supplies ranging from fresh produce to critical maintenance engine parts. Optimising ship supplies logistics will help Singapore maintain its status as one of the most efficient hubs.



Solution

Ent-Vision's Maritime Supplies Sales Automation solution is an Intelligent Process Automation (IPA) software that combines Robotic Process Automation (RPA) with Artificial Intelligence (AI) to make operational processes smarter. It automates the RFQ process by using Natural Language Processing to extract smart attributes based on pre-constructed data. This allows quotations to be automatically generated through auto recommendation of products based on highest ranking, availability or best alternatives, thereby improving the sales conversion rate. The customer's purchase history coupled with ship arrival data also provides insights that allow the supplier to predict when stock replenishment might be needed, and auto-generate a quotation to the customer for increased sales.

Ent-Vision's Integrated Maritime Supplies Distribution (iMSD) is a collaborative distribution platform that enables the Chandler community to share logistics resources. The platform is also interfaced with maritime data providers for a holistic view of port-related activities. Any vessel's arrival schedule change can be pushed to port delivery Logistic Service Providers (LSPs) for timely resources allocation. Pick-up and Drop-off status can be updated to ship captains, chandlers and port operators for efficient logistics management. By having better visibility of both upstream and downstream information, ship suppliers are able to optimise logistic assets, minimise delivery costs and reduce truck idle and waiting times.

Key Results

As part of the pilot project with Winspec Logistics, Ent-Vision was able to demonstrate significant impact on productivity improvement with their IPA and iMSD solutions by:

- Reducing manual data entry: Saving 5 hours per day (1,825 hours per year)
- Eliminating manual search for missing vessel arrival information: Saving 45 minutes per day (274 hours per year)
- Automatically notifying vessel arrival schedule changes to LSP and ship suppliers: Saving 6 hours per day (2,190 hours per year)
- Minimising idle truck waiting time at ports and road traffic: Saving 12 hours or \$300 per day (\$109,500 per year)



**4,289 man
hours saved
per year**



**\$109,500 in logistic
delivery costs saved
per year**

**Founded 2018,
Singapore**

KH Tan
Founder & CTO

Pamela Wu
Director & Co-founder



Smart Port Challenge is an excellent programme to encourage innovation and build strong maritime related start-ups without the need for them to have prior maritime experience. The PIER71 ecosystem provides post challenge continuity to foster and maintain a collaborative start-up community.

KH Tan
Founder & CTO

Looking Forward

Since Smart Port Challenge 2018, Ent-Vision has been focused on improving their maritime data sets and data profiling with wider products and services to provide predictive analysis and proactive actions. Going forward, Ent-Vision is planning on raising seed funding to support enhancement of their technical capability as well as expansion to international markets such as Indonesia, Malaysia, China and the rest of Asia.

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