

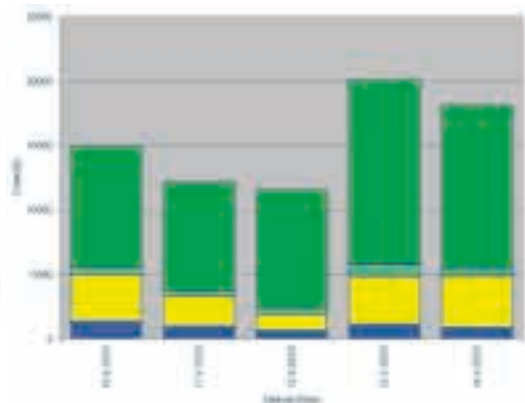
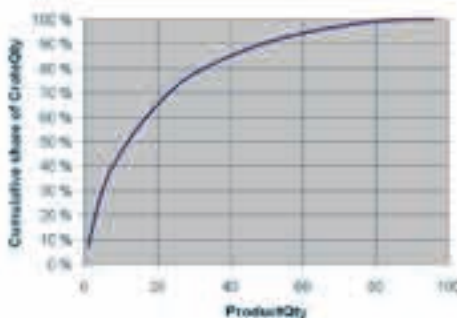
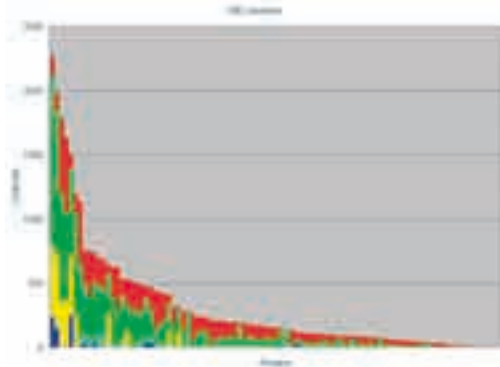
From the idea of automation



5 steps to effectiveness

When a company wants to evaluate the economic feasibility of automating a process, be it order picking or production, it is worth consulting with an expert to assess system requirements and compatibility. But what does this process look like and how long does it take? Cimcorp has a five-step process to make the decision easier.

“It’s easy to work out the profitability of an investment with a professional analysis. Just get in touch with us!”
urges Victor Hoerst, Cimcorp’s US representative, victor.hoerst@logisticsconnections.com.



Potential project

Let’s take the example of food distributor, Acme, who uses stackable plastic crates to store and ship their product. This distributor has grown significantly and has seen Cimcorp’s MultiPick. The distributor wonders if a high-performance, automated order picking system could reduce labor costs and injuries enough to justify itself. After contacting Cimcorp, discussions begin, and a preliminary evaluation is made of the project feasibility as a potential business case.

1

Initial data report

Cimcorp requires data from Acme to start their analysis. Two sets of data are needed and are usually readily available: product data and raw customer order data. Product data tells Cimcorp about all of Acme’s products, i.e. how many are in a crate, SKU number, what height of crate is used, etc. Raw customer data is a line by line account of what customers ordered each day. Acme has a product table that they can give to Cimcorp. Also, Acme produces a raw customer data file every day. After all, this is what Acme uses today to pick customer orders. The order data file looks intimidating, since they have 100 customers that each ordered 100 items for 5 days Monday through Friday. Even though the file is 50,000 lines large, it is child’s play to Cimcorp’s Excel™ junkies!

Cimcorp gives individual guidance on a case by case basis for data collection, since every application is unique.

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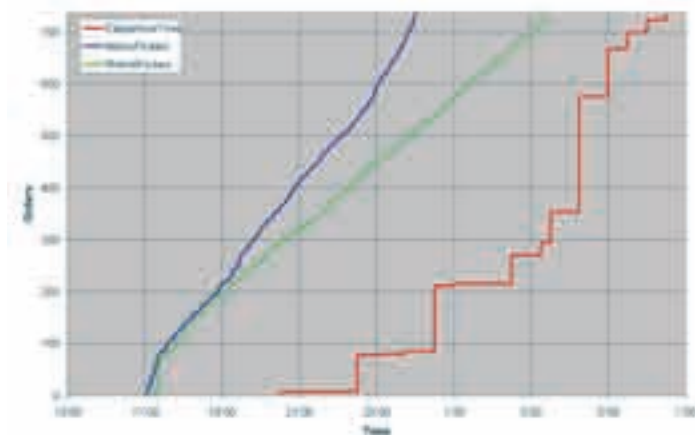
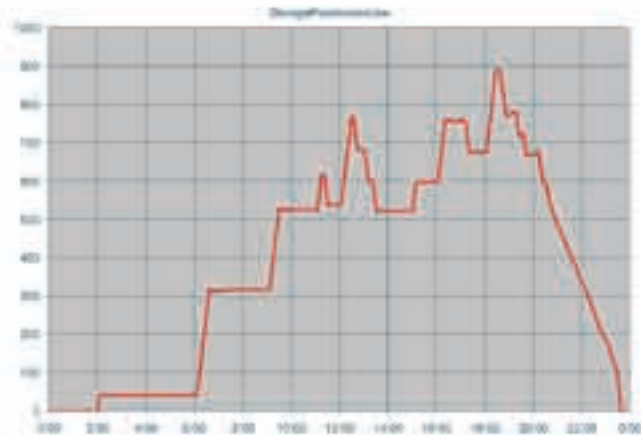
Basic analysis

Cimcorp analysis of Acme’s 50,000 lines of data produces 5 key input numbers, which are fed into Cimcorp’s MultiPick dimensioning tool. (The 5 key inputs, for those who want to know, are stack height, number of orders, number of crates, number of SKUs, and number of order lines.) Cimcorp’s dimensioning tool also takes into account when the product is available to ship and when the orders must be completed. This tool was developed with the experience of 20+ MultiPick installations and can very accurately determine the number of MultiPick robots that are needed. It indicates that Acme would need two MultiPick robots. Based on “rule of thumb” cost estimates for a two MultiPick system for Acme’s industry, both Acme and Cimcorp feel that a two MultiPick robot system would be justifiable. Therefore both Acme and Cimcorp move on to step 4.

A basic analysis can be made in one day, depending on the accuracy of the initial data.

3

to reality



Database simulation

Now that Acme and Cimcorp know that two MultiPick robots are needed, the next step is to determine the area that the MultiPick robots will need, especially when taking into account Acme picking rules and operating times. In order to do this a database simulation is needed.

Data about customer orders and the product to fill these orders from the basic analysis are loaded into a database. Additionally, however, Acme must tell Cimcorp when products are available for orders. (The basic analysis assumes that all products are available at the beginning of the order picking.) All this data represents a large queue of work. The database then simulates the MultiPicks receiving products and then picking customer orders.

For instance, in the graph above, you can see at the beginning of the day the gantry is empty. Locations are needed as product is stored. As soon as there are enough different products to start picking orders, cus-

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tomers order picks are simulated, which start to free up locations on the floor. The peak on the graph shows that the MultiPick will need a total of 900 stack locations in order to process all of Acme's work.

Additionally, the simulation helps establish an automated picking performance schedule, which is compared to customer routes and production schedules. Acme can see that all of their routes, regardless of priority level, are picked in time. Some routes could even be picked one or two hours earlier than their current manual process.

The database simulation is kept as simple as possible at first. Eventually, however, special rules and functionality specific to Acme's situation will be added. For instance, Acme would like to test whether or not it would be possible to meet shipping deadlines if Acme allowed certain customers an additional hour to finalize their orders.

Cimcorp needs one week to create a basic database simulation.

Layout design and price estimate

After the number of MultiPicks and footprint requirements are determined, then layouts can be made. Of course, there have been conceptual layouts prior to this. These layouts are different, however, in that vendors will use them to make bids on support equipment. For example, a conveyor manufacturer will see that exactly 55 meters of conveyor will be needed and will quote accordingly. From these layouts a budgetary price is determined and is submitted to Acme.

Acme must now verify that their internal ROI (Return on Investment) is met and decide whether or not to move forward with a completely automated picking solution for their operations.

TEXT: TOTTI TOISKALLIO PHOTOS: CIMCORP AND FAZER

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