CONTROL THE DATA TSUNAMI
Are you drowning in the tidal wave?

IN THIS ISSUE

Ten top racking tips
Don’t limit your warehouse productivity.

The big machine behind the small parts
What it takes to maintain availability and uptime.

Lift yourself to the next level
The new ISO standard.
For issue 31 we have chosen some subjects which reflect the increasing complexities facing materials handling professionals today. Stay with us and we will help you make sense of it all.

What could be more complicated than dealing with the huge amount of data generated in supply chains? Exploring Industry 4.0 and other data-based advances, Ruari McCallion advises on gathering data and – more importantly – making best use of it.

Planning the layout, design and specification of pallet racking in a warehouse is a science in its own right. Mistakes made at the outset may limit your operation’s efficiency and productivity for many years to come. Mark Nicholson seeks expert advice and distils it into ten top tips.

While some dread the seemingly complex organisational challenge of health and safety regulation, others enthusiastically go beyond merely complying with the law. Gay Sutton looks at the new international H&S standard’s approach to improving your business and its performance.

One of many complicating problems for lift truck fleet managers is what to do when a truck is out of action and the necessary replacement part is unavailable. Gian Schiava explains how the best parts suppliers can keep your business moving.

Eureka welcomes feedback on its articles. What advice do you find most useful? Is there another subject you would like us to cover? Do you have a story for us to investigate? You can email comment@eurekapub.eu or message us via our website www.eurekapub.eu
WELCOME TO INDUSTRY 4.0
Getting information is one thing; getting useful information is another. ‘Industry 4.0’, the phrase that seems to be everywhere, is founded on data. It is not just ‘smart factories’ that need and have to deal with data: warehouse management, logistics and materials handling are very much affected too.

The main goal of Industry 4.0 in supply chain management is to foster the intelligent networking of products and processes along the value chain. It means engaging the Internet of Things (IoT), other emerging technologies (such as blockchain) and advanced data enabled by AI (artificial intelligence). With rapid advancements in analytics and machine learning (ML), companies have the power to actively examine transactional data in near real-time and use the insights derived to plug gaps and remedy revenue losses. With increasing complexity, materials handling functions cannot be handled using established planning and control practices.

OPPORTUNITIES AND CHALLENGES
Industry 4.0 technologies increase transparency, which means that performance across the entire value chain — including that of partners and suppliers — is becoming more visible. While decision-making will be more collaborative and efficient, machines are being enabled to make decisions and perform learning activities autonomously, based on man-made algorithms.

The technological organisation of logistics will change with the implementation of BI technologies, smartphone apps, AIDC and RFID technologies, and the miniaturisation of electronics.

A core task of ‘smart’ logistics and supply chain management is adding the right level of autonomy and intelligence to make it more efficient, effective, connected, agile and flexible. The right balance must be struck between semi-autonomous systems and human involvement, including ‘cobot’ working, automation and planning.

The booming availability of data is itself a challenge. From RFID to MiMa, through machine-mounted lubrication sensors, every little connector is either already equipped or capable of being equipped to provide data. How do we identify and discriminate between that which is vital, that which is important, that which is merely interesting and that which is clutter? How do we make best use of what really matters?

TIME TO START AGAIN?
At this point, you might expect a discussion of the investments that simply must be made, right away, to avoid your company’s obitration. While it’s fair to acknowledge that some investment in systems will be needed, a lot of hardware is already in place – like the sensors, RFID systems and connectors mentioned above, as well as automated conveyors and AGVs (automated guided vehicles).

There is no need to rip everything out and start again. Those sensors and automatic aids are all collecting data on location, machine capacity and condition, availability and progress, on goods’ location, source and destination, and so on. But the average warehouse or logistics operation may not be capturing it. They may be asking why they would need to, when things are going along pretty fine right now as they are.

“Universal access to the internet, changing consumer preferences, new business models, and a wholesale reinvention of retail stores are changing the industry,” says Guy Courtin, GT Nexus Vice President, Industry Solution and Strategy, Retail.

He points out that legacy warehouse management systems were built to handle the traditional linear movement of goods in the supply chain.

“They manage processes within the four walls of a warehouse, receive inventory, and facilitate its distribution to stores. Within that scope, most legacy systems get the job done.”

2025 VISION
But that is not good enough for the future. By 2025, the smart factory will be a reality, actively integrating humans and machines in combined cyber systems. Logistics and warehouse management must adopt the same technologies, so that value gained within smart factories will not be lost in the spaces outside their walls.»

What do managers in materials handling, warehousing and logistics need to know to ensure their systems are as efficient as they can be? How do they avoid drowning in a tidal wave of data? Ruari McCallion has been getting techy.

Augmented reality devices improve picking efficiency.

CONTROL THE DATA TSUNAMI

Ruari McCallion has been getting techy.

Access to the internet, changing consumer preferences, new business models, and a wholesale reinvention of retail stores are changing the industry.

Guy Courtin, Vice President at GT Nexus.
Performance and speed are crucial, but so is quality – and the ability to handle multi-channel fulfilment demands, both now and in the future.

**Glossary**

**Big Data**
Defined by Oracle, the software giant, as “larger, more complex data sets, especially from new sources”. 

**Analytics**
Qualitative and quantitative techniques and processes used to enhance productivity and business gain.

**Blockchain**
Technology that allows digital information to be distributed but not copied; Google Docs are an example. Blockchain technology facilitates and can host “a single version of the truth” in businesses. It is claimed to be the backbone of a “new type of internet”.

**Artificial intelligence (AI)** and machine learning (ML)
An area of computer science emphasising the creation of intelligent machines that work and react like humans. Software design, programming and application enable machines to learn from their environment and from their own experience, to plan and to solve problems. Speech recognition is an example of AI.

**Data capture systems enhance visibility into warehouse processes.**

Industry 4.0 technology unlocks and shares the information collected by sensors, RFID, tags, inspection equipment and so on. Machines equipped with AI use on-board sensor intelligence combined with better connectivity to enable sensors to trigger actions based on what they “see”. Automated systems can decide, themselves, on appropriate changes or responses to, for example, product line changes on a conveyor, thus enabling accommodation of smaller batch sizes.

**MAKE YOUR DATA USABLE**
But all of this depends on converting the data into a useful form. Data analytics covers the qualitative and quantitative techniques and processes used to enhance productivity and business gain. Data is extracted and categorised to identify and analyse behaviour and patterns. It’s ultimately a software solution, which may well be integrated into an organisation’s ERP (enterprise resource planning) system. Is it worth it?

Today’s supply chain is a complex network of many different stakeholders. While consumers are overwhelmingly concerned with the price and speed of delivery, logistics managers and materials handling professionals are having to deal with additional complexity and cost in the warehouse. Higher order volumes, more inventory touches, increased velocity and rising pay rates make the job of order fulfilment more difficult. The response has been heavy customisation of processes and cost in the warehouse. Higher order volumes, more inventory touches, increased velocity and rising pay rates make the job of order fulfilment more difficult.

**Data capture systems enhance visibility into warehouse processes.**

“Without an increase in near real-time data that logistics providers collect through various sources such as sensors, smartphones and B2B (business-to-business) data exchanges,” says Renuka Pahuja, Manager at The Smart Cube, “a global professional services company that specialises in procurement, analytics and research. It has offices in India, the UK, Romania, Switzerland and the USA. “Logistics companies are leveraging Big Data analytics to generate insights and make better strategic and real-time decisions to gain competitive advantage.”

**Digitise your supply chain**

There is no “quick fix” to transform an entire supply chain towards a more connected and efficient model. However, in a recent study by Pricewaterhouse Cooper (PwC) on the rise of Industry 4.0, a third of companies surveyed had already started to digitise their supply chains and 72% of respondents expected to do so in the next five years.

**Essentra Components invested £150,000 in TW Pick and Pack and warehouse management software to drive picking and delivery accuracy, giving employees better access to warehouse activity data and management information. The company is planning to introduce improved location management to reduce the delay between available and picked product, and accurately track stock.**

“ Warehouses management software must address three distinct areas of need; facilities, orders and labour,” Guy Courtin says. According to Statista, around 1.86 billion people made online purchases in 2017 and that number is expected to rise by about 30% to 2.14 billion, by 2021.

**Automation and mobile picking streamlines operations.**

**Are you ready for this?**

“Data capture systems provide real-time visibility into warehouse processes, including quality check imaging solutions, barcode scanning and product dimensioning systems,” Renuka Pahuja continues. In this new world, wearable tech devices assist in order fulfilment, and augmented reality and voice devices help increase picking efficiency and order accuracy, while robots and AGV’s streamline palletising, depalletising, picking and packing operations. New-generation warehouse and supply chain management is about using flexible, smart supply chain decisions, enabled by the human, organisational and technological components of Industry 4.0 and logistics 4.0. These are needed to make the difference in gaining competitive benefits, and even simply to survive in a hyper-connected age. Performance and speed are crucial, but so is quality – and the ability to handle multi-channel fulfilment demands, both now and in the future.

**Article feedback is welcome: editor@eurekapub.eu**

**Internet of Things (IoT)**
Online connection of machinery, equipment and sensors, such as energy meters.

**Industry 4.0**
The “Fourth Industrial Revolution”, which is based on digitisation. (The First was steam- and water-powered; the Second was electricity, the Third was computers and automation.)

**Smart factory**
‘Cyber-physical systems’, in which real objects and virtual processes are interlinked.

(Source: the High Speed Sustainable Manufacturing Institute)
When planning the specification and layout of pallet racking, there is huge scope for bad decisions which will limit your warehouse operation’s productivity. To help Eureka readers avoid this, Mark Nicholson has asked a storage systems expert to point out some of the most common errors.

As Project Sales Director for UK-based warehouse solution specialist SEC Storage, Gary Kirk regularly advises on existing or planned pallet racking layouts. The following ten tips summarise his advice on mistakes which he sees repeated time after time.

**TEN TOP RACKING TIPS**
**TEN TOP RACKING TIPS**

1. **ALLOW FOR OVERHANGS**
   - “Standard beam lengths can be reduced a little and lean,” says Gary.

2. **MATCH YOUR RACKING WITH YOUR CARTS**
   - Occasionally we see aisles which are too narrow for the lift truck. Commonly, this aisle is too wide – which means the warehouse space is being used inefficiently. “You should get your forklift truck and racking supplier together to tailor a solution that fits your business. It’s also worth building a bit of extra capacity into your racking plan, to allow for company growth. If your existing racking was inefficient, it may lead to a disastrous collapse. This is especially common when buying used systems and it’s a waste of money.”

3. **DON’T OVER-OR UNDER-SPECIFY**
   - “If the lift truck operators don’t know how much weight can be safely loaded onto the racking, they may exceed the limit. Clear load notices should be placed throughout the warehouse.”

4. **MAKE LOAD LIMITS CLEAR**
   - “When lifting goods out of racking from floor level in a reach truck environment, remember that you will need twice as the amount of space above the pallet. This is so the pallet load can be raised and over the truck’s reach leg without hitting the beam above.”

5. **RAISE YOUR LOWEST BEAM**
   - “For systems where lift trucks interact more closely with the racking, such as drive-in and double-deep racking, think about extra driver training and ex overloading protection.”

6. **TRAIN AND PROTECT**
   - “If the lift truck operators don’t know how much weight can be safely loaded onto the racking, they may exceed the limit. Clear load notices should be placed throughout the warehouse.”

7. **RAISE YOUR LOWEST BEAM**
   - “For systems where lift trucks interact more closely with the racking, such as drive-in and double-deep racking, think about extra driver training and ex overloading protection.”

8. **USE YOUR BUILDING’S LENGTH**
   - “Before thinking of extending your warehouse to increase its floor space, or even moving to larger premises, make sure you are fully utilising the cube, or vertical space.”

9. **BUILDING’S HEIGHT**
   - “If your existing racking doesn’t reach to the ceiling, it’s important to use your building dimensions wisely, but that adds significantly to the cost. If necessary, you can break up long rows with cross-aisles and operation.”

10. **LEAVE SPACE FOR RECEIVING AND SHIPPING**
    - “Activities in the receiving area need plenty of space if they are to be carried out efficiently. Any inefficiencies or errors will affect the whole warehouse operation, causing bottlenecks. Make sure shipping and receiving areas are well separated, to prevent this.”

**Trucks must be able to reach into the racking’s full depth and lift to the top level.**

**SEC Storage**

We hope these tips will get you thinking, but you should always ask a racking specialist to carry out a warehouse storage appraisal before making changes.

**SEC Storage**

www.sec-storage.co.uk

- will do this free of charge and there are many other experts throughout Europe who will be happy to advise.

**Article feedback is welcome:** editor@eurekapub.eu
Efficient parts supply is essential to keeping lift trucks in action and maximising productivity. With guidance from a parts specialist, Gian Schiava finds out what it involves and how it helps the customer.

**THE BIG MACHINE BEHIND THE SMALL PARTS**

Machine uptime is a primary requirement in modern materials handling. Lift truck suppliers understand that necessity very well, which is why they offer customers tailor-made warranty and maintenance programmes. Eureka has written several times previously on fleet management and similar topics, but this time we would like to focus on another vital support activity: getting the right part to the right place.

To discover the world of the parts business, Gian drives to the European headquarters of Cat® Lift Trucks in Almelo, the Netherlands, to meet up with Arno Layten, General Manager Parts. Arno has extensive experience in the lift truck industry, but also in sectors like automotive and logistics. In addition, he has had the opportunity to work both in sales and service management, and therefore understands both worlds.

We are particularly interested in what it takes to support dealers across Europe, the Middle East, CIS and Africa, and to help them deliver the legendary Cat Lift Trucks back up.

### PARTS FULFILMENT

Arno opens with a clear statement: “Parts is all about availability, then quality, and finally price.” However, there are so many suppliers out there (also online) and unfortunately this fierce competition often shifts the focus to pricing. Despite that pressure, we prioritise machine uptime, and the most important way of achieving that is by making sure the parts availability is market-leading.”

In fact, the Cat Lift Trucks distribution centre at Puurs (in Belgium, near Antwerp) has an impressive pedigree in this respect. It delivers a 97% parts availability, and this becomes almost incredible when you understand the criteria are ‘full line, first pick’.

This means that even if an order contains 37 parts in various quantities, and only one item is missing in stock, this would be marked by the manufacturer as a failure. Even if that one item is certain to arrive the next day.

In short, the facility delivers practically every order. The building has around 10,000 m² of storage space and the stock consists of 95,000 SKUs (stock keeping units). As you may expect, the facility works to the highest safety standards and the employees are continuously trained.

Being close to the ports of Antwerp and Rotterdam, and various airports, it is no surprise that Puurs (in Belgium, near Antwerp) has an impressive pedigree in this respect. It delivers a 97% parts availability, and this becomes almost incredible when you understand the criteria are ‘full line, first pick’.

As Cat Lift Trucks is a global brand, it has been decided to integrate the parts operation into a global system. The integration will be finalised this year and will result in even better performance. All dealers have online access to the Global Dealer Net portal, through which all parts distribution centres in the USA, Europe, Singapore and Japan are connected.

### THE REAL DEAL: GENUINE PARTS

There’s another ‘part’ of the story Arno would like to emphasise: “Do not underestimate the importance of genuine parts. After all, the whole lift truck has been designed to work and wear as a complete system. They were picked for their longevity and quality. By continuously adding or using other parts during the truck’s life, performance can be affected negatively. Or even worse, it may lead to unexpected failures.

“Obviously, we train our dealers’ engineers to deliver only the best service and we understand the temptation to use cheaper parts. But those parts may break down sooner, or they may just fit slightly less well. In the end, it can only hurt the customer’s business, and that is why we take no risks.”

### MODERN TOOLS AND MARKET TRENDS

High parts availability depends not only on advanced warehouse management and logistics but on supporting dealers at the receiving and to ensure timely delivery. Cat Lift Trucks grants access to various ordering portals, but these are also packed with information. Arno continues: “In order to give full insight, our Global Dealer Net portal also contains support manuals, schemes, instructions and complete part lists for every truck model we produce. Even information on old models is available.

“Everything is there for dealers to run their own parts operations properly and to determine how they can keep a low inventory. From that point of view, we also help them in saving costs without compromising on quality or speed.”

Support can always be improved, and today Arno gives Eureka some great news. “We have decided to extend our supply beyond our dealers or importers. As they often work with smaller, more local forklift dealers, we will be introducing something called ‘nGauge’. This is a special customisable platform which facilitates and speeds up the delivery process for both dealer and sub-dealer by giving the latter access to our international ordering systems. In fact, we are also able to deliver parts from other brands, as customers often tend to have mixed fleets. By doing that, we enable our dealers to become full-service providers.”

Of course, the expertise is available offline as well. Cat Lift Trucks also provides local training, marketing assistance and advice on how to design maintenance programmes.

When we ask about trends in the lift truck aftermarket, Arno sees two clear developments.

“First, due to an increased focus on the ‘circular economy’, it turns out that it’s profitable to refurbish machinery for a ‘second life’. We supply parts to many countries where customers are served with refurbished machines. By using genuine parts, the dealer is able to offer the customer a quality alternative to a new machine.

“The second trend is the increased importance of information. IoT (Internet of Things) and telematics solutions will be key to managing your operation and reducing costs.”

Arno concludes: “I started by saying parts availability is key in our business. But let me conclude by saying that we work hard every day to help our dealers to deliver maximum uptime for their customers. That’s the real goal.”

Next time you receive a lift truck part, you’ll know how many people have been involved in getting it to you so fast!”

Article feedback is welcome: editor@eurekapub.eu
Now that the first implementers of the new global H&S standard, ISO 45001, have moved through the process, Gay Sutton takes a closer look. What is involved, how do you go about it… and how does it benefit your business?

Companies implementing the global quality management system standard ISO 9001, or the environmental management system standard ISO 14001, will be aware of the enormous ongoing benefits accredited certification can deliver. There are advantages to be gained internally, in terms of management improvements and productivity gains, and externally, in corporate reputation and supply chain competitiveness. Now it is the turn of occupational health and safety, for which international standard ISO 45001 was published on 12th March 2018.

**OVERVIEW**

“ISO 45001 provides a framework and tool for organisations to follow to implement effective health and safety,” says Kate Field, Global Product Champion for Health and Safety at business improvement company BSI. “The focus is very much on prevention of injuries and ill-health, and encouraging, the provision of a healthy workplace. So, it goes beyond mere safety compliance and looks more holistically at what makes a happy and healthy workforce.”

Companies operating in Europe, of course, already have rigorous H&S regulations to comply with and are well aware of the benefits of imposing H&S in the workplace: “But those improvements then tend to plateau out,” Kate explains. “By following the ISO 45001 framework, organisations move to the next level. "Legislation is the minimum requirement needed to keep people safe and healthy. ISO 45001 is about best practice and provides a robust framework that can be consistently applied. Not only can it reduce the occurrence of accidents and incidents, but it also reduces things like sickness absence rates. There is also good evidence to show that where organisations get it right, it improves recruitment and retention, and results in a more loyal and productive workforce.”

**LEADERSHIP AND CULTURE:** The standard has a strong focus on the role of top management in driving occupational health and safety improvement. “And that’s around creating a culture that supports positive occupational health and safety. So, it needs much stronger ownership by top management.”

**DESIGN:** Another interesting facet of ISO 45001 is its focus on prevention, particularly at the design stage. “This ensures that the proactive identification of hazards and risks begins at the conceptual design stage, and this can be in the design of the workplace facility, the product or the organisation. If you can design hazards out, then you make your life easier.”

**WORKER PARTICIPATION:** Across Europe, EU H&S regulations ensure that companies have mechanisms in place for worker consultation and participation. ISO 45001 takes that a step further and recognises that good engagement by the workforce brings measurable H&S benefits as well as improvements in quality and output. The new standard identifies some very specific areas where workers at all levels from the shop floor to senior management must be consulted, and then participate in the decision making.

**SUPPLY CHAIN:** This focuses on understanding the risks and hazards that can be introduced by the supply chain, and how to manage them. It therefore covers all aspects of interaction with suppliers and contractors, from the materials and products they use to their presence and behaviour on site. 

**FLEXIBILITY AND SCALABILITY**

For companies considering adopting the standard, Kate has some interesting advice. “The main thing is not to be scared by it. Many of the elements will already be in place, such as risk assessments and mechanisms for talking and engaging with the workforce.

"ISO 45001 is an outcome-based management system and is designed to be proportionate to the size and nature of the business. So a small business won’t need to create a complex, bureaucratic, paper-based system. The organisation can also decide on the scope of the management system; you can choose to apply it to a particular site or a particular activity-based area of business. It’s designed to fit your needs and help you best manage occupational health and safety.”

Already the first implementers have moved through the process. So now that it is settling in, what does it entail and what are the benefits?

**KEY ELEMENTS**

To move from a state of regulatory compliance to ISO 45001 compliance, Kate explains that there are five broad areas to focus on: leadership, culture, design, worker participation and consultation, and the supply chain.

To the next level

Kate Field, Global Product Champion at BSI.

Kate has over 18 years’ experience in OHS, covering most industry sectors. She started her career with HSE (Health and Safety Executive) in the UK, before moving into various industries and then into consultancy work.

An experienced trainer and qualified lecturer, Kate joined BSI as Head of Information and Intelligence at the Institute of Occupational Safety and Health. She is now BSI’s Global Product Champion for Health and Safety, supporting the delivery of excellence and expertise across 193 countries.
ISO 45001 provides a framework and tool for organisations to follow to implement effective health and safety.
So, if you are looking for choice, flexibility and value...

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