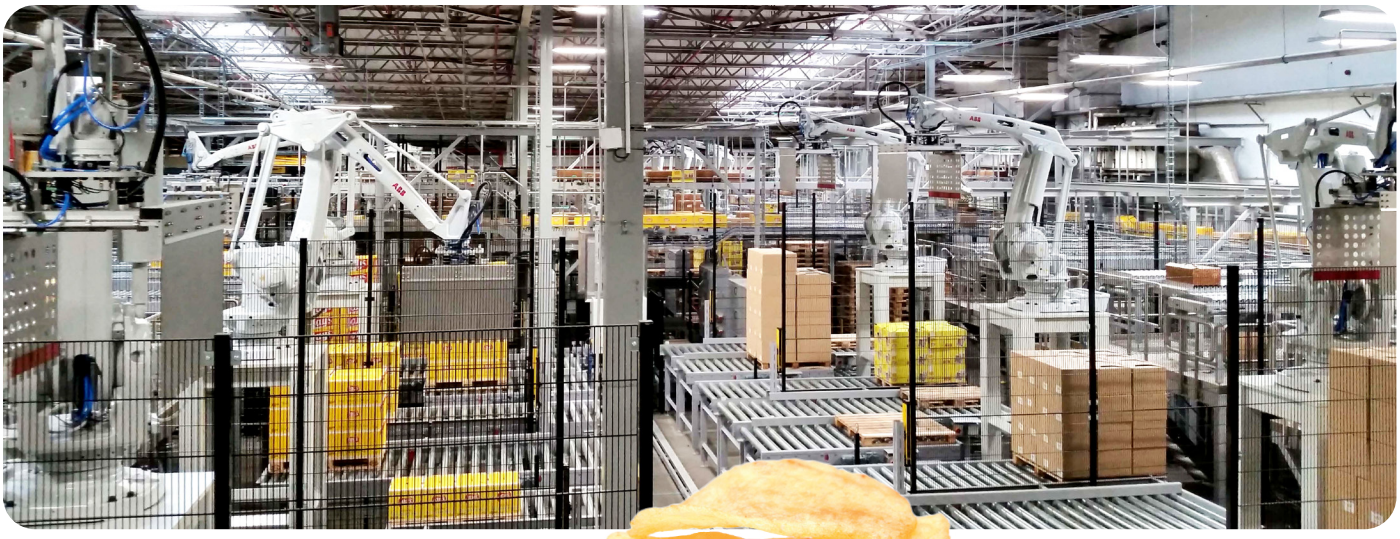
palletising

Case Story

Huge robot palletising system in Europe

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It is an impressive step to go from 42 lines with manual stacking to one integrated, fully automated, palletising system, especially when capacity demands are increasing week by week.

The plant, owned by a large multinational in food and drinks, dared to make the step and do not regret it ever since. CSi is working intensively with the mother company already for many years and has gained sufficient trust to be given such an order. Thus the two companies could establish a very good cooperation and understanding which enabled a relatively smooth project to realise the Europe's largest automated palletising system in the industry. On the premises a suitable space had to be found in which all the functions could be centralized.

The only available building appeared to be the warehouse where the manual stacking was done. Therefore this function had to be moved to allow the new equipment to be installed. The system consists of 7 line connections and case conveyors that bring the cases towards the centralized system. In the palletising area there are two loops with both 7 palletisers and 21 pallet stacking positions. The advantage during installation was that the second loop could be installed and commissioned while the first one was already running stable.

Products can be switched from one robot to another and even from one loop to another, thus enabling full redundancy, especially to balance out output of the high speed lines.

KEY DATA

- ✓ Industry: Potato chips
- ✓ Country: Poland
- ✓ Equipme nt: 14 Product Handling Robots (PHR 3*3), 300 m case conveying, 100 m pallet conveying, sorters, traverse cars, wrappers, labelers
- ✓ Central palletising of in total 42 SKU's coming from 7 producti on line connections
- ✓ Capacity: up to 150 cases per minute and 140 pallets per hour
- ✓ Euro and GMA pallets with the option to use a card board bottom sheet

BENEFITS

- ✓ Huge reduction in salary costs
- ✓ Less dependency on (non) available labor
- ✓ Capacity increases
- ✓ Very compact system in dedicated area
- ✓ Full product tracing (on pallet-level) possible
- ✓ Improved ergonomics (pallets 260 cm high)

INNOVATIONS

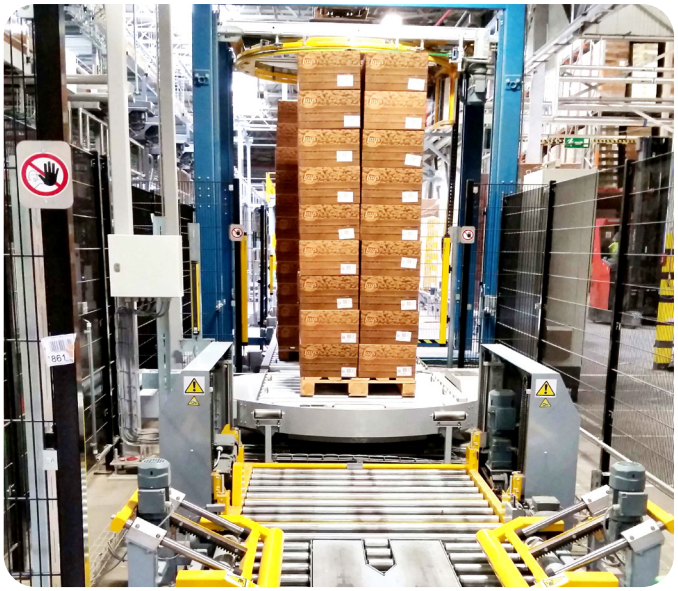
- ✓ Each robot (gripper) can handle each SKU
- ✓ Integrated CCTV system for remote monitoring
- ✓ Loop-concept with reject
- ✓ Track & Trace function for palletised products

This includes also the wrappers and the labelers: all SKU's on the loop can be assigned to minimum 2 wrappers and 2 labelers. A 'cleaning switch' has been created to allow planned cleaning and maintenance of one of the loops, and case and pallet rejects plus manual rework station are added per loop to handle rejects and refeed them into the system. This also allows the customer to switch to manual palletising if needed. The accumulation lengths are very short, making the system even more sensitive for disruptions. The choice to design the system in this way was driven by the volume push the factory is experiencing.



The production runs are relatively short, sometimes not more than a few hours. There is simply no slack to stop the lines, the system has to run 24/7 without interruptions in a wide range of production scenarios. As the palletising area is completely filled with equipment, a CCTV system was integrated to allow (remote) monitoring of the functioning. Cameras are placed on different positions and help the operators and maintenance crew to see/understand what is happening without having to go to the problem area each time. Accessibility is not always easy. With 4 user interfaces the operators have all the tools available to manage the system (e.g. visualisation, bypass functions, order assignments, utilisation overviews, KPI's).

The system also brings the benefits of tracking & tracing the products on every pallet that is produced, so that pallets can be easily tracked and traced when needed. The details of the cases on the pallet are reported to the customer's SAP system.



A critical part of the system is the removal of full pallets. They are column stacked till 260 cm and not very stable. The high quality of stacking in combination with the smooth handling of the pallets leads to very high pallet stability and undisturbed transport to wrappers, warehouse and/or truck loading.

The realisation of this huge system took place within 10 months. Although the teams of the customer and CSi worked very well together in a professional, understanding and pleasant way, there were tensions which needed to be handled. The joint effort resulted in a System Handover two weeks before the whole line started, so well ahead of plan.

The optimal running of such a system is not finished at handover. With Hypercare, Training, Spare Parts, Remote Diagnostics and other Lifecycle Services, CSi helped the customer to get the system at the highest level of reliability and keep it there. Based on size, complexity and reliability, it really is an example project in its kind.

TECHNICAL HIGHLIGHTS

- ✓ High capacity with a limited investment
- ✓ Extreme high reliability and multiple levels of redundancy
- ✓ Extensive user interfaces with many functions
- ✓ Pallet stability (ramp-up/ramp-down)
- ✓ Traverse car brings foil to wrappers