

Khalifa Port: innovation underpins Abu Dhabi's growth



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More than 60% of sea-borne trade is now containerised. To accommodate this rise in containerised shipping, vessels are getting bigger and wider, reflecting the need to keep pace with a rapidly growing industry. The United Arab Emirates finds itself increasingly at the geographical centre of 21st century shipping lanes with a tremendous opportunity to lead in a post-hydrocarbon economy as a global trade hub.

To realise this opportunity, Abu Dhabi Ports – master developer, manager and operator of the capital's bustling non-oil ports and industrial hubs – has prioritised innovation and the deployment of next-generation port technology. Innovation in technology ensures that Abu Dhabi's primary container port is equipped not just to serve the continued development of the Emirate, but of the UAE and the region as whole. We have ensured that our innovative systems will always keep pace with fast growing trade volumes.

The growth of a giant

Our progress since establishment in 2006 and the beginning of commercial operations at Khalifa Port in 2012 has been rapid. Through this continuous commitment to innovation, Abu Dhabi Ports has grown exponentially in trade volumes – with H1 of 2015 already posting significant growth in cargo volumes on H1, 2014. The Khalifa Port Container Terminal, which is operated by Abu Dhabi Terminals, has seen a 36.8% increase in volumes handled in the first half of this year. The number of TEU has increased year-on-year from 460,277 in H1 of 2014 to 629,941 in the same period in 2015. There was also a considerable increase in RoRo, general and bulk cargo volumes as well.

Technology

With customer needs constantly evolving, innovation has to keep up. Abu Dhabi Ports has invested significantly in technology and world-class infrastructure; innovations include new ship-to-shore quay cranes, gantry cranes and automatic stacking cranes for the Khalifa Port Container Terminal, and services that enhance customer experience such as the new dedicated customer service helpline, improved online services, and the one-stop-shop logistics hub. Our flagship, Khalifa Port, is the first semi-automated container port in the region. With market access to an estimated 4.5 billion people within four time zones, Khalifa Port accommodates some of the world's biggest containerships.

Technological innovation is driving the development of Maqta Gateway, a new purpose-built port community system launched in December, 2014. The system integrates all parties involved in Abu Dhabi's growing import and export trade business, and expedites trade by converting and implementing all port operations through a single point-of-access. Now celebrating the halfway mark of Stage-I implementation, Maqta Gateway represents an investment of US\$21.7 million over five years. Its full implementation will see Maqta Gateway significantly reduce processing times at ports.

Infrastructure

By investing in state-of-the-art infrastructure, we are also making Khalifa Port one of the best equipped ports in the world. Currently, nine super post-Panamax quay cranes, 42 automated stacking cranes, 28 straddle carriers and comprehensive ICT (Information and Communications Technology) services are part of the

container port's infrastructure, making it one of the most technologically advanced ports in the world.

Similarly, a quick truck turnaround time is very important for customers as it affects supply chain efficiency. Achieving a 12-minute turnaround time for trucks raises Khalifa Port's profile as an international maritime hub. A cutting-edge ICT system enables personnel to organise truck arrivals and container cargo ahead of time. We have introduced optical character recognition (OCR), as well as RFID (radio frequency ID) tags for truck drivers to make their entry and exit at the port seamless.

Automation

The ePass service is among a range of new mobile applications and internal services that provide real time business intelligence to decision-makers. Through the ePass system, customers can submit all of their security details online in advance. The ePass is now fully integrated with the Emirates ID system (the UAE's mandatory identity card for all residents). We have also developed a new smartphone application through which customers can apply for port permits and get approvals online. All IT functions have now been migrated to a central virtual server that offers financial cost savings and significant energy savings – reducing the server power consumption by more than 40%.

Automation is increasingly the norm at Khalifa Port Container Terminal. The fully automated security gates are linked to an online appointment system and the ePass system. The gantry cranes will also be programmed to use less and less human mediation, and will soon be managed remotely. Innovation is also implemented in container stacking. Khalifa Port's



automated stacking cranes (ASCs) are operated through a specially-designed operating system and are used to organise the containers in the dedicated container yard. With the six newly delivered and six expected ASCs, the overall stacking capacity at Khalifa Port's container yard will increase by 40%.

Automation is also trickling down to client level. Providing business intelligence and customer support, IT communications and rack hosting services has translated into a larger number of key clients setting up at the port. For example, Abu Dhabi Terminals, the manager and operator of the terminal, has developed an automated packaging facility for a leading provider of plastics solutions Borouge, expediting export of its products.

Security

Central to our success is safety, one of the most important aspects at Abu Dhabi Ports. The risk of cyber-attacks is on the rise and as part of the UAE's critical infrastructure, Abu Dhabi Ports has ensured that its critical systems and applications are protected from these threats. We have joined the newly formed Transport Working Group which has been set up by the UAE's National Electronic Security Authority. In addition, Abu Dhabi Ports has formed an Information Security Committee that is constantly working to improve internal capabilities in this area.

We have also implemented 'Eye in the Sky' cameras to support safety measures. The two new GPS (Global Positioning System) auto-pilot enabled drone high-definition cameras enhance surveillance and boost maritime security. These cameras help minimise human risk during accidents or search and rescue situations.

Khalifa Port is also fully compliant with the ISPS (International Ship and Port

Facility Security) Code, a comprehensive standardised set of measures to enhance the security of ships and port facilities developed in response to the perceived potential threats from global terrorism. An integrated access controls system to all of its locations and critical buildings, as part of its ISPS compliance programme, will also efficiently manage Abu Dhabi Ports' workforce across multiple sites and locations.

TOS system

We have also started implementing Jade's terminal operating system, Master Terminal, at our ports. Abu Dhabi Ports went live with this new terminal operating software at Zayed Port and Khalifa Ports recently – two of the seven ports scheduled to upgrade its legacy system to Jade Master Terminal. Jade Master Terminal will enable real-time management and control of all aspects of general cargo operations, including bulk, break bulk, RoRo and project cargo, and enhance supply chain visibility.

Conclusion

When all development phases are complete, Khalifa Port will be able to handle 15 million TEU and 35 million tonnes of general cargo per year more safely and efficiently, and grow in its role as the accelerator for Abu Dhabi's import and export activities, as well as economic diversification.

Through advancement in sustainable port developments, technology and internal communications, our company culture focuses on constant improvement – encouraging innovation and rewarding business excellence. With 90% of global trade travelling by sea, Abu Dhabi Ports plays a key role linking Abu Dhabi to global markets by providing world-class infrastructure and dedicated investor and client support to deliver excellence in service to maritime and related sectors.

About the author

Mohamed Juma Al Shamisi is the CEO of Abu Dhabi Ports. Al Shamisi is an experienced maritime executive with more than 18 years industry experience. He joined Abu Dhabi Ports in 2008 and has held key leadership positions including Executive Vice President for the Abu Dhabi Ports Unit. He is currently a Board Member of Etihad Airways and an Advisory Board Member of Wollongong University, Australia in Dubai. Al Shamisi holds an MBA and Graduate Certificate of Management from the University of Tasmania, Australia. He also holds an advanced Diploma of Applied Science (shipmaster) and was awarded the Australian Maritime College's Baird Publication Prize for Best Performance in Navigation studies and the Sheikh Rashid Award for Academic Excellence.

About the organisation



Established in 2006, Abu Dhabi Ports' core objective is to facilitate the diversification of the economy by stimulating trade and development. This is done by delivering high quality maritime services, supporting partners' infrastructure projects and setting up new companies and joint ventures in the ports and logistics sectors. The flagship state-of-the-art Khalifa Port and Khalifa Industrial Zone play a big role, supporting the diversification of the economy. Khalifa Port was inaugurated on 12/12/12 by UAE President HH Sheikh Khalifa bin Zayed Al Nahyan. The port's semi-automated container terminal handles all of Abu Dhabi's container traffic, after its transfer from Zayed Port, the historic port in the city centre.

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