

Interview with Sjoerd de Jager

Managing Director, Co-founder at PortXchange

MI - With breakthroughs in artificial intelligence (AI), digital twin technologies, Big Data, IoT and other advanced technologies, within the topic of digital transformation, where do you see the biggest opportunities for sustainable initiatives by ports and terminal operators within the next 2-3 years?

SDJ - Over the next two to three years, the biggest opportunity is not in adopting technology for its own sake, but in using AI, digital twins and IoT to drive measurable emission reductions in day-to-day operations. The reality is that a lot of emissions in ports are still avoidable. We see vessels steaming full speed to a port only to wait at anchorage. So, AI-driven voyage optimisation and better prediction of arrival times are immediate levers. If you enable Just-in-Time arrivals, you reduce fuel consumption, congestion and emissions at the same time. That directly supports CII performance and broader decarbonisation targets.



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SDJ - Digital twins are valuable if they're used pragmatically – for example, to simulate port call scenarios, anchorage congestion, or the impact of shore power investments before you deploy capital. This reduces risk and supports better investment decisions, particularly around alternative fuels and energy infrastructure. The key is standardised, reliable data. Without common measurement frameworks, advanced technologies will not deliver consistent sustainability outcomes. Big Data and IoT also help, but only if the underlying data is shared and reliable. The technology is largely there – the real opportunity in the next few years is operational optimisation powered by better data.



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MI - What are the primary contributing factors that will continue to drive technology adoption within the "Cleaner Ports" strategies?

SDJ - First, regulation. Frameworks like ETS, FuelEU Maritime, and CII create direct compliance pressure. Ports and terminal operators therefore need tools that allow them to measure emissions accurately, forecast impact, and demonstrate progress. That naturally accelerates adoption of digital monitoring, optimisation and reporting solutions.

Second of all, there is a strong economic driver. Fuel is expensive, congestion is expensive, inefficiency is expensive. Technologies that reduce waiting time or improve asset utilisation pay for themselves relatively quickly. When sustainability and cost savings align, adoption accelerates. At the same time, operational efficiency remains a strong economic driver. Solutions that reduce waiting times, improve voyage planning and optimise assets, use lower fuel consumption and emissions simultaneously, making sustainability a commercially rational choice.



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SDJ - Third, stakeholder pressure continues to increase. Scope 3 emissions are becoming part of the conversation. Ports are being asked to provide credible, standardised emissions data across the ecosystem. You cannot do that with manual spreadsheets.

And finally, infrastructure transition. Shore power, electrification and alternative fuels require forecasting, utilisation planning and monitoring. Without digital tools, those investments become very hard to justify.



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MI - In your opinion, what are the main trends in the global port sector that will become front-burner issues for more sustainable port operations in the next 1-2 years?

SDJ - In the next one to two years, I think what will really move to the foreground is the gap between ambition and execution. Most ports already have sustainability targets. The question is whether they have the operational visibility to actually steer on them.

What we still see is that a lot of time is spent collecting and cleaning data. But that's not where value is created. So the shift will be toward automating emissions calculations and embedding that insight directly into daily operations. Once you can see, in near real time, where emissions occur – at anchorage, during approach, at berth – you start having a different conversation internally.



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SDJ - And then there is the data-sharing issue. Everyone agrees collaboration is necessary, but in practice the industry is still siloed. I think the coming years will force more openness – balanced, of course, with cybersecurity concerns. We can't optimise what we don't see. So overall, the trend is less about new AI-hype and more about using existing data to build reliable tools and remove inefficiency – making sustainability measurable.



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MI - Can you tell us a little about your company's most recent success stories? What were your customer's key challenges, and how did your solutions help them?

SDJ - If I look at our recent success stories, what stands out is the fact that we've been able to remove a very practical bottleneck for ports. Up until quite recently, emission calculations were fragmented and inconsistent, making it difficult to prioritise efforts or measure progress against net-zero goals.

But in working with the Port of Rotterdam to launch EmissionInsider, we were able to address a fundamental gap in maritime decarbonisation: reliable, comparable data on transport-related emissions. EmissionInsider gives the port and its community transparent visibility of emissions from vessels, barges, trucks, and rail by integrating multimodal data and analytics, standardising reporting and supporting decisions on where interventions will have the most impact. This foundation of sound data has enabled better strategy, clearer project prioritisation and collaboration across stakeholders – and it exemplifies how digital tools can turn ambition into measurable outcomes for the broader industry.

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MI - Can you tell us a little about your company's most recent success stories? What were your customer's key challenges, and how did your solutions help them?

SDJ - What changed is that the port no longer spends a majority of their time gathering data. They can focus on interpreting it and acting on it. And once you combine emissions visibility with port call optimisation insights, you can clearly see where avoidable emissions occur.



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MI - What are your recommendations for a port or terminal operator looking to take that leap towards a more sustainable and environmentally-friendly operation?

SDJ - A port's transition toward more sustainable operations starts with transparency. Without a clear and standardised understanding of emissions across vessel calls, terminal activities, and hinterland transport, sustainability ambitions remain abstract. From there, the real gains in the near term lie in **operational optimisation** — improving port call coordination, reducing idle time, and aligning stakeholders around Just-in-Time principles. These initiatives deliver measurable impact without waiting for large-scale infrastructure changes.



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SDJ - At the same time, collaboration across the ecosystem is essential. Sustainability in ports is not a standalone effort; it depends on data sharing and aligned incentives between shipping lines, terminals, authorities, and cargo owners. Infrastructure investments such as shore power or alternative fuels are important, but they need to be supported by reliable demand signals and digital systems to ensure effective utilisation. Ultimately, sustainability becomes durable when it is integrated into commercial decision-making rather than treated as a parallel objective.



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OBRIGADO!

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