



Manufacturers are feeling challenged by the need to adapt to new technology

How is Supply Chain 4.0 impacting production?

Eric Carter discusses the 10 key issues facing manufacturers as a result of changes wrought by Supply Chain 4.0.



Supply Chain 4.0 can elevate operational performance

Supply Chain 4.0, as defined by McKinsey, involves applying key IT innovations such as the Internet of Things, advanced robotics, analytics and big data to elevate operational performance in the warehouse and in turn improve profit margins and customer satisfaction levels.

Although Supply Chain 4.0 brings many benefits, with new opportunities to expand or enhance business operations and trade globally, many manufacturers are also feeling challenged by the continual need to adapt to new technology and optimise processes. The transition to Supply Chain 4.0 brings with it a requirement for companies to operate supply chains that are more efficient, flexible and accurate and capable of handling much greater levels of detailed information.

Here are the 10 challenges we must overcome to keep up with the supply chain revolution.



1 OVERCOMING INTENSE PRICE COMPETITION

The rise of e-commerce has removed barriers to entry and created much greater levels of competition across all sectors. Intensified competition has led to increased customer service expectations and the pressure to offer the lowest possible prices and delivery costs is greater than ever. This means profit margins are gradually being eroded and manufacturers need to optimise their supply chains to focus on constantly improving margins, whilst at the same time growing sales turnover levels. In the past, companies might have focused on turnover, believing that high sales will eventually translate into profits, but where price sensitivity is extremely high, it is margin that is the key metric.

2 EXPECTATION FOR TRACEABILITY

It is no longer good enough simply to do a great job. Today's customers expect an audit trail. This means additional information to verify the provenance of goods if relevant and the reassurance they will be arriving on time and in full.

The requirement for an audit trail goes far beyond typical lot trace capability – for example, within the food service sector, fresh produce has been identified and tagged for decades, but now suppliers are also expected to provide end-to-end traceability. This would include verifying where an item originated, the conditions in which it was reared if relevant, plus whether additional nutrients or pesticides were used. The level of traceability expected also extends to verifying that any feeds or fertilisers used came from a sustainable and ethical source, or whether any organisations involved with the production process can also be verified for ethical and sustainable practices.

For most businesses, the risks associated with bad press surrounding a dubious supply chain mean that price is no longer the overriding factor when making purchases and sourcing materials.

3 EXPLOSION OF STOCK KEEPING UNITS

Today's customers want to be treated as individuals and want the choice of products available to them to reflect this. Whereas in the past, a more limited selection would have been acceptable, today the range of products manufacturers are required to offer is growing all the time, with custom options and inflated SKU portfolios. Added to this, the frequency with which they have to change has also increased. This creates an immediate practical problem, because although new lines can be added to the production line, the warehouse will not be set up to handle such a large SKU portfolio and is frequently not consulted when ranges are changing. This has a knock-on effect for stock management, picking operations and order turnaround times. One way to overcome this is with the introduction of dynamic slotting to improve the efficiency of space utilisation.

4 MANAGING MULTIPLE ORDER PROFILES

Order profiles have changed dramatically as a result of the rise in e-commerce. For manufacturers, this has multiple implications. It may create an opportunity to sell direct to the end-consumer and improve margins by removing intermediaries. However, manufacturing warehouses may not be optimised for handling high-volume single item orders shipped to consumers, or a greater number of smaller orders shipped to retailers more frequently, which can unbalance the potential to increase margins with greater warehouse costs. Manufacturers need to be mindful of this and identify ways to improve their ability to be flexible and handle multiple order profiles – for example, with the introduction of automated batch pick and sort processes.

5 DASHBOARDS TO INFORM DECISION-MAKING

The vast volumes of data being generated right across the supply chain is creating a need for companies to have access to dashboards providing an immediate snapshot of operations based on what is most relevant for the warehouse management. Most companies today have more data than they can practically use to inform decision-making, and need a layer that sits above the data to highlight what is really significant and needs acting upon.

6 FORECASTING ACCURACY REQUIREMENTS

The lead-times in supply chains are getting longer. Goods are being sourced and made in many different regions worldwide, which in turn has made forecasting accuracy more critical. By having an accurate forecast, companies can become more agile when sourcing raw materials for the lowest prices and they can benefit from the costs associated with longer shipping lead-times whilst still meeting demand and ultimately keep inventory levels as low as possible, again minimising costs.



Introducing automation into the warehouse is essential for cost reduction

'Accuracy is the single most important aspect of Supply Chain 4.0.'

7 IMPLEMENTING PREDICTIVE SHIPPING TECHNIQUES

Although Amazon may be trademarking the concept of predictive shipping, the idea behind the approach has been in operation with manufacturers for some time where it is part of daily business as usual. Over 80% of Indigo's customers are using techniques similar to predictive shipping, which are based on forecast data, to plan production and shipping cycles and meet demand.

8 QUALITY CHECKS BUILT INTO THE SUPPLY CHAIN

To ensure consistency of product quality, there is clear evidence of quality checks and inbound process checking being conducted right across the supply chain at each stage. Manufacturers and brand owners are moving the onus for ensuring quality on to their suppliers and putting systems in place to give them full visibility as inventory control and quality checks are being completed in a standardised way. This is happening in real time, so that by the time goods leave the warehouse for the end-customer a full audit trail is available.

9 REQUIREMENT FOR ACCURACY

Accuracy is the single most important aspect of Supply Chain 4.0 to get right, because the vast majority of warehouses are measured by their ability to deliver on time in full or order in full on time, with no margin for errors.

10 ARRIVAL OF AUTOMATION

Introducing automation into the warehouse is essential for cost reduction. Full automation may be on the horizon for larger manufacturers, but the vast majority of companies are taking a partial approach. This ensures they can maintain greater levels of flexibility and also helps to reduce the level of capital expenditure required. Many of the efficiency and accuracy benefits that come with automation can still be seen when conveyors and cardex systems that have been integrated with a WMS, are added to control stock on a pick face

Dr Eric Carter

Solutions Architect,
Indigo Software.

01913 756700

eric.carter@indigo.co.uk