


DRY BULK®

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Dirk Janssens, VIGAN, outlines the new demands on machinery and infrastructure in the dry bulk logistics industry as global living standards change, and considers how operators can meet this challenge.

Feeding the world's growing population is an ever-increasing challenge due to changing family patterns, eating habits, climate change, and geopolitical factors. The world population is continuously rising and people are changing their eating habits, leaving their homes to find a better future, migrating to vast cities, and are less willing to spend time to prepare their daily dishes.

A WORLD AT MULTIPLE SPEEDS

In many industrialised countries there is also an increasing awareness of quality of life. People want to work less and closer to their homes, spend more time with their families, and live better.



Figure 1. VIGAN's factory in Nivelles, Belgium.



Figure 2. VIGAN CSU NIV 600 tph in Fortaleza, Brazil.



Figure 3. VIGAN CSU NIV 200 tph in Havana, Cuba.

A world at multiple speeds

What seems contradictory at first sight is logical upon reflection. In those countries where people have built a good standard of living, the next generation is ready to capitalise on the benefits of that. In other countries, people are living through their industrial revolution or are at its beginning. They are prepared to work harder for less, to drive further for good jobs, to travel when needed in often sub-optimal conditions.

So, the world is running at two or even more speeds. The bulk logistics industry might not be aware of the details of eating patterns or living standards, but it faces the consequences. More grains and oil seeds must be grown, harvested and transported. These needs transcend world politics. The vast agricultural areas where crops are grown most efficiently are generally less populated. Infrastructure must be implemented 'from farm to fork,' as they say.

In many important ports, the unloading and loading equipment is old and not adapted to the new demands in terms of capacity and vessel size. Countries like Brazil and Russia play an extremely important role in feeding the masses. New agricultural space has been created, sometimes at the detriment of the environment. The infrastructure in those areas is often new and adapted to the latest standards.

Industry roles

VIGAN sees this world at two speeds clearly. It has the chance to transform, improve, and adapt unloading and loading equipment in the old world. It is very challenging to transform equipment in an environment that was not foreseen for the existing quality standards, capacity requests and vessel size. VIGAN brings the equipment in line with the latest standards in terms of energy consumption, dust and noise emission levels as well as easiness to operate. People want to follow up on their unloading and loading equipment from their office chair and observe what is happening. VIGAN meets these requests, and still tries to provide machines with the level of sophistication necessary to function well but avoiding too much overkill, which would result in machines with a lack of availability.

When designing shiploading and unloading systems, several critical factors are considered to ensure efficiency and reliability. These include compatibility with different ship types and sizes, the characteristics of the cargo, desired capacity and throughput, environmental conditions, terminal layout, safety, energy efficiency, and maintenance requirements. VIGAN Engineering prioritises these elements to create systems that meet the specific needs of its clients.

There are very few complete white paper projects where VIGAN can start from scratch and create the best possible configurations. In most countries, existing ports are congested. They unload containers, cars and bulk in almost the same space. So, the

machines, being very vast, must still be moved to make place for other activities.

The company provides a variety of equipment tailored to meet these specific demands and needs:

- Mobile grain pumps: up to 250 tph.
- Pneumatic and mechanical ship unloaders: Available in both fixed and mobile versions, these unloaders are powered by diesel generators or cable reels, with pneumatic unloaders handling up to 800 tph and mechanical unloaders up to 1500 tph.
- Loaders: VIGAN's loaders are versatile, suitable for various vessels including large and small barges, with mechanical loading capacities up to 2000 tph.

One of VIGAN's features is its ability to also deliver complete turnkey projects. This includes not only the supply of machines but also the management of entire port terminal projects. From ship unloading and loading to storage facilities and bagging operations, VIGAN ensures a seamless integration of all components.

Keys to success

This adaptability and commitment to innovation and customer satisfaction are among the reasons why VIGAN Engineering, founded in the heart of Europe, has grown from a local company to a leader in the design and production of agribulk product handling equipment.

The company's headquarters in Nivelles is also strategically positioned about 30 km south of Brussels, allowing it to serve a global market efficiently. Indeed, VIGAN exports 99% of its equipment, with emerging markets primarily in rapidly growing regions.

These are not the only ingredients for a successful recipe. The company's vertical integration approach allows complete control over every aspect of operations, from initial design and calculation to manufacturing and shipping. In contrast to competitors heavily relying on subcontractors, VIGAN maintains a hands-on process.

VIGAN's commitment to delivering top-notch machinery is shown through its practice of pre-assembling and testing each machine in its factory in Belgium. This care, from the initial design phase to commissioning, has been a cornerstone of the company's success.

While embracing new technologies, VIGAN remains cautious about the potential interference of sophisticated electronics in machine availability. The company prioritises durability and availability to prevent the machine's unavailability when needed the most. VIGAN stays vigilant, implementing new technologies only when proven durable and easy to use.

A demonstration of this dedication lies in the establishment of a specialised department solely focused on the design and production of electronic

and electrical components. Since its inception, this department has experienced continuous growth. Fully integrated within the company, this department ensures in-depth expertise in the design and manufacturing of high-quality electrical and electronic components, thereby ensuring the reliability and performance of



Figure 4. VIGAN CSU NIV 400 tph in Savona, Italy.



Figure 5. VIGAN Loader 700 tph in Kuryk, Kazakhstan.



Figure 6. VIGAN CSU NIV 300 tph in Misurata, Libya.

VIGAN Engineering's agricultural bulk material equipment.

As VIGAN introduces a new generation of CSUs with increased capacity, the company emphasises the importance of maintaining durability and availability. Upscaling machine size involves addressing multiple parameters, including turbine size, piping diameters, air-lock sizes. The company has successfully solved these challenges in the near past, showcasing its ability to adapt to evolving industry needs.

Customer service

VIGAN Engineering is designed to offer a comprehensive approach that combines proactive maintenance, long-term support, technological updates, and meticulous planning.

A strong emphasis is placed on proactive maintenance, conducting regular inspections and providing precise maintenance recommendations to keep the machines in optimal condition. This proactive approach helps prevent potential issues before they become significant problems, ensuring the reliability and longevity of its equipment.



Figure 7. VIGAN loader 1500 tph in Constanta, Romania.

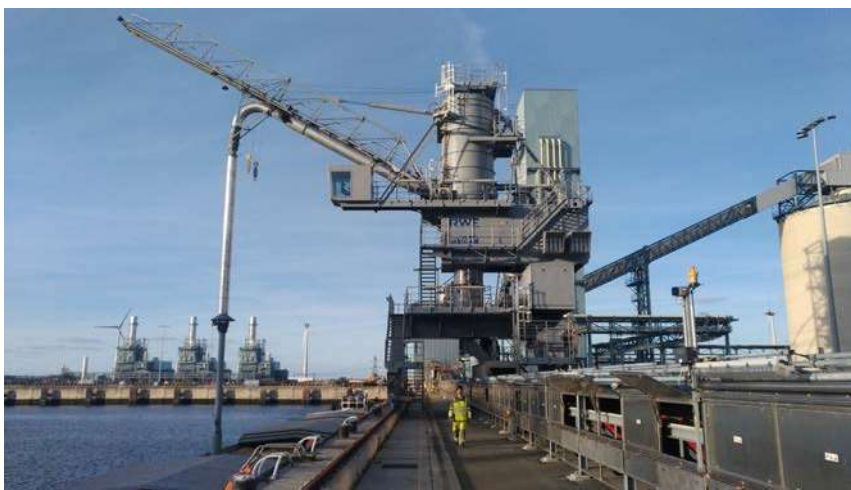


Figure 8. VIGAN CSU NIV 500 unloading wood pellets at Eemshaven, the Netherlands.

In addition to proactive maintenance, high-quality materials and robust designs are used in its machines. These elements contribute to the durability and dependability of its equipment, which in turn reduced the frequency and cost of repairs.

VIGAN also offers long-term support for its machines and maintains detailed records of all its machines, including exact drawings and photographs of the original configurations. This record-keeping allows for the provision accurate and timely support when customers need it. Spare parts for machines that are up to 40 years old will be provided, demonstrating its commitment to supporting the customers over the long haul.

Furthermore, the company offer technical assistance that includes detailed inspections of machines, comprehensive reports on their condition, and recommendations for maintenance or adjustments. This level of support ensures that customers can keep their machines running smoothly for many years.

To keep up with technological advancements, VIGAN modernises older machines with new

technologies. For example, new electrical engines and frequency steering systems have been installed to improve energy efficiency. These updates can reduce energy consumption by up to 25%, which is particularly important in the context of rising energy costs. By integrating new technologies into older machines, customers are able to stay competitive and reduce their operational costs.

Finally, VIGAN ensures that any interventions are well-planned to minimise downtime and costs. It works closely with customers to plan updates or changes, providing dimensions of new configurations and supporting the preparation of the machines. This careful planning helps ensure that interventions are completed quickly and efficiently, with minimal disruption to operations. In many cases, the investment in these updates can be recouped within 1 to 2 years through savings in energy costs and improved operational efficiency.

By combining these strategies, VIGAN Engineering maintains high standards for its machines and ensures that its customers remain satisfied and supported throughout the lifespan of its equipment. **DB**



Handle bulk with
efficiency and reliability

Pneumatic and mechanical ship (un)loaders

Up to 2500 tph for loaders and up to 1200 tph for unloaders.

Low noise & no dust emission

Turnkey solutions for cereals, soy flour, fertilizer, pellets and more...

