AUTOMATION IN THE LOGISTICS INDUSTRY

HOW SMARTER PROCESS MANAGEMENT IS BENEFITTING SUPPLY CHAIN PROVIDERS

TOSHIBA

THE LOGISTICS INDUSTRY RELIES ON PROCESSES

From receiving goods, through storing those goods, to retrieving, packing and sending them out to retailers or consumers – every link in the chain requires a process to be followed. Processes that track where items have come from, where they are stored and where they are going. Tracking inventory, tracking proof of delivery, tracking invoices and payments as the goods change hands.

THE MORE EFFICIENT THE PROCESSES, THE MORE EFFICIENT THE BUSINESS.

Efficiency has become more important than ever as the logistics industry continues to see significant changes to its traditional profile.

The move by more and more retailers away from managing their own warehouses and logistics has seen the growth of 3rd party logistics (3PL) organisations. These 3PL providers compete not only amongst themselves, but also with in-house logistics. Efficient processes drive down costs and allow them to invest in additional services to ensure they remain competitive in their ability to deliver goods quickly and cheaply.

GROWTH OF ONLINE SHOPPING

THE GROWTH OF ONLINE SHOPPING HAS HAD A DRAMATIC EFFECT ON THE LOGISTICS INDUSTRY AND ITS NEED FOR EFFICIENCY.

Firstly, it requires real-time inventory information available to show to customers in the digital store.

Secondly, rather than all goods being shipped out to fill retail shelves, a growing proportion are shipped direct to the consumer.

This means that goods remain in the warehouse for longer, increasing the inventory to be tracked, and also represents a dramatic shift in the pattern of shipments, driving a higher volume of smaller deliveries to a far wider range of locations.

What are the processes that benefit from automation?

INVOICING

Receiving invoices from suppliers and sending out invoices to clients.

RECEIPT OF GOODS

Receipt of goods in and checking goods against delivery notes.

LOCATION OF ITEMS/PICKING

Generating picking lists for customer orders, finding items in the warehouse and generating packing slips.

MANAGEMENT OF PERISHABLE GOODS

Ensuring that regulatory standards are met for refrigeration temperatures and storage dates.

PROOF OF DELIVERY (POD)

Providing the evidence of delivery that allows invoices to be generated.

DOCUMENT FILE AND RETRIEVAL

Ensuring that the right information is kept, for the right period of time to meet compliance demands, and that it can be efficiently found when needed.

WHAT ARE THE PRIMARY AUTOMATION TOOLS THAT HELP THE LOGISTICS INDUSTRY?

AIDC – AUTOMATIC IDENTIFICATION AND DATA CAPTURE

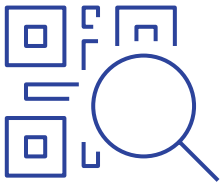
There are two key technologies used for AIDC:

1. Barcode labelling and scanning – This form of automation, used to help track inventory items throughout the supply chain, is well established and widely used throughout the industry – labelling goods, pallets and storage racks with barcodes that can be scanned to rapid identification of items.

Barcodes can also be used to hold compliance information, for example for perishable goods, showing production and consumption dates. Traditional 1D (linear) barcodes hold up to 85 characters of data. Increasingly 2D barcodes (a pattern of squares, dots and other shapes) are coming into use and can hold significantly more information.

2. RFID – Radio Frequency Identification is an alternative to barcoding for item tracking. RFID tags store information about a product or shipment (for example, date of manufacture, destination and sell-by date). The tags broadcast signals and convey product information and location over radio frequencies, captured using an RFID reader.

RFID tags can be tiny, and unlike barcodes, do not have to be within line of sight of the reader. This means they can be embedded within the item and used in a far wider range of applications. Active RFID tags have a battery power source that can be read from a distance of hundreds of metres (Passive tags take energy from the reader's radio waves and must be closer).



OCR – OPTICAL CHARACTER RECOGNITION.

OCR technology 'reads' information on incoming documents and is used to automate the receipt of incoming documents, for example, an invoice and a consignment slip.

AUTOMATED WORKFLOW PROCESSING

Used in conjunction with OCR to use the extracted data to send the document to the appropriate processing system e.g. accounts payable for an invoice, and then to file it with the appropriate meta data to determine file location and retention profile.

WHAT ARE THE PRIMARY AUTOMATION TOOLS THAT HELP THE LOGISTICS INDUSTRY?

VOICE PICKING

A system that transforms the content of a picking list into speech, telling the operator what to pick, how many and from where, via a hands-free, eyes free headset. The operator confirms the action back into the system, which recognises human speech and updates the back-end system.

AR - AUGMENTED REALITY

This form of automation allows users real-time access to knowledge, via systems or people, without leaving their workplace or stopping their task. Smart glasses with a head mounted display and camera give workers and experts the ability to share information in a 'See what I see' environment. It is used to help new staff be productive in a shorter space of time, reduce training time and cost, give rapid access to expertise and make more efficient use of expert resources.

CUSTOMER AUTOMATION STORIES

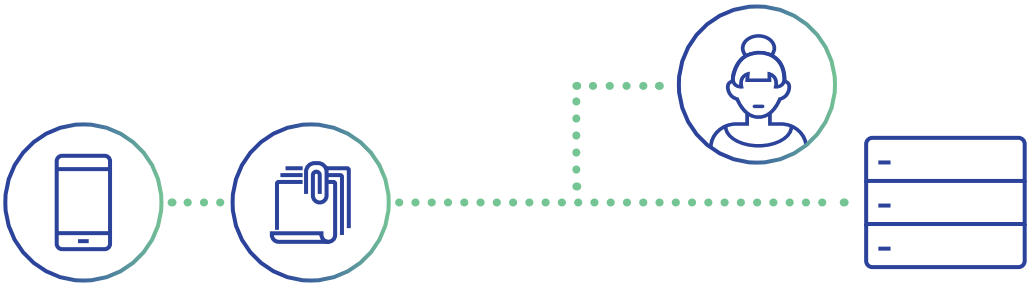
Story 1

AUTOMATED CONSIGNMENT PROCESSING

A logistics service provider has business critical processes that were still paper based, which gave them challenges with compliance, data entry accuracy, timeliness, high levels of manual intervention, duplicate key entry and over-staffing because of the need to handle monthly peaks. They were also diversifying from their previous industry focus, and were experiencing slower processing times for the 'new' goods, which used different measurement units and descriptions, unfamiliar to many staff.

The company implemented OCR and workflow technology to automate their consignment inventory process. They carried out a complete process analysis to understand where the blockages and inefficiencies were and developed the solution specifically to eliminate them. The solution scans and reads incoming documents using the organisation's business rules to extract and validate the key information and send it to their ERP system for immediate processing. It then fills the document in a fully searchable, indexed repository, allowing for retention management and rapid retrieval.

The automated system has eliminated manual interventions, reduced processing time from hours to minutes and allowed the business to redeploy staff into other parts of their organisation. It means that goods received are shown as available almost instantly and can be turned around faster, improving cash flow. The system can handle the monthly peaks, balancing workload and eliminating over-staffing.



Story 2

AUTOMATED POD WORKFLOW

A transport, warehousing and logistics service provider providing freight, 3rd party logistics (3PL), distribution and storage had grown significantly and needed to streamline and refine processes to ensure efficiency as it scaled.

One of those processes was Proof of Delivery (POD) – the company accommodates a range of client POD formats, some on paper, some on glass. As the customer base grew, so did the diversity of requirements, making the process very onerous to manage.

The organisation implemented an automated OCR system, which reads the data from all their incoming POD formats, and uses it to kick off a workflow process, including sending a copy of the document to each customer in their required format, and filing the document in their repository.

The automated process has reduced POD processing time by 3 hours a day, or 15 hours a week. With the old manual system, processing time would have increased in line with growth, but the automated system will scale to handle increased volumes with no added resource, giving the company not only savings now, but scope to continue their trajectory of growth.

CUSTOMER AUTOMATION STORIES

Story 3

SIGN ON GLASS – AUTOMATED POD PROCESSING

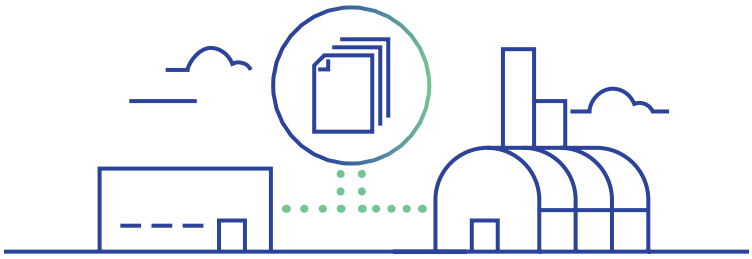
A steel manufacturer that produces steel reinforcing bars (rebar) uses a 3PL provider for deliveries. When a builder orders rebar, the 3PL asked the customer to sign a proof of delivery (POD), which was sent back to the manufacturer, where it triggers the invoice process.

But paper PODs were getting lost, defaced, delayed or forgotten – meaning the manufacturer couldn't invoice and causing cash flow issues, disputes and wasted time.

The manufacturer automated their POD process with a 'sign on glass' web portal. When the order is placed, a digital delivery docket is created, and a link to it is sent directly to the driver. By clicking on the link from any smartphone or tablet device, the driver can access an image of that docket, and the click of a button records the date and time. The driver asks the client to 'sign' with their finger on the screen, and the signed POD is instantly available in the manufacturer's system for invoicing.

There's an added benefit too, if the driver arrives at the work site and there's no-one to sign – the rebar can be left at the site, and a photo taken to prove delivery, instead of a signature.

Sign on glass is also used by clients who have their own fleet, but whose drivers deliver to remote sites, such as outback roadhouses, and are not able to return paper PODs to head office quickly, often for weeks. With automated delivery recording, there is no need to chase drivers and pieces of paper.



Story 4

AUTOMATED DATA ENTRY

A manufacturer of outdoor heating appliances had a highly efficient ERP system, which handled customer orders; validating SKUs, checking stock levels, generating picking and dispatch slips. **But the efficiency of the back-end system was compromised by the manual processing at the front-end.** Client orders came in on paper, by fax and in a range of email formats, which then had to be manually typed in.

The manufacturer automated the front-end process with OCR automation, which read the documents and sent them to the ERP in a fraction of the time and with greater accuracy than the manual handling, giving them a highly efficient system that was automated from start to finish.

HOW DOES AUTOMATION BENEFIT LOGISTICS EFFICIENCY?

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1. **Automation reduces human intervention and the number of people needed for a process –** staff are freed from repetitive (and error prone) tasks, and can be redeployed in other, more productive roles in the business. Human intervention is used only for exception processing, spot checks and complex issues.

2. **Increased throughput, balancing the workload -** automated processing enables greatly increased productivity, so businesses with a monthly/quarterly/annual peak can often handle peak demand without having to take on temporary staff.

3. **Faster process management –** in many cases process time is reduced from hours to minutes, enabling stock to be on the shelves faster, enabling invoices to be sent out more promptly.

4. **Improved cash flow –** from having items available to sell sooner after receipt, from faster turnaround on invoices and from rapid access to documents to settle queries.

5. **Increased accuracy –** removing human intervention removes the possibility of human error (e.g. mis-keying, incorrect filing or retention information) and reducing or removing reprocessing work.

6. **Assured compliance –** compliance with rules for handling perishable items, for monitoring refrigeration units and for document retention and retrieval.

To learn more about industry technology and changes, go to:
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LOGISTICS SOLUTIONS