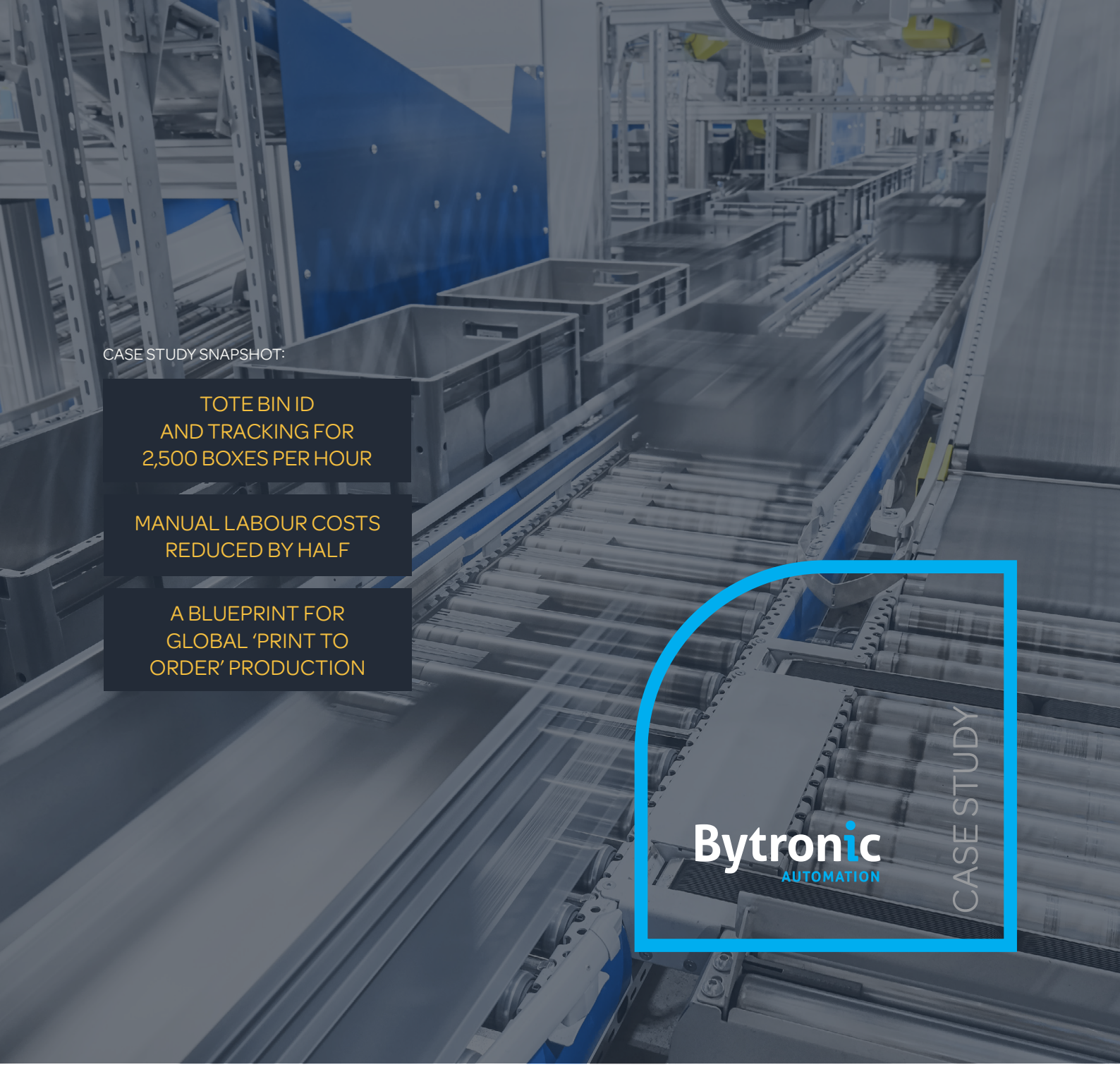


CASE STUDY SNAPSHOT:

TOTE BIN ID AND TRACKING FOR 2,500 BOXES PER HOUR

MANUAL LABOUR COSTS REDUCED BY HALF

A BLUEPRINT FOR GLOBAL 'PRINT TO ORDER' PRODUCTION

Bytronic AUTOMATION

CASE STUDY

TURNING A PAGE FOR ONLINE BOOKSELLER WITH WORLD-CLASS TOTE BIN TRACKER

TURNING A PAGE FOR ONLINE BOOKSELLER WITH WORLD-CLASS TOTE BIN TRACKER

CHALLENGE:

Powering 'print to order' revolution with machine vision

When you buy a book from the biggest online retailers, it may no longer be stored in huge warehouses to be picked and packed, but instead printed on demand each time an order is placed.

'Print to order' production lines are increasingly becoming the norm. Where publishers once had to print entire runs in advance, they can now reduce waste and cut costs, especially for books on niche subjects, academic textbooks or in the fast-growing world of self-publishing.

These advances in production demand new levels of performance and automation. So when a global conveyor manufacturer was commissioned to install a 500-metre book assembly conveyor for a large ecommerce retailer, it looked to Bytronic to deliver the world-class tracking system.

This conveyor system brings together the pages and covers of every new book ordered – each printed separately and transported in 'tote bin' containers – ready for binding.

Thanks to our solution, this production conveyor can now handle over 2,500 new books every hour. Manual labour costs have been reduced by half, allowing the workforce to be re-deployed to new positions along the line.

Two years on, the system has been so successful that we were asked to extend the scope of our machine vision software by 50 per cent to further increase tote bin capacity.

This line has become the blueprint for successful 'print to order' production, with plans to roll out the technology worldwide.

"Print to order", also known as Print on Demand or POD, is a process which allows books to be published and not be printed until the company receives an order. The growing popularity of customisation and personalisation, as well as the increase in self-publishing authors present challenges to typical traditional publishing process. POD is the answer, but when the volumes are as high as 2500 books per hour, a robust automation system is necessary to handle the process and reduce the human interactions, therefore reducing the possibilities of human errors when collating pages. Reducing the labour costs ultimately makes the POD an affordable and desirable way forward.

SOLUTION:

The blueprint for successful 'print to order' production worldwide

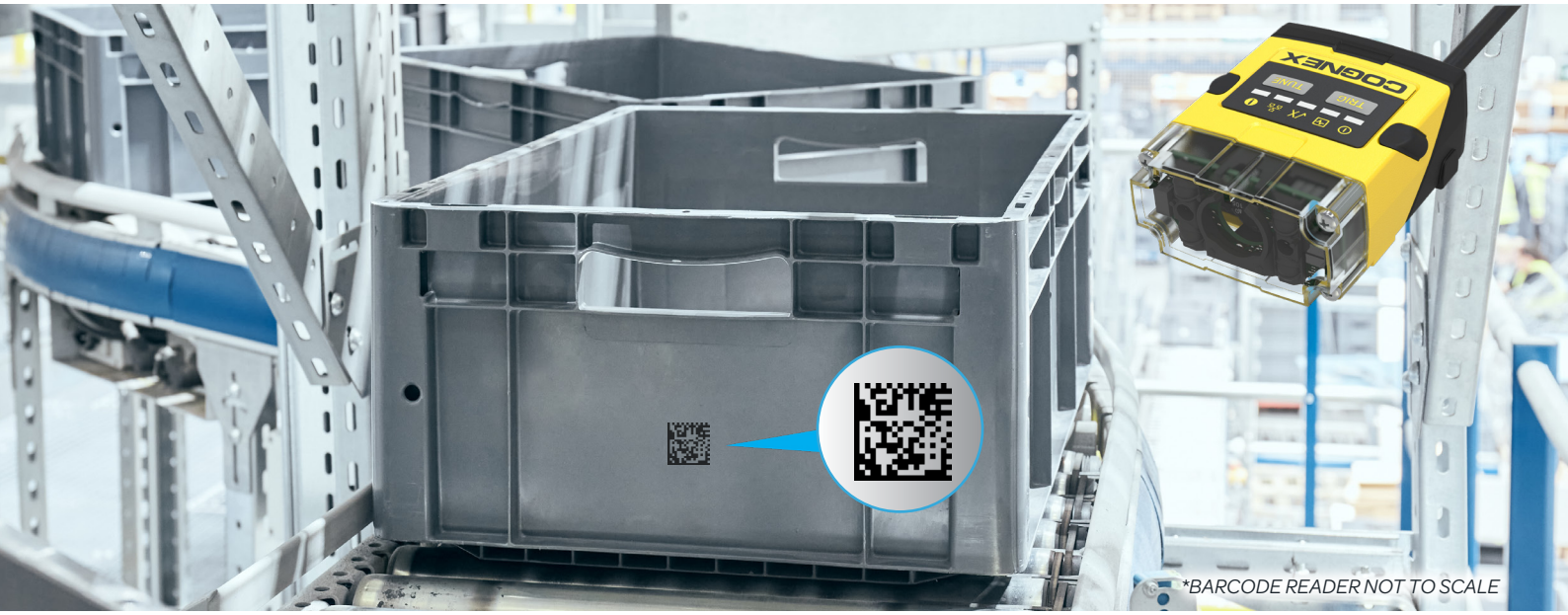
Previously, operators had to manually pair up the tote bins for each book and cover – sometimes many metres apart – a time-consuming and fallible process.

With thousands of different books being processed every hour, the risk of incomplete or incorrect products making it through to dispatch or, worse still, to the customer, was real.

To prevent this, we developed a product identification and tracking system to identify each tote bin and follow its progress along the conveyor.

Each tote was assigned a unique code, which was then automatically scanned by a series of visual barcode readers supplied by Cognex and placed at intervals.

Reducing manual labour costs by half for online bookseller with world-class machine vision on 500 metre tote conveyor.



*BARCODE READER NOT TO SCALE

The data was then fed into a FIFO – first in, first out – operating system which our software used to display tote locations in real-time.

With the location of each tote displayed on screen, and colour coded to match the physical tote, they could be quickly located and collated.

RESULTS:

Thanks to our solution, this production conveyor can now handle over 2,500 new books every hour. Manual labour costs have been reduced by half, allowing the workforce to be re-deployed to new positions along the line.

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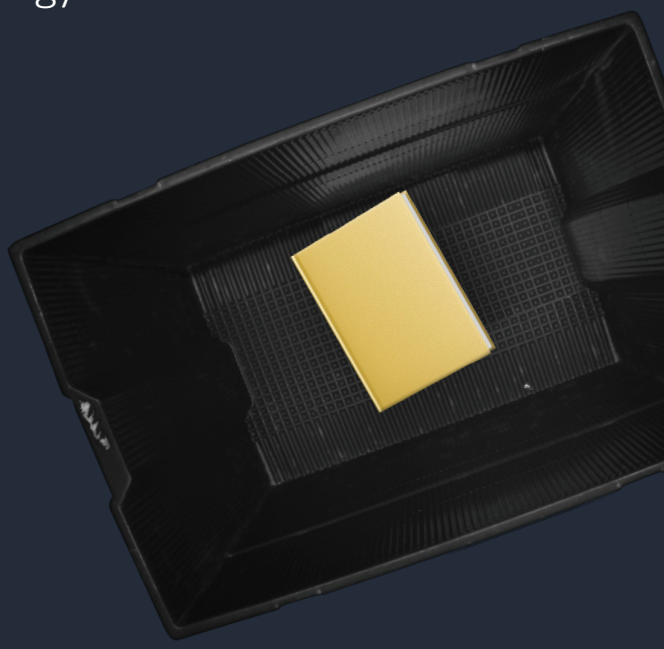

Bytronic Automation's engineers design and implement machine vision, packaging inspection, fire prevention, robot guidance and production monitoring systems.

We specialise in integrating systems for major corporate customers and have built our excellent reputation on extensive knowledge and experience in the fields of machine vision, test and measurement, automation and process control.

Our extensive experience in systems integration projects across diverse industry sectors has enabled us to develop a range of partnerships that help manufacturers improve their processes and ultimately – increase their profitability.

manufacturing
solutions with
vision

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