

Embedding an innovation culture: the journey of Jurong Port



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Headquartered in Singapore, Jurong Port is a multi-purpose port operator that serves as Singapore's main breakbulk and bulk cargo gateway. Our port operating expertise includes the handling of general (breakbulk), bulk and containerised cargo, management of an offshore marine centre which serves as a one-stop dedicated facility for the retrofitting of offshore marine vessels, and operations of lighter terminals that provide vessel provisioning-at-anchor and resupply in Singaporean waters. Jurong Port is also involved in overseas joint ventures in China and Indonesia.

Jurong Port recognised that the key to the continued growth and performance of any port business is in having a strong culture of innovation within the organisation. While in the past, Jurong Port has been able to rely on pockets of innovation within the company, we wanted to introduce a more systematic approach towards managing innovation and sustainability in our port processes and have an organisation structure that encourages and embraces such a culture. The establishment of the Research & Innovation Centre at Jurong Port under the Strategic Planning Office is key to this development.

Our Innovation Journey

Embarking

In 2011, Jurong Port, together with other maritime partners in Singapore, launched the Green Port and Productivity Solutions (GPPS) Programme, which committed JP to contribute up to US\$4.2 million over the next five years towards funding any port technology research, development and test-bedding projects in the areas of green port technologies and productivity solutions.

At the same time, JP has successfully tapped external funding sources such as

the Maritime Innovation & Technology (MINT) Fund, intended to promote research and development, and the innovative use of technology in Singapore's maritime industry. The GPPS programme is led by the Maritime & Port Authority of Singapore. This was followed by the establishment of a Research and Innovation Centre (RIC) by Jurong Port to drive our Innovation Strategy. Within a short period of time, a charter for RIC was jointly developed with Accenture as our partner who advised us based on their cross-industry experience in introducing innovation in other leading companies. This enabled RIC to quickly build up a robust strategy and set of implementation plans that will deliver results quickly.

In the initial phase, RIC worked closely with management to identify and commit resources into several priority initiatives that will transform key business processes in (1) Bulk and Breakbulk Cargo Handling, (2) Gate Operations and (3) Customer Experience. RIC has now entered its second year of operations, and the priority initiatives have undergone an annual management review to re-establish their relevance according to the progress that has been made. Concurrently, the team has created internal publicity programmes to generate greater awareness across the company about the efforts being made in related maritime and other industries, as well as across different departments within the company, in order to reinforce a culture of innovation at Jurong Port by encouraging out-of-the-box thinking.

This two-prong approach is part of a systematic drive to ensure that innovation efforts can result in the delivery of a set of concrete programmes that are able to address the correct business and operational challenges, as well as create the correct mindset, without losing momentum. At

the same time, Jurong Port wanted a lean set-up with a young team in place in order for RIC to remain nimble, receptive and dynamic. Eventually, JP wants to evolve the innovation culture towards a "top down-bottom up" organisational culture where there is a keen sense of ownership to innovate, at all levels of the company.

Enabling structures

Jurong Port identified three fundamental areas where we wanted to see greater focus: (1) productivity, (2) customer value and (3) industry benchmarking of bulk and breakbulk handling. RIC's review of our organisational structure suggested that we had to establish several enablers in order to bring about more fundamental change. Some of the key enablers that were put in place included:

1. Establishing tie-ups with external research, maritime and logistics think-tanks, as well as other innovative ports in order to provide an "outside-in" perspective. Tap on national funding that is available for innovation and productivity programmes. By being the interface between the external parties with JP, RIC ensures that such tie-ups serve JP's strategic goals
2. Establishing a dedicated operations analysis team that is able to competently perform data-mining in-house, and combine the analysis with operational competencies in order to drive productivity initiatives in various facets of cargo handling operations, vessel and berthing management etc. This ensures that knowledge is built-up within the organisation and that productivity initiatives are driven closely by operational needs rather than innovation for innovation's sake
3. Establish cross-functional teams

to ensure that more complex innovative projects are managed and delivered with the correct skill sets and within schedule. Performance in these teams become part of the individual performance appraisal process. Structurally, project leaders, project sponsors reporting to steering committees ensure that leadership emphasis and consultation remains in place. RIC participates in these cross-functional teams in order to ensure that momentum is maintained and as a member of the teams, remains accountable for delivering results.

Engagement

With the right structures in place, RIC set about to create a series of employee engagement initiatives to change the employee experience about innovation in Jurong Port. Bi-monthly Innovation Lunch and learn sharing sessions are now a regular feature at Jurong port where external guest speakers share their experience with participants in their innovation journey, and how leading organisations have encouraged collaboration in different industries. Newsletters focusing on innovation also feature segments contributed by staff and customers on innovative thinking, examples and news from the maritime and port industry. At the same time, innovation events are organised to encourage participation and reward innovative behaviour through events such as personal and operational equipment customisation and design competitions. In the next phase of engagement, it is envisaged that some of these existing programmes will have to be expanded and evolve in several ways, of which two key developments needs to be addressed:

- Widen participation to include more stakeholders from the port user community, as there is scope for innovative collaboration across the value-chain
- Refresh the corporate experience and port environment so that it incorporates the expectations and interests of the millennials, who are entering the workforce and will be the future core of the port and maritime industry

Strategy, planning and management

Besides engagement programmes, RIC has undertaken and coordinated efforts towards several priority initiatives to see how port productivity and the customer experience can be improved. After identifying the productivity and process bottlenecks or inefficiencies, a set of initiatives were rolled-out and worked through with management during steering committee meetings

and leadership workshops. Some of the initiatives which are ongoing include:

- Development of a multi-year technology roadmap that maps out the various priority technologies that a leading breakbulk and bulk handling port must focus resources on over the next 5 years. Identify the “quick-win” technologies that require less customisation and commit teams to address and evaluate their suitability for rapid adoption, while less mature but interesting technologies will require the build-up of expertise and further engagement with specialised vendors. Some examples of possible port technologies in a breakbulk/bulk handling environment include specialised breakbulk handling equipment, automated guided vehicles (AGVs) and increased use of automation in bulk handling
- Collaboration with the maritime research think-tanks to conduct research that will provide deeper insight from data mining, modelling and simulation in terms of port traffic and commodity demand
- Benchmarks – review and incorporation of new or adjusted KPIs in the light of new insights derived from data-mining efforts
- Re-examination of the customer experience and touchpoints with the port given the myriad of cumulative changes in the breakbulk and bulk business, customer profile, market and port operations, and how it requires a whole-of-company response in terms of branding, commercial-orientation and marketing collaterals

Reflecting

Over a period of twelve months since the operationalisation of various initiatives, Jurong Port has successfully built up several in-house capabilities to sustain the drive towards greater innovation. At the same time, any innovation journey has to be watchful of pitfalls and challenges. The challenging outlook of the commodity cycle and global economy may test the resolve of innovators, if it increases reluctance to invest in new and innovative technologies and methods. Another pitfall is a tendency to look for innovative solutions where the inefficiencies may have resulted from more basic issues such as operator proficiency or performance. The third challenge is to manage the transitioning of an innovation from a curiosity towards widespread adoption. One perceived challenge – the lack of good ideas - which we imagined could have tripped us up, never did occur, much to our surprise.

About the author

Jek Suen heads the Strategic Planning Office which oversees the Research & Innovation Centre, Strategic Planning, and, Corporation Relations & Communications functions at Jurong Port. He has more than 10 years of experience in various roles such as port operations, business and corporate development in the industry, having started at Singapore-based Portek International in 2006. Before he joined the private sector, he served in the Singapore navy as captain of a naval vessel and was also part of the strategic planning & transformation office in the armed forces. He is a graduate of Oxford University with a degree in Philosophy, Politics & Economics (PPE) and holds a Masters from the London School of Economics (LSE).

About the organisation



Headquartered in Singapore, Jurong Port is a leading international multi-purpose port operator handling general, bulk and containerised cargo. Jurong Port began operations in 1965 as a general and bulk cargo port, serving the development needs of Singapore’s Jurong industrial estate. Today, its main gateway terminal in Singapore welcomes more than 15,000 vessels each year from both the region and internationally. The main terminal has 32 berths capable of serving the varied needs of the maritime industry. Its berths, with drafts ranging from 2.2 to 15.7 metres, can accommodate vessels of up to 150,000 deadweight tonnes. Within the terminal, there are 174,000 square metres of warehouse facilities and one of the largest common-user cement terminals in the world.

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