

# eureka

Issue 26

Spring  
2016

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THE MAGAZINE FOR THE MATERIALS HANDLING PROFESSIONAL

## Disaster relief

*Warehousing and logistics  
– making the difference  
between life and death*



## A priceless asset

*How to build, manage and  
protect your reputation*



## Energy options

*Why diesel trucks are here to stay*



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# eureka issue 26

The magazine for the materials handling professional

Welcome to the latest edition of **eureka**, in which our articles focus on the health of your business, our environment and people in need.

We begin by looking at how Médecins Sans Frontières is equipped to respond rapidly to disasters and emergencies around the world, bringing urgent medical aid to those affected by earthquakes, typhoons, floods, disease outbreaks and conflicts. **Gay Sutton** discovers a well-oiled logistics and warehousing machine, ever ready to swing into action.

The well-being of a company can very quickly diminish if its reputation, or that of its brands, is tarnished. **Ruari McCallion** stresses the need to manage and protect reputations, and gives some top tips for minimising damage when a crisis arises.

As legislation and public demand for a healthier environment grow, some might feel that diesel-engined forklifts are destined eventually to be replaced entirely by electrics. **Mark Nicholson** argues that diesel fuel will always have an important part to play in powering industry, thanks to its advantages over other energy sources, and he reports on progress in lowering emissions.

One popular route to increasing the strength and vitality of a business is through consolidation of companies. While this can be a quick way to grow in size, reach and market share, **Ruari McCallion** warns that not all commercial 'marriages' are successful and advises on how to recognise a merger or acquisition that will work.

Please let us know your opinions on **eureka**, and suggest further topics for articles, by emailing [comment@eurekapub.eu](mailto:comment@eurekapub.eu) or messaging via our website [www.eurekapub.eu](http://www.eurekapub.eu).



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Commissioning Editor

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**eureka's** commissioning editor is **Monica Escutia**, a Bachelor of Communications – Journalism. She is a Spanish national and fluent also in Dutch, English and Italian. Having previously edited a variety of international media she has spent the last 13 years in the materials handling industry – the first four as a parts sales representative for several European countries, before becoming the EAME Manager Marketing Communications for Cat Lift Trucks, based in the Netherlands.

Don't forget to visit the **eureka** website [www.eurekapub.eu](http://www.eurekapub.eu) where you have access to the archive of useful articles and features. You can also post comments and suggestions about the magazine and future articles you'd like to see covered.



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4-7

**Emergency logistics**  
**Masters of immediate response**

Efficient logistics and warehousing become a matter of life and death when a natural disaster or other humanitarian emergency strikes. Gay Sutton talks to Médecins Sans Frontières about how forty years' experience has honed its operation to enable instant action in bringing medical staff, equipment and supplies to those in need.



8-10

**Reputation management**  
**Look after the name**

It's hard to put a precise value on the reputation of a brand or a business, but the cost of allowing yours to become tarnished can be enormous. Ruari McCallion considers what is needed to build, manage and protect reputations, and offers tips on managing reputational crises.



11-13

**Cleaning up combustion**  
**Does diesel have a future**

You may be forgiven for thinking that diesel power is heading for extinction, as the popularity of electric lift trucks continues to rise. This is not so, says Mark Nicholson, who explains why diesel's inherent advantages – together with progress in reducing emissions – are essential to industry's long-term energy mix.



14-15

**Mergers and acquisitions**  
**The road to growth?**

Although often the favoured approach to expanding a business and increasing its market share, not all mergers and acquisitions result in a 'commercial marriage made in heaven'. The potentials and pitfalls of consolidation are examined by Ruari McCallion, who advises on key factors determining success or failure.

## Events Calendar

Date, Event, Location, Website	Overview
22 - 25 March 2016 <b>INTRALOGISTICS EUROPE</b> Paris Nord Villepinte, Paris, France <a href="http://www.intralogsitics-europe.com">www.intralogsitics-europe.com</a>	Every year, <i>Intralogsitics Europe</i> consolidates its strategic position among manufacturers and distributors, giving pride of place to innovations that subsequently become standards. Exhibitors return, encouraged by the sales results. The rise of multichannel and new requirements from the SME sector is driving the growth of the market. Logistics providers also are investing. Elsewhere, the need to modernise warehouses, improve productivity and optimise processes is a constant factor. <i>Intralogsitics Europe 2016</i> offers an essential development solution by emphasising its vertical penetration into the most interesting sectors (e-commerce, retail, food processing, FMCG, pharmaceuticals/healthcare, spare parts etc) and putting you in touch with specialists in property development and warehouse and hub construction.
11 - 17 April 2016 <b>BAUMA 2016</b> Messe Munich, Messegelände, Munich, Germany <a href="http://www.bauma.de">www.bauma.de</a>	<i>Bauma 16</i> is a global driving force behind innovations, an engine for success and a marketplace. It is the only trade fair in the world that brings together the industry for construction machinery in its entire breadth and depth. This platform presents the highest concentration of innovations – making your visit an event to remember.
31 May - 3 June 2016 <b>CeMAT 2016</b> Messegelände, Hannover, Germany <a href="http://www.cemat.de">www.cemat.de</a>	Smart Supply Chain Solutions is the keynote theme at <i>CeMAT 2016</i> . As the world's most important event for the industry, <i>CeMAT</i> provides the perfect stage for numerous international manufacturers to showcase their innovative ideas. Once again, Hannover will be hosting the world's leading trade fair for intralogsitics and supply chain management in 2016. As an engine for innovation, <i>CeMAT</i> brings together market leaders, small and medium-sized enterprises, top decision-makers and experts in the field.

"It was Archimedes who observed that the power of levers could be used to move the entire world." This publication is named after his famous exclamation of 'eureka!', literally, 'I've found it.'



# Masters of immediate response

**Gay Sutton** goes behind the scenes at Médecins Sans Frontières and finds out from Stefaan Philips, Site Director, MSF Supply, how the organisation has honed its warehousing and supply chain processes to respond quickly to emergencies in some of the most inhospitable locations around the globe.

**W**hen a natural disaster or humanitarian emergency strikes anywhere in the world, the first international relief organisation on the ground during the critical early moments is very often Médecins Sans Frontières (MSF). Behind the scenes there is a well-oiled logistics and warehousing machine that swings into action to get medical staff, equipment and supplies to the needy as quickly as possible.

The challenge is that emergencies are exactly that: urgent situations that require an instantaneous response. The vast majority can't be predicted or tied down and conditions on the ground are often extremely difficult. In recent years, the organisation has responded to earthquakes in Haiti and Nepal, floods in Pakistan, the Ebola outbreak in West Africa, the typhoon in the Philippines, refugee influxes, and conflicts in many locations.

At the heart of MSF's ability to respond lies an efficient, well-organised and intelligently stocked global logistics and warehousing operation.



## An overview of warehousing

MSF's supply chain operates on two levels. For ongoing projects – missions located all around the world where medical help is being provided day in, day out – each region or country has its own warehouse stocked for the project's requirements. Each also holds a certain amount of emergency stock for situations that might occur such as an outbreak of cholera, but if an emergency escalates then these stocks can rapidly be exhausted. Supporting this is a powerful global logistics and supply chain organisation, MSF Global Supply, which is powered by an ERP system that includes a strong warehouse management module. The Global Supply division not only provides regular supplies to the missions, but is what Stefaan Philips called e-prepared – ready to respond immediately to major emergencies.

Based at the supply headquarters in Brussels, Stefaan is in charge of MSF Global Supply, which is literally the backbone of the organisation. "Our main warehouses use forecasting, order planning, transport planning etc. for our regular programmes which account for 60 to 70 per cent of our activity. But the warehouses also stock emergency supplies and these are reserved for, and only ever made available to, emergencies."

## The secret is in the planning

MSF has developed a highly efficient approach to preparing for emergencies, and this is now being replicated by other relief organisations. Pre-packed emergency kits have been designed for a whole range of emergency and disaster scenarios. The majority are assembled in the international warehouses in Bordeaux and Brussels, and are held in stock there as well as at the missions where they're likely to be required.

Each is for a specific emergency scenario and contains the appropriate medical supplies and items needed for treating a defined number of people for a fixed period of time. Some are also designed to provide practical necessities such as water treatment stations, shelters, inflatable hospitals, transport vehicles and autoclaves. Many also include vital information on emergency management. "The scenarios are larger than just a list of equipment," Philips explained. "The scenarios even specify the profile of human resources you will need for the emergency." All of this increases the efficiency and speed with which MSF can respond.

All e-kits are continuously monitored via the warehouse management system, and when any components approach six months of their shelf life, the kit is unpacked and the older components replaced with new ones.

The range of scenarios they cater for is comprehensive. Ebola, for example, is a haemorrhagic fever – as is Lhasa Fever. When the Ebola outbreak took hold in sub-Saharan Africa MSF already held haemorrhagic fever kits in Democratic Republic of Congo (DRC) and Uganda, and further emergency kits in the European supply centres, each providing a 20-bed treatment centre for two weeks. "In normal circumstances a 20-bed treatment centre would quarantine an outbreak and get it under control. We knew this from previous outbreaks in Uganda and DRC," Stefaan explained. However, systems are never set in stone, and MSF is quick to respond to changing situations. "After a few weeks we recognised this outbreak was not the same. So we shifted our strategy and passed on a supply of loose items as the volumes required were unprecedented."

**"For every item in the catalogue we have at least three different suppliers so we can accelerate supplies when we need to."**

## Managing the supply chain

Managing the supply chain so that deliveries can increase significantly when an emergency escalates into a disaster of this magnitude is also a slick process. "We use multi-vendor management," Stefaan explained. "For every item in the catalogue we have at least three different suppliers – either →



Visit:  
MSF website

1. Cargo for the Philippines, Ostend Airport, Belgium. Cargo includes medical kits, material for medical consultations, tetanus vaccines, water and sanitation equipment, and relief items such as tents and hygiene kits. Image copyright: Bruno De Cock / MSF

2. Inside the tented supply warehouse of the MSF hospital in Guiuan, the Philippines. Image copyright: P K Lee / MSF

distributors or manufacturers - so we can accelerate supplies when we need to. And on occasions where MSF gets the feeling that a situation might escalate, we can overshoot the quantities and volumes at the start to create a buffer on site, and to give the supply chain some time to gear up. We know it's a risk, but it's a measured risk. At the end of the crisis we can reverse logistics if we need to and take back stocks that are no longer needed in the field."

One important aspect of supply chain purchasing, after the initial disaster response, is to reduce the length of the supply chain and procure locally where possible. Following the typhoon in the Philippines, for example, once the local market began to function properly again, logistics staff were flown in to synchronise local, regional and international supplies. A considerable amount of purchasing was done in Manila which had access to many of the supplies MSF needed.



4

3. The MSF supply warehouse in Brussels.  
Image copyright: Ikram N'gadi

4. MSF staff collecting a suspected Ebola patient from the ambulance.  
Image copyright: Anna Surinyach

5. Distributing non-food items by boat around Panay island, Philippines.  
Image copyright: Laurence Hoening / MSF

6. A medical team doing the rounds in the high-risk area, the Ebola treatment centre in Kailahun, Sierra Leone.  
Image copyright: Sylvain Cherkagui / Cosmash

The organisation works closely with a wide range of contractors and the military, but also has all manner of transport options ready and waiting in its warehouse.

**FUNDING**

Money is collected worldwide through personal donations and fundraising schemes, then pooled to fund actions across the globe. Over 87 per cent of funds go directly to field projects, just 3 per cent is spent on admin and staff, and the rest goes into fundraising. Of the global income, 25 per cent of funds are retained as cash, so that the organisation can respond appropriately and quickly to emergencies.

**SUPPLY INFRASTRUCTURE**

There are two major international warehouse facilities in Europe: at Brussels and Bordeaux. There is also a consolidation platform in Amsterdam largely for Dutch projects. A large international warehouse is located in Dubai, and holds enough emergency stocks of non-food items (NFI) for 10,000 families. These are distributed around the world purely for emergencies, and include items such as tents and hygiene kits, blankets etc. MSF is currently working in countries around the globe supplied by approximately 250 local warehouses (numbers are constantly fluctuating). Nairobi, for example, is MSF's entry point into East Africa and has 1,300m2 of warehousing space. Kinshasa in DRC has 1,500m2 of warehousing. Kabul in Afghanistan has 1,200m2 and so on. They enable the missions to respond to local emergencies. In Haiti, for example, MSF staff were treating the injured within three minutes of the earthquake.



5

**Responding to a major disaster**

When a major disaster or catastrophe strikes in a location that has no existing MSF mission, clearly defined protocols fall into place, and this ensures a speedy response. One of several specialist exploration teams, always on standby around the world, is immediately flown in to assess the situation. Experts in logistics, medicine and management, they hit the ground running – assessing the nature and extent of the emergency and the materials and personnel MSF should despatch. They then send a detailed proposal back to head office. "In an emergency the decision lines are very short and can take just a few phone calls," Stefaan said. "Our ability to respond so quickly is closely linked to the fact that MSF is independent."

By this, he means that there are no outside funding agencies with the power to influence or slow down the decision-making process. Over 90 per cent of MSF's money comes from individual independent donors (see box), most of whom give small amounts of money, freeing the organisation to make decisions based on the situation on the ground.

**Pulling out all the stops**

As soon as a project is approved the supply chain is activated. The logistics teams on the ground and at head office get to work organising material resources and funding, assessing routes into the emergency area, and chartering planes to fly the cargo in.

On the ground, warehousing space along with materials handling and manpower have to be ready for the first deliveries which usually arrive within 24 hours of the alert. A suitable space has to be identified or created for the location of the medical treatment centre and staff accommodation. This could mean using existing local accommodation and equipment or flying in tents and inflatable hospitals.

In parallel with this, negotiations are made with the country's government to obtain permission to bring goods into the country and fly in the doctors and nurses – a task that is far easier in an emergency than in a mission situation.

Where MSF already has a mission, of course, the organisation, staff, regular supplies and a range of emergency kits are already on the ground and timescales are much shorter. When the earthquake struck Haiti in 2010, for example, nurses and doctors were deployed and providing medical within three minutes. The logistics teams were also in situ, and instantly began assessing needs and stepping up supplies to cope with the extent and nature of the disaster.

**The last half mile**

One of the inevitable results of a major emergency or natural disaster is the sheer chaos and congestion on the ground and in the air as aid organisations mobilise to fly goods and personnel in, at a time when the local infrastructure has often been devastated. "This is when we have to be creative. And it's the last mile or so that is often the issue," Stefaan said, "not the logistics."

In the Philippines it was only possible to take medical assistance and supplies to the many islands by boat, while after the Nepal earthquake communities in high altitude areas could only be reached by helicopter. In Haiti MSF flew supplies to Santo Domingo and then trucked them up to Port-au-Prince.

The organisation works closely with a wide range of contractors and the military, but also has all manner of transport options ready and waiting in its warehouse. "We stock many transport vehicles. For example we have a fleet of 4x4 hardtop pickups we can fly out to where they're needed. We have boats for areas that are only reachable by water, and even a small Zodiac kit which is an eight-person intervention boat that can be used as an ambulance, and can carry people and goods."

There are countries like Syria where MSF is simply not permitted to operate. For an organisation whose ethos is to help the suffering wherever they may be it can be a difficult

waiting game as its staff watch from the borders and wait for the refugees to arrive.

**Conclusion**

**After forty four years of responding to emergencies and disasters MSF has honed its operation to react extremely quickly and efficiently. For the human victim of disaster, hours can make the difference between life and death, a return to health or lifelong disablement, and it's the logistics and supply chain function – the organisation's backbone – that enables this rapid response to take place. ■**

Article feedback is welcome: [editor@eurekapub.eu](mailto:editor@eurekapub.eu)



6

Reputations and brand names are valuable but they can become tarnished in a moment.

**Ruari McCallion** reports on how to put structures in place to build, manage and protect a business' good name.

Reputation is a difficult asset to value. People know it is worth something – especially the salesforce! A good reputation makes it easier to do business. It will have a positive impact on share price, in the case of a public company, and on the ease with which finance can be raised, from banks, the stockmarket or other sources. Credit terms, supplier confidence and partner collaboration all run more smoothly when a business is viewed in a good light. So, how much is it worth? As no accountant has yet come up with a way of putting reputation on a balance sheet it could be the very definition of 'priceless'. How do you build it and how do you look after it?

It is vitally important that any company puts in place a set of standards and procedures to ensure that its reputation is managed effectively and professionally, during good times and bad.

When things are going well, the head of the company (MD, CEO, Chairman, Senior Partner) will be available to journalists and eager to talk about good news. In good times, the company has time to consider and design a communications campaign and to deliver it in the right way, reaching out to the connections that are expected to be the most receptive. Maybe your communications team has spent time nurturing the contacts and building the relationships. A tried, trusted and established group of specialists may have been established, both inside and out, and they will all know their roles and responsibilities. This is regardless of the size of the organisation. Even a small company can and should employ public relations professionals, on a contracted or retainer basis. If a reputation is priceless, it is worth investing a little in nurturing and protecting it.

A good reputation can take years to build but it can be destroyed in a moment. Accidents happen – and so do design faults, supplier misperformance and product contamination. The trick in handling crises is to avoid turning dramas into disasters. One way of making things massively worse is denial or attempted cover-up.

We are familiar with recalls from major auto manufacturers

and, generally, no-one other than 24-hour news channels gets too excited – with the obvious exceptions of life-threatening incidents, which can include food scares, exploding devices and anything else that would look exciting on camera.

Almost as good (as far as news media are concerned) are shots of senior personnel struggling to avoid questions or responding in a manner that makes clear that no-one is in control – because control is everything.

“No two crises are the same and so it's difficult to give a 'one-size-fits-all' solution but, in general, if you have got something wrong then it's best to take responsibility in media channels,” said Liz Cartwright, MD of Cartwright Communications, a specialist PR agency that has been handling 'hostile' media enquiries for more than a decade. “Then say sorry, and look at ways of improving your product or services in the future. If your company is not in the wrong then more careful handling of the situation is required – sometimes involving a knowledge of media law, and confidence to deal with a journalist who won't take 'no' for an answer.”

There seems to be an endless supply of examples of head-in-sand syndrome, where companies will try to pretend that nothing has happened, or it's not as bad as it is being made out to be, and they don't want to talk about it anyway. If the company doesn't talk about it, that vacuum will be filled with speculation, rumour, gossip and increasingly wild accusations. An effective crisis

management strategy will be a lot cheaper and will protect the company's reputation far better than stonewalling.

“Following any crisis, the first thing to do is gather your facts. Ensure that you have all the information, with dates, before embarking on a strategy to deal with the situation,” Liz Cartwright continued. She strongly recommended meeting journalists' deadlines, in order to avoid the 'empty chair' and 'no-one was available for comment' observations, which only serve to make things worse. If the company is in any way to blame and an apology is needed, issue one. By all means qualify it with some background on how the mistake was made, identify the lessons that can be learned for the future and what specific measures are being put in place. If your company was not at fault, then your communications team should talk to the journalist and explain why, and always expect to be 'on the record'. Follow-up is important. Also, be aware of the importance of social media; careers can be destroyed in, literally, a matter of hours. Corporations take a little longer but they, too, can be brought to their knees by a Twitter or Facebook campaign.

Not all crises are easy to manage and that's when you need experts to help you. Today's crisis may not turn out to tomorrow's fish wrapper – it could need management through recuperation and rehabilitation. When you think it's all over, work on rebuilding and repairing the damage. Protecting a good reputation is worth the effort. →

# LOOK AFTER THE NAME



1. Liz Cartwright, MD, Cartwright Communication.

“No two crises are the same and so it's difficult to give a 'one-size-fits-all' solution but, in general, if you have got something wrong then it's best to take responsibility in media channels.”



## TOP TIPS FOR CRISIS MANAGEMENT

Effective strategies are planned, structured, put in place and practised.



Have a set of approved procedures in place **AHEAD OF TIME**. This is key to responding in a timely manner and protecting the company's brand.



Promote your Crisis Plan within your business and ensure that staff are aware that reporting a problem will not attract punishment.



There will always be a core group of people that will bear the responsibility for making decisions and spearheading communication during any crisis, regardless of size and scope. Make sure they are trained, are aware of their roles and have their contact details listed somewhere centrally, which makes them easy to contact.



A crisis is no place to learn a new job. Such a situation should not be the first time a spokesperson speaks to the media. The person who will be the official 'voice' of the company should a crisis develop will depend on the situation, so invest in media training for a pool of people appropriate to your business' needs.



In any business, there are dozens — if not more — of potential crisis situations that could ruin a brand, and poor communication makes the situation even worse. The planning process should anticipate key scenarios and formulate an outline plan to deal with them. This will save precious time.

## DURING A CRISIS

- 1. RECOGNISE** – the person at source recognises a crisis has occurred and reports to management.
- 2. MOBILISE** – a Core Crisis Group. This can include HR, Legal, PR, CEO, COO, CFO etc.
- 3. REACT** – implement a communications plan as quickly as possible.
- 4. REPORT** – monitor traditional AND social media, and report back to all stakeholder groups appropriately. Resulting coverage may require adapting the communications plan.
- 5. EVALUATE** – de-brief and measure the impact. Make operational changes where necessary. ■

With thanks to Charlotte Williams, Colliers International

Article feedback is welcome: [editor@eurekapub.eu](mailto:editor@eurekapub.eu)

## Does diesel have a future?

As electric forklift trucks continue to increase their share of the materials handling market and interest in renewable energy grows, is diesel power heading towards extinction?

According to **Mark Nicholson** there is good reason to believe that diesel will always be part of the world's overall energy mix.

**F**or many applications a diesel lift truck is a better choice than a battery powered alternative, and you may be surprised to learn that in some cases diesel actually offers greater environmental sustainability than electric. →



**Clean diesel technology**

A variety of technologies are available to help manufacturers reduce emissions. They usually involve one or more of the following:

**Diesel Particulate Filters (DPF)**

These trap particles from the exhaust and burn them off.

**Turbochargers**

By using a smaller and more efficient turbocharged engine, delivering the same performance as larger, less advanced units, fuel consumption is reduced and therefore emissions are reduced too.

**Selective Catalyst Reduction (SCR)**

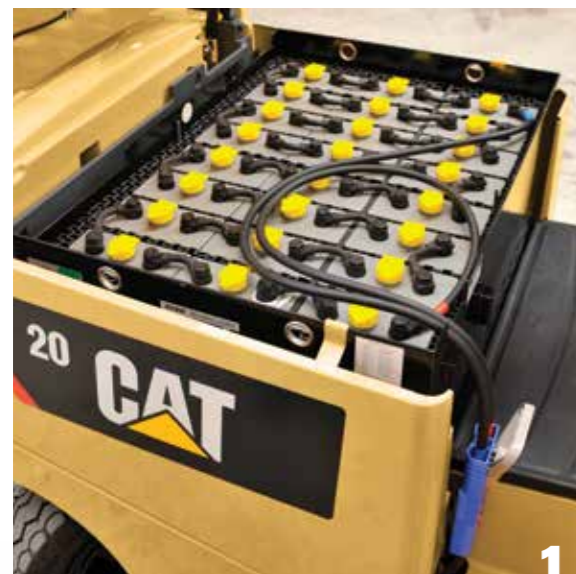
An SCR system uses a catalyst such as urea or Diesel Exhaust Fluid (DEF) to reduce NOx emissions.

**Diesel Oxidation Catalysts (DOC)**

This approach is based on an oxidation process that uses a catalyst to convert some of the emissions into water and other relatively harmless substances.

**Exhaust Gas Recirculation (EGR)**

In EGR, oxygen is diluted in the combustion chamber by mixing the intake air with cooled exhaust gas. This lowers the peak temperature of combustion, which in turn means less NOx is produced. Lowering the temperature increases the particulate content of the exhaust, which is captured by a DPF.



**Diesel advantages**

**Where electricity is not 'green'**

In an area where electricity generated by solar, wind, hydro or other renewable energy sources is not available, the total emissions resulting from use of an electric truck are greater than those from a diesel. The electric truck itself is non-polluting but you have to consider the amount of coal, gas or oil burnt to generate the electricity that charges its battery.

Bear in mind, too, that converting energy from one form into another is wasteful. When the energy in fossil fuels is converted into electrical energy, much of it is lost in the form of heat. When current electricity is converted to static electricity in the battery there are similar losses. By contrast, diesel powers an engine directly. The same arguments apply to trucks powered by hydrogen fuel cells, as electricity is needed to produce the hydrogen.

**Where long life is important**

The structure of industrial diesel engines is extremely robust and the fact that they are designed to work at low revs makes them even less vulnerable to wear. Owners can expect a diesel truck to have a long life, to require minimal maintenance and to retain a good residual value. This makes economic sense and is also good for the environment, as it reduces the amount of raw materials consumed and the necessity for waste disposal.

**The power of a diesel forklift is constantly ready to use, allowing 24/7 operation with just a few minutes of downtime if a fuel top-up is needed.**

**Where strength is a priority**

A diesel truck usually offers more powerful performance than a comparable electric truck, giving higher torque, gradeability, acceleration and lift speed. For the heaviest loads, diesel power is usually indispensable.

**Where trucks need to work non-stop**

The power of a diesel forklift is constantly ready to use, allowing 24/7 operation with just a few minutes of downtime if a fuel top-up is needed. Battery powered trucks require regular battery changes and a carefully planned recharging regime. Low battery levels can prevent electric truck operators from using high-powered attachments but a diesel truck is fully operational as long as there is even a small amount of fuel in the tank.

**Where the workplace is remote**

Think, for example, of a construction site before the mains electricity supply has been extended to reach it. Keeping an electric truck supplied with recharged batteries is difficult in those circumstances but fuel for a diesel forklift is relatively easy to transport to wherever it is needed.

**Where capital is in short supply**

Diesel trucks cost considerably less to buy than electrics, so they will remain a popular choice for any business that needs to minimise capital investment.

**Increasingly strict exhaust emission regulations... are driving manufacturers to make engines cleaner and more efficient.**

**Dealing with emissions**

The main argument against diesel relates to emissions. Burning diesel, like any other fossil fuel, produces carbon dioxide and contributes to climate change. Diesel combustion also releases particulates and other pollutants which are damaging to human health. In the UK alone, it is estimated that around 5,000 premature deaths each year are related to exhaust emissions from combustion engines. It should also be remembered that the earth does not have an endless supply of fossil fuel, so we need to conserve it.

Thankfully there is much we can do to make diesel engines emit less pollution and consume less fuel. Increasingly strict exhaust emission regulations, in the EU and the United States in particular, are driving manufacturers to make engines cleaner and more efficient.

Since 1996 the EU has been implementing new limits in a series of stages. These specify the acceptable levels of nitrogen oxides (NOx), hydrocarbons (HC), carbon monoxide (CO) and – in the case of diesel engines – particulate matter (PM) from Non-Road Mobile Machinery (NRMM). When we talk about particulate matter we refer mainly to soot particles but PM also includes oil residues. If you really want to know all the details you can look at Directive 97/68/EC and its various later amendments.

Most recently you will have seen references to the EU Stage IIIB emission regulations in forklift product literature, or the equivalent Tier 4 Interim when looking at American products. Provided you deal with responsible suppliers, such as Cat® Lift Trucks and its dealers, you need have no worries over complying with the rules. A schedule for necessary replacement of engines is in place and there is a flexibility scheme allowing for sale of existing stocks with Stage IIIA engines. Any truck bought before the introduction of Stage IIIB, or during the period of the flexibility scheme, can be legally operated without modification. ■

Article feedback is welcome: [editor@eurekapub.eu](mailto:editor@eurekapub.eu)

1. Battery power is ideal for many applications - but not all.
2. Advanced diesel technology delivers the high power you expect, but with lower fuel consumption and emissions.



Visit: [Cat Lift Trucks](#)

**The new diesel generation**

In upgrading its diesel counterbalance trucks to meet EU Stage IIIB requirements Cat Lift Trucks has focused on using fuel-efficient turbocharged engines and the latest in DPF technology.

For the popular DP40-55N 4.0 to 5.5 tonne range an innovative Perkins 4-cylinder 854F unit has been chosen. This has a capacity of 3.4 litres but delivers the kind of performance you would normally expect from a 5.0 litre engine. The result is a truck whose class-leading power density is matched with high fuel efficiency and low emissions.

Its robust, metallic DPF features passive regeneration, which means that the soot collected is burnt off while the truck is operating rather than requiring downtime. This DPF is also maintenance-free.



**Biodiesel**

Biodiesel – a renewable fuel derived from vegetable oils and sometimes from used cooking oil or animal fat – is now commonly blended with diesel in Europe. In fact diesel engines can be modified to use 100% biodiesel. As well as reducing our reliance on fossil fuels it offers a reduction in harmful exhaust emissions. In the transport sector, the EU is aiming to increase the proportion of renewables in fuel to 10% by 2020.

On the downside, growing, transporting and processing crops for biodiesel can involve heavy fuel consumption and emissions by machinery. There is also a risk of producers destroying vital food-growing areas and habitats to make space for fuel crops. Lastly, we must address the vulnerability of biodiesel to contamination (see eureka 24).

But whatever problems we face, whether in producing fuel or lowering emissions, the progress achieved to date should give us confidence that answers will be found and that diesel still has much to offer our industry.



# The road to growth?

Mergers and acquisitions have been much favoured as a means to achieve growth and increased market share and the materials handling industry has been seeing a new wave of consolidation. What factors should companies – as well as customers and investors – look for on the way to a ‘commercial marriage made in heaven’, **Ruari McCallion** asked.

The materials handling industry has been no stranger to merger and acquisition (M&A) activity; the first example appears to be the acquisition of the Bullock Electric Company by Allis-Chalmers in 1903. The industry as we know it today started to take shape in the 1980s, as the main names of the industry rose to the top. We have seen at least 28 mergers over the past 15 years and the landscape is shifting once again.

## Mutual attraction

Overall, the materials handling industry’s M&A activity has gone reasonably well. It probably helps that materials handling companies tend to have pretty clear aims and objectives, and their routes to those goals are quite well aligned even before those big get-togethers. But even common goals are no guarantee of success and the growth of global, multinational organisations makes things more difficult. Building a successful merged organisation does not happen by accident; it has to be carefully planned and rigorously implemented.

“M&A activity in the Transport and Logistics industry in recent years has been more influenced by the increasing demands of end customers and the requirement to deliver high-quality, integrated, end-to-end solutions on a global basis,” said Barry Sheehan, Associate Director at Livingstone, a corporate finance firm. “This is fuelling acquisitions of specialist providers which can improve and expand acquirers’ existing service offering. Accordingly, such providers tend to trade at higher multiples on both public and private markets. Furthermore, transport and logistics is by its nature a global industry and M&A has been an efficient vehicle for delivering international expansion strategies.” However, can mergers be veils behind which businesses conceal the decommissioning of excess capacity, in an extremely competitive and congested market?

“While M&A can help address excess capacity, the more recent trend in the market to deal with fluctuations in trading volumes has been the development of ‘non-asset’ or ‘asset light’ operating models,” Sheehan explained. “These models often involve the use of an owner-operated fleet and therefore reduce the capex levels required to maintain company-owned fleets.”

These models are more likely to be seen in end users, rather than OEMs (original equipment manufacturers), who will be in the position of providing flexible arrangements, such as leasing packages and complete service,

or ‘servitisation’ contracts. In the most extreme examples, they provide customers with ‘power by the hour’ operations – the trucks are paid for only while they are operating. Surplus capacity is transferred back to the OEM or dealer, which moves the balance of financial risk quite strongly away from the end user and towards the supplier. Companies need large financial resources if they are to be able to operate profitably in such an environment. Financial risk means that goals, objectives and operating models have to be closely aligned.

**“There is no ‘one-size-fits-all’ solution to acquisitions, but there are a few key challenges that should be considered as part of any approach; integration being number one on the list.”**

## Success is a reward, not a gift

Chris Noblet, CEO of Rivo, a risk management software company, has experience with technology and other companies including Capita and Arthur Anderson. Achieving success requires a thorough and well-designed integration plan, he maintains, in order to create revenue and cost synergies.

“There is no ‘one-size-fits-all’ solution to acquisitions, but there are a few key challenges that should be considered as part of any approach; integration being number one on the list,” said Noblet. “Make sure you have a clear plan in place as to what an acquired business will bring to your company, and exactly how it will fit into your existing business model. Ultimately, it’s those that fully consolidate all areas of their business that will be best positioned to grow and cater to customer needs.”

Paul Heugh, CEO of strategy implementation firm Skarbek Associates, argues that integration is not just about systems and operating procedures; other considerations are also crucial.

## Meeting of minds

“Cultural alignment is only fleetingly considered before a merger or acquisition, yet in a recent Deloitte survey 76% of managers rated it as either very or somewhat important in integrating two organisations,” he said. Failure to integrate culturally has been identified as a leading cause of missed synergy targets. Changed circumstances give rise to uncertainty, which can be damaging (both in the short and long term) if the process of system and business integration fails to address them. A successful merger or acquisition will ensure that uncertainty is tackled as soon as practical. Revealing the longer-term strategy to employees as early in the process as possible will help to reduce uncertainty and raise confidence. It can even be an opportunity to address issues that are already present in the merged companies and to overcome them. A large organisation can be a confusing place, and a bigger one even more so – but it does not have to be the case. What companies must do is involve and engage those employees who genuinely do understand their organisation holistically, including its processes, employees, culture and philosophy. They are a scarce resource, according to Heugh.



## Clearing the fog

Companies do not enter into relationships with the intention of failing but the objectives must be clear, including the reasons for the decision to merge. The potential outcome may be viewed differently, depending on where the observers are standing. It is often said that employees are a company’s greatest asset but shareholders are important as well, and must be kept on board – as must all stakeholders

“Assuming a thorough and well-designed integration plan is followed, this can create revenue and cost synergies – thereby increasing profitability and ultimately boosting shareholder returns,” said Sheehan. “In the longer term, real shareholder value is created when M&A activity is underpinned by a clear strategic rationale, a thorough due diligence process and a co-ordinated post-deal integration plan that ensures perceived potential is delivered upon.”

## Think differently

Heugh went on to observe that the way we consider organisations is still heavily influenced by Industrial Age thinking and a “manufacturing, process-dominated mindset”. An acquired organisation is usually considered in terms of its financials, market dynamics, organisational structure and management team – but today’s marketplace is crowded, highly contested, information-rich (but possibly lacking in understanding) and ultra-fast, and the established asset and process-based mindset could be dangerous, as it is limited.

“Any firms which address these factors effectively assume considerable strategic advantage, and it is these firms which tend to be the most successful when it comes to mergers and acquisitions,” said Heugh.

Will a merger or acquisition that impacts upon your business be successful? Time will ultimately tell. The press conferences and investor presentations will make all the right noises but it is important to listen beyond, to take note of what is said (or not said) about systems integration – IT systems are the key way of collecting and analysing data – and the blending of cultures. If a company keeps its best people, and if the representative you have come to know and have confidence in stays with it, then the signs are generally good! ■

Article feedback is welcome: [editor@eurekapub.eu](mailto:editor@eurekapub.eu)



1. Cultural alignment is an essential consideration if a merger or acquisition is to succeed.
2. Barry Sheehan, associate director at Livingstone.
3. Paul Heugh, CEO of strategy implementation firm Skarbek Associates.





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