

Why is Open Robotics the best choice for scale-up manufacturing companies?

Neatco Engineering Services Inc.

Let's imagine a scenario in which a hypothetical company with great ideas wants to package different hygiene products such as shampoos with various fragrances. They initially begin their production with dispensers to fill shampoos in the containers. As their business grows, they want to speed up their production by using conveyors to convey the empty containers to the dispensing machines.

Eventually they decide to further automate their process and automatically put the lids on the containers and load them into empty boxes for packaging. Packaging shampoos with different scents into a single box requires moving other shampoos from their production line into a new line for grouping and placing them into their box. It makes sense to employ robots for loading empty containers and boxes; grouping different shampoos, boxing them, and eventually palettizing the boxes after getting sealed and labeled.

The company knows that this use of automation and robotics might be promising for creating an efficient and productive operation. Still they have several concerns with this choice. Firstly, there are the financial concerns including initial investment, expert operators, maintenance and operation costs. Second, there are the concerns with how this piece of automation will pan out in their long-term plan; if this is the right technology, if it is compatible enough with other technologies they may need down the road, and how soon it gets obsolete and needs an upgrade. These are all legitimate concerns.

Most likely the company perseveres however and implements the automation despite the concerns. As the company continues to grow, the level of automation grows with it. As this occurs, those initial concerns turn into actual problems. For example, how to expand the system as needed based on available technologies and think how it is compatible with the rest of the system already installed. There are now multiple conveyors (continuous and indexing), sorting and packaging robots, perhaps a vision-based inspection system, and several I/Os blocks and actuators in this hypothetical scenario. As these systems have been acquired over years of growth, nothing is inherently compatible, nothing functions perfectly. Instead of an efficient automation system with everything working in harmony, the company's shampoo packaging process has become a cobbled-together mess of different processes.

What if we instead went back and instead introduced the concept of Open Robotics to address the automation needs of the company? For instance, the company can initially purchase a flexible PLC to take care of all their industrial robotics and automation needs; whether conveyor position and speed control, robot control and programming, or vision communication. They can first start small, only controlling their dispensing machines. As the company grows, they add more motor drives to the control panel and add conveyors that can be handled by the same PLC. If they decide to implement the robotic sorting and packing, they can add more motor drives for them as well; they could even use up to 16 robotic arms if necessary. All these devices will be controlled using a single PLC with a load of software solutions for different applications. Included would be software to configure conveyor tracking, program robots with multi-tool to grasp on to different objects, communicate with a vision camera to inspect or control the paths of the robots, and automate the system whichever way the configuration requires. The company spends just what is needed and when is needed without redoing and over spending due to the advantages and flexibility of Open Robotics.

To summarize, what are the value propositions here? First and for most, shortening the development time due to configuring industry-tested software instead of coding and debugging from scratch. Next are modularity and scalability. As the need for more automation arises gradually, it can be done on the same hardware and software platform by adding more modules to the existing panel. Keeping the same controller and working with the same platform will decrease the development and operating costs. The supporting personnel only need to learn to work with a single hardware and software platform for all automation solutions throughout the plant. Obsolescence proofing is another advantage because of modularity in hardware and software. The system can be easily upgradable at a minimal cost.

To learn more about Open Robotics with applications in sorting and packaging, please visit our <https://intelsort.com/>.



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