

# Lean, powerful and reliable Smart WMS from CodeIT



*DenEast's ultra-modern aseptic packing plant is state-of-the-art.*

**DenEast's core business is the manufacturing and supply chain management of aseptically packed dairy nutritional and plant-based beverages packed in Tetra Pak's latest packaging concepts. Their state-of-the-art, green-field factory strategically located in southern Vietnam have become one of the leading contract packers in Asia and an innovative force to reckon with. Since the start of production, CodeIT played a central role in enabling traceability in their whole supply chain from incoming materials to product delivery. Very soon the need to streamline and integrate warehouse management became a top priority for DenEast.**

Johan Boden, co-founder, and CEO of DenEast tells it how it was – "We were very pleased with how CodeIT worked together with us and with their approach to problem-solving. Upon completion of phase 1 of our new factory, we asked the CodeIT Team to develop a solution to help us stay on top of warehouse management challenges generated by our rapid growth. At first, CodeIT was hesitant, but we would not take "no" for an answer. We were confident CodeIT was the right team to come up with an efficient solution that interconnects with the other information systems we have in the company such as SAP and can scale with our business growth and increasing needs. After just 10 months, they had a new warehouse management system in place in beta. Now it is Live, and DenEast has what we need to take us forward and grow.

Quang Nguyen, who heads up CodeIT Project Sales in Vietnam, is proud to add, "Everyone at CodeIT gives special thanks to DenEast Management for believing in us. It has been an exciting journey growing together, and special thanks to a dedicated R&D team to make CodeIT Smart WMS a reality."



*The DenEast Management Team*

### **Growing need for streamlining and integration**

At the roll-out of CodeIT Enterprise™ at DenEast in Vietnam, the core functions were Raw Materials and Finished Goods labeling and Track and Trace throughout the entire shop floor. DenEast uses CodeIT Enterprise™ integrated in real-time with the state-of-the-art production equipment from TetraPak and their process steering system Tetra Pak PlantMaster, plus data exchange with DenEast's SAP Business One ERP system.

Quang Nguyen recalls, "When we first implemented our Traceability system at DenEast, warehousing was quite simple, with several dedicated areas for storage. However, following DenEast's success and becoming one of the most forward-thinking contract-packers in the region, their warehouse capacity needs were skyrocketing from just being a simple single floor area to static and drive in warehouse racking system stacked six high, both for inbound and outbound warehousing."



*CodeIT Smart WMS solves all needs at DenEast. Left: Inbound ingredient store. Right: Outbound warehouse.*

## Overwhelming encouragement

Quang explains why CodeIT said "no" at first.

"Apart from successful integration with existing Warehousing Management Systems (WMS), WMS has not previously been part of the CodeIT Enterprise™ portfolio of apps. There are several reasons why. First, our primary expertise stems from our combined 150+ work years and experience in shopfloor environments and production automation. We are well-known as experts in traceability, automation, and platform inter-connectivity. However, when it comes to WMS, several major players are already established, and we saw no reason to re-invent the wheel.

Next, with CodeIT Enterprise™, we provide a fully flexible and configurable generic system to enhance production and help our clients leverage their data. We have to be careful not to underestimate the complexities of WMS. Many aspects, such as the flow of raw materials, from being received until being put into production, the handover of FG to the supply chain, preparing deliveries, etc. may look simple in many people's eyes. We appreciate it is just the tip of the iceberg; laying hidden under the surface are many challenging scenarios that mean a WMS has to accommodate and handle wrongdoings of suppliers, user errors, and equipment failures.

Finally, never before had we such clear and overwhelming encouragement to develop a WMS as a module for CodeIT Enterprise™."



*"It has been an exciting journey growing together. Everyone at CodeIT gives special thanks to DenEast Management for believing in us. and to our dedicated R&D team for making CodeIT Smart WMS a reality."*

## Stepping up to the challenge

Quang continues with a smile, "When DenEast asked us to develop a Warehousing Management System, we started with an elementary functionalities description. As the project grew, our logic had to be smarter to cover more scenarios, and *SO TOO DID WE!*"

"We stepped up to the challenge, and both companies' teams intensively discussed which functions a Smart WMS should have; in the end, the starting point was quite simple:

- Location suggestion - the WMS must be smart enough to suggest to the user where to store Received Materials on arrival.
- Handle the transaction and report the result to ERP

It may look like a walk in the park at first. However, very soon after engaging the end-users, who would be working with the system daily, the development team realized there was a need to address many specific aspects of WMS; and here comes a multitude of "What-ifs" that requires answers:

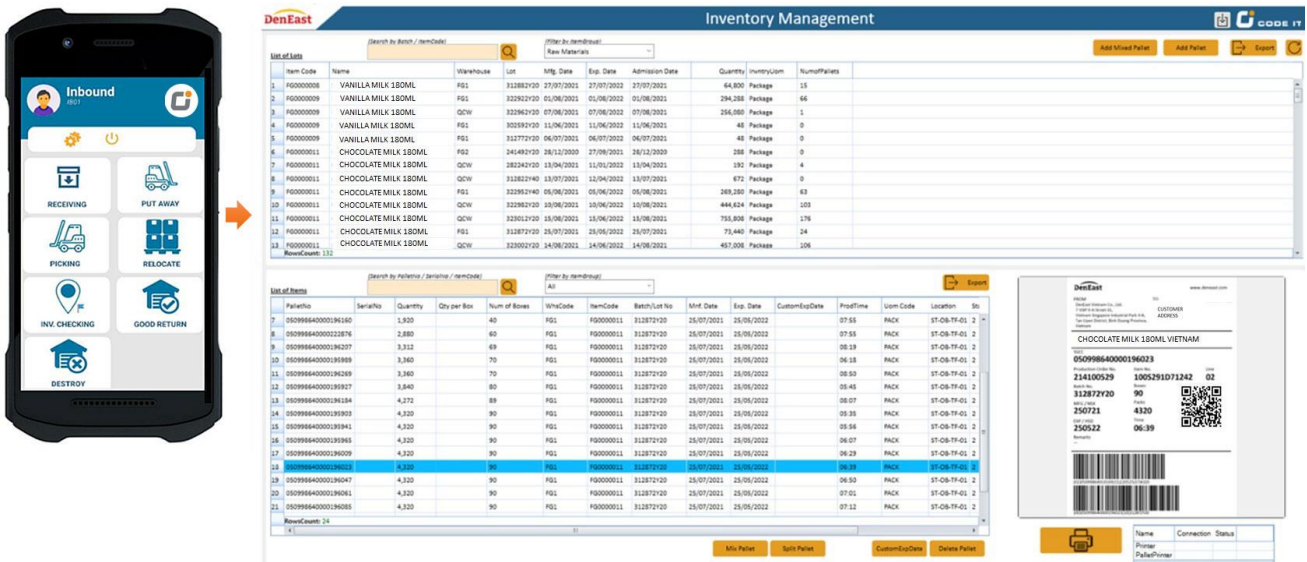
- What-if each type of material has a different put-away strategy (e.g., FEFO, FIFO, powder, liquid, etc.)?
- What if we need to send a portion of Received Materials back to suppliers to replace them with a new one? How will the system propose put-away locations if specific material needs storing in dedicated storage areas?
- What if a user picks the correct type of ingredient but from the wrong batch? How will we prevent picking the wrong item in the weighing room?
- What if we expand the finished goods warehouse or use a rented warehouse 10 km from DenEast? How will the processes and data look?
- What if we have to talk to both ERP and MES? How will we make sure ERP and MES – who have different naming logic - talk about the same thing every time?
- What if we deliver to several trucks at the same time? How will we prevent improper loading?
- What if the Wi-Fi is not stable or unavailable in some areas (e.g., cold store)? Can we make a WMS that can work in both real-time and offline modes?
- And many more brain-twisters."

### **Task-Force**

"We know Rome was not built in a day," says Quang, "but we knew patience and hard work get you nowhere without a plan and the correct tools such as our Agile Methodology and our using Sprint in Agile. So, we set up a Task-Force - a combination of DenEast's super-users and CodeIT's best hands - and we got together weekly, ensuring the development couldn't go sideways. Our Agile approach worked out great. The team captured and studied every idea the team of users came up with."

Quang makes it clear "It became clear that the correct selection of system architecture also plays a crucial role. In the beginning, the team debated whether to go for a basic barcode scanner feeding live data to the CodeIT Enterprise™ server. But we soon realized that this might not be satisfactory for the many complex activities, where we have many constraints, and crosschecks must be done on-site. Even without considering connection quality, as signals can be poor in such warehouses, the situation is too complicated for a wireless barcode reader. What we needed was some thinking outside of the box."

"We tabled several options for evaluation. Finally, we decided to replace the scanners with PDAs (Personal Digital Assistants). Although this is not new, we picked up the idea to develop a solution where a PDA can work independently as a remote mobile computer, instantly interacting with users and periodically synchronizing data with the CodeIT Enterprise™ server through Wi-Fi. The new solution added extra work for PDA configuration on the R&D team, but brings the obvious advantage to users: the PDAs can work beautifully and independently despite an intermittent Wi-Fi connection. We give the users and forklift drivers all the freedom to perform their tasks wherever they are. More significantly, all the logic, yes-no questions, crosschecks are handled by CodeIT Enterprise™, letting the users focus on their task, and letting the system guide them through what to do!"

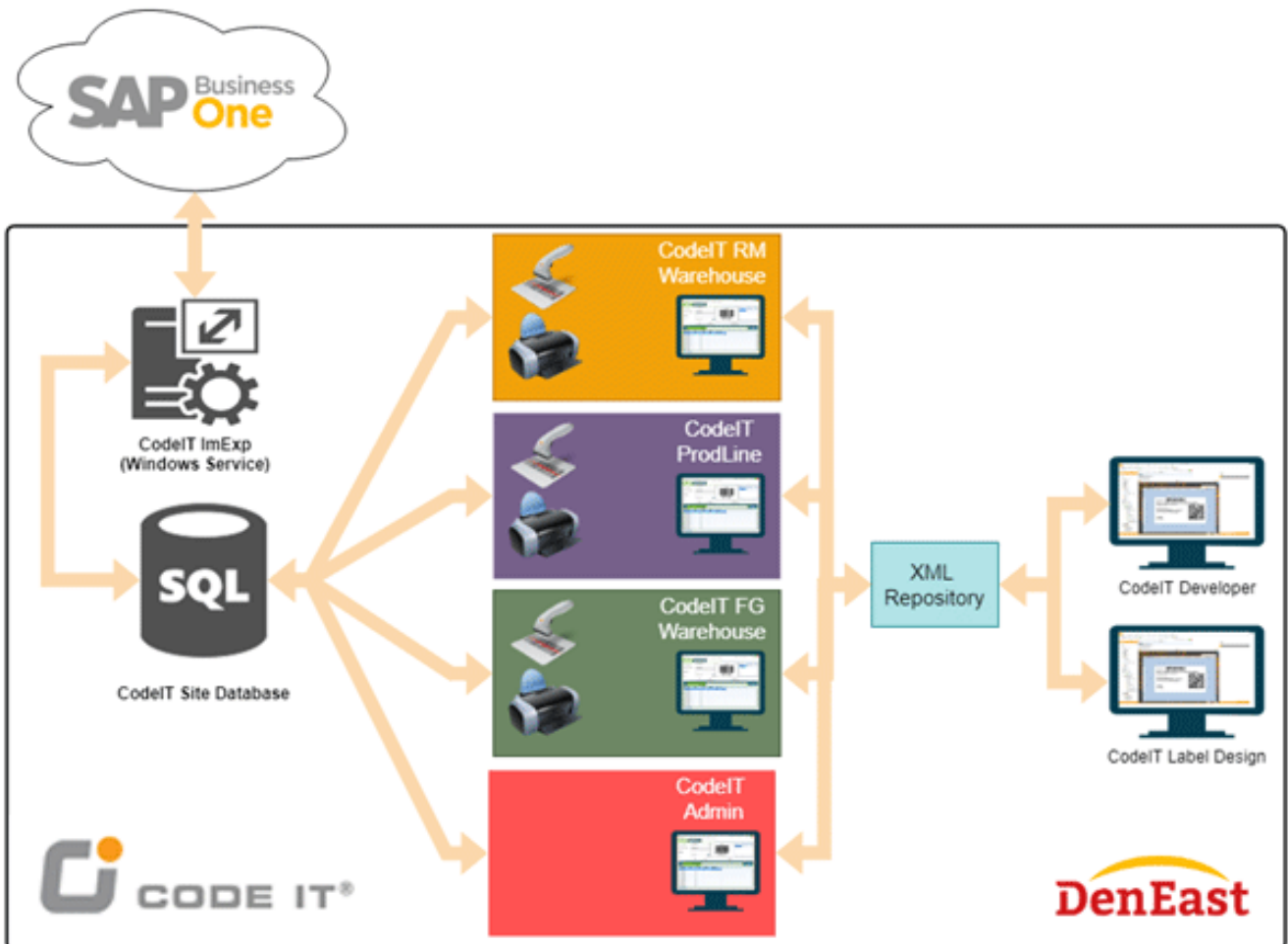


CodeIT Smart WMS is an excellent combination of PDA's mobility with the power and reliability of CodeIT Enterprise™. CodeIT makes sure all scenarios at DenEast's warehouses are covered.

### Complete warehouse control

In conclusion, Quang sums it all up;

"We are proud to say CodeIT resolved all the matters mentioned above, covering the whole cycle from the moment Received Materials arrive at the Inbound warehouse until delivering the Finished Goods Warehouse to the appointed carrier. CodeIT Enterprise™ is in complete control of the warehousing activities of one of the fastest-growing contract packers in Southeast Asia.



Total control through inter-connectivity with CodeIT Smart WMS. SAP Business One initiates the transactions, and control is executed and monitored by CodeIT Enterprise™, and DenEast warehouses are always in good order.

What makes it particularly satisfying is that we carried out all the development, installation, and Go-Live remotely as at the time, Covid-19 was hitting Vietnam badly, so we could not be on-site.

We give sincere thanks to DenEast's Supply Chain Department and Management Team, for their cooperation and for allowing us to take the helm from afar using remote control tools."

### **Available worldwide**

If your warehouse management could benefit from streamlining and integration, reach out to CodeIT at [post@codeit.no](mailto:post@codeit.no) or contact Quang Nguyen at [quang.nguyen@codeit.no](mailto:quang.nguyen@codeit.no)

**About DenEast:** <https://www.deneast.com/>

**About CodeIT:** <https://codeitworldwide.com/>