

# IN CONVERSATION WITH: ABB

## SCALING AUTOMATION ACROSS ASIA





**Margherita Bruno**, Managing Editor,  
Port Technology International, interviewing  
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**Asia presents a wide spectrum of automation maturity. How does ABB tailor its automation solutions to suit such diverse terminal environments, from early adopters to fully automated operations?**

ABB has proven capabilities as an automation supplier, enabling terminals to adopt automation gradually, starting at a level that aligns with their specific needs. Our scalable solutions range from stand-alone OCR systems to fully-integrated automated systems, allowing us to support customers throughout their automation journey – whether they are early adopters or pursuing advanced implementations. With a strong local presence, we not only get them up and running but also ensure seamless deployment and ongoing support to help our customers succeed long-term.

**There's often concern in emerging markets about the cost and complexity of automation. How does ABB work with terminals to ensure a scalable, phased approach that aligns with their investment capabilities?**

Historically, the decision to automate has often hinged on labour costs. Today, terminals increasingly recognise that automation delivers a wide range of benefits beyond cost savings. These include a safer and more ergonomic work environment, reduced equipment wear and tear, enhanced data quality, and accelerated digitalisation for faster access to information. As these



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advantages become more evident, we see a growing shift toward embracing automated terminal operations.

While some terminals may initially view automation as adding complexity, our global experience demonstrates that it can be introduced in flexible, phased approaches tailored to each terminal's needs.

For example, implementing OCR systems on existing equipment offers a practical entry point into automation, enhancing efficiency, data quality, and safety without major disruption. In greenfield terminals, a phased rollout of crane systems allows operations to begin quickly, delivering early returns on investment while laying the foundation for future expansion and advanced automation stages.

**You recently deployed crane automation systems in Kerala and Colombo, the first in their respective countries. What were the key challenges and learnings from these**

**deployments, and how do they shape ABB's approach in similar emerging markets?**

It is important to acknowledge that terminals aiming for advanced operations are more ready to take on the challenge, train staff, and create the right environment for success. Moving from manual operations to automation inevitably means changes to ways of working, but when all parties involved work together towards the same goal, the road to success is open.

The importance of getting the infrastructure needed in place should not be underestimated. A shift towards automated operations also has implications outside the terminal, for example for the trucker community, who will need to learn new processes as well.

**India's Maritime India Vision 2030 outlines ambitious goals around port modernisation. How do you see ABB contributing to this roadmap, and what role do you believe automation will play**



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### in India's competitiveness as a maritime hub?

To remain competitive in the global market, container terminals must deliver reliable, consistent performance, with high predictability of turnaround time and a safe working environment. Automation plays a key role in achieving this – and increasingly, it's becoming a prerequisite for participating in new services launched by shipping lines. The region is ready for modernisation and technology-driven efficiency gains.

Our experience shows that greenfield terminals in the region can become operational and highly productive in a short time. With digitalised planning and consistently high performance with fast ramp-up time, these terminals are well-positioned for long-term success through enhanced competitiveness and faster cargo movement. The foundation of automation and remote operations enables continuous technological advancement, allowing terminals to evolve from partial automation to fully automated systems.

### How does ABB's global experience, for example, in Latin America or Europe, inform the way you approach automation projects in Asia's fast-evolving port landscape?

Through our extensive global experience, we've encountered a wide range of terminal operations – from small, manual setups to large-scale, fully automated facilities. This enables us to meet terminals wherever they are on their automation journey and tailor solutions that align with their goals. Whether you're planning to make your cranes automation-ready in the coming years or looking to implement gate and crane OCR systems today, we have the expertise to support you.

With our global presence and strong local support, we guide terminals through each step of automation, ensuring a smooth and scalable transition.

### What innovations or enhancements is ABB currently developing that you believe will be particularly relevant to the

### next generation of container terminals in Asia?

Artificial Intelligence (AI) continues to reshape terminal operations across container ports, driving both increased automation and enhanced human-machine collaboration. AI is not only enabling the shift toward autonomous operations but also supporting crane operators by reducing workload through, e.g. improved graphical guidance. These advancements contribute to safer, more efficient, and more reliable port operations.

Today, yard operations are already highly automated, with container handling – such as picking up and landing – performed without manual intervention and often being remotely supervised. AI plays a key role in optimising interactions between yard cranes and external objects like chassis, further reducing the need for manual adjustments and increasing operational efficiency.

Beyond current applications, ongoing technological



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developments will continue to break down barriers to automation. AI will be central to these efforts, introducing smarter systems that enhance safety, streamline workflows, and enable greater autonomy across all areas of container terminal operations.

AI has significantly enhanced Optical Character Recognition (OCR) systems, providing more data points to operators and improving overall system accuracy. With machine learning integration, OCR accuracy has increased from an already high 95 per cent to an impressive 98–99 per cent. OCR technology has evolved beyond simply reading container numbers and license plates – it now plays a vital role in supporting automation and operational safety through real-time data processing and integration with other systems. This advancement allows operators to work more efficiently while benefiting from a safer working environment.

A notable innovation in ABB's Crane OCR portfolio is the QuayPro module. QuayPro verifies the actual stowage position of containers on a vessel during loading and discharge operations. By automating the stowage confirmation process, terminals

can streamline operations, reduce turnaround times, and enable vessels to depart more quickly – making it a key productivity differentiator.

**Looking ahead, are there specific countries or ports in Asia you see as key opportunities for ABB's automation portfolio?**

Across the region, we are seeing growing interest in automation and OCR systems. In some cases, terminals have already developed concrete plans, while in others, there is strong curiosity to explore and learn more about the possibilities. As previously mentioned, the Indian subcontinent shows particularly ambitious goals, and we are also observing promising developments in other parts of South-East Asia.

We are fully prepared to support terminals throughout the region – whether they are taking their first steps toward automation or scaling up existing systems. Our solutions are adaptable to both small-scale implementations and large-scale transformations, ensuring that each terminal can progress at a pace and scope that suits its operational needs and local context.

**ABOUT THE AUTHOR**

Fredrik Johanson joined ABB in the mid-80s as a systems design engineer. Over the years, he has gained long and versatile experience in crane systems and automation of container terminals by working in various roles in sales and project execution organisations.

**ABOUT THE COMPANY**

ABB Marine & Ports drives efficiency, safety, and a clean maritime future through electric, automated, and digital solutions that help cargo terminals optimise performance, increase reliability, and reduce emissions. With experts operating from 26 locations worldwide, we bring over 100 years of industry experience. At ABB, our mission is to help industries outrun–leaner and cleaner.