



DHL

Delivered.

THE GLOBAL LOGISTICS MAGAZINE

ISSUE 01/2014

BUSINESS

The power of the Pacific Pumas

Meet Chile, Peru, Colombia – LATAM's rising stars

SOLUTIONS

Jeremy Rifkin's Revolutionary Ideas

Hear about the Third Industrial Revolution

VIEWPOINTS

Elon Musk on the move

Gaze into the future with Tesla's CEO

COVER STORY

GEARING UP FOR GROWTH

Aerospace is on the rise again



Dear reader,

At DHL, we welcomed the Trade Facilitation Agreement which the World Trade Association agreed upon at its recent summit in Bali. Should policies be fully implemented, global trade volumes would grow significantly due to simpler and more efficient customs procedures and regulations. This can only be good news for businesses, be they large or small.

Another headline-making event last year was the Dubai Airshow, where civil aviation history was made with record-breaking sales of passenger aircraft. In our “Focus” story we explore the upward trends in aviation and the logistics solutions required to support the industry in what looks like bullish years ahead.

We have the pleasure of introducing two quite distinct and distinguished personalities, Jeremy Rifkin and Elon Musk. One a thought leader who advises global CEOs, governments, and the European Parliament; the other an innovator, inventor, and CEO of Tesla Motors and SpaceX. What unites them is a firm view that sustainability is one of the key issues that needs to be addressed by humankind.

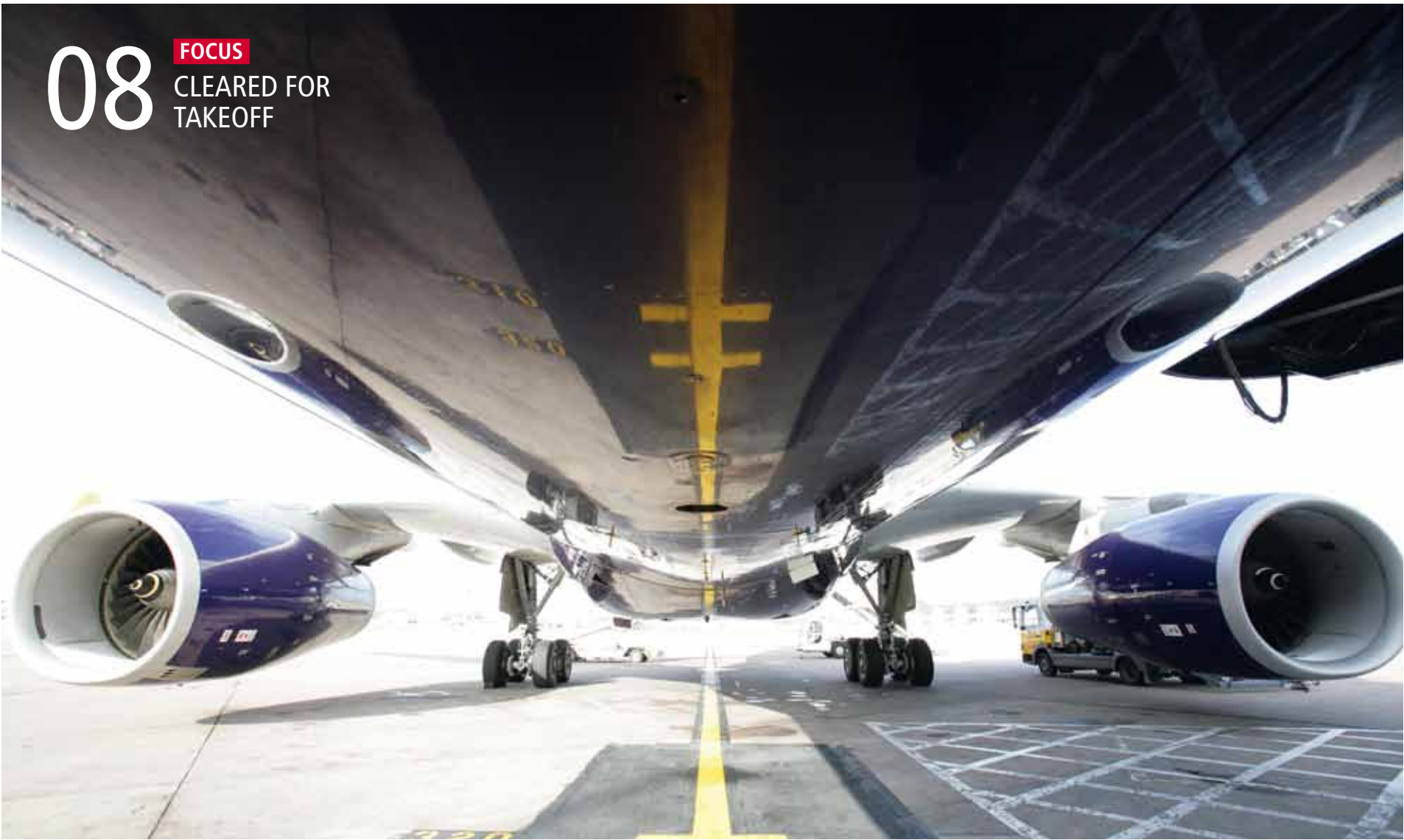
Finally, I am proud to say that *Delivered.* celebrates its first birthday this month. Please look out for the special birthday card in the print issue and on delivered.dhl.com/birthday, where you’ll see some gifts we’d like to share with you.

If you have feedback or topic suggestions for future issues of the magazine, please feel free to contact me directly:
bill.meahl@dhl.com

Sincerely,

Bill Meahl

Bill Meahl
Chief Commercial Officer, DHL



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Cover photo: Thierry Dosogne/Getty Images
Photos on this page: DHL (2), Rolls-Royce, Andrea Pistoletti, Reto Klar



The icons to the left indicate additional online resources. To get more information or view a video, type the link into your browser or scan the QR code.



New look
Optimized features

We have made a number of changes to make *Delivered.*’s online presence more interesting and easier to use. New features include:

- Optimization for tablets
- Easier to find specialist topics
- Enhanced sector content



Visit delivered.dhl.com!

NEWS

Leipzig hub to double capacity

This major investment in DHL's express infrastructure will strengthen the network's backbone.

The new 40,000m² warehouse will double the hub's operational footprint, with a total size equivalent to eleven soccer pitches.

With an additional \$200 million investment in its facilities in Leipzig, Germany, planned for 2014-15, DHL Express is set to double the operational footprint of its principal European hub.

Work began in December 2013 on the new 44,000-square-meter expansion, which will incorporate an additional warehouse as well as sorting and office facilities. The installation of a new shipment sorting system will have the effect of increasing the hub's processing capacity by some 50%. This means that it will be possible to process more than 150,000

50%

increase in the hub's processing capacity will be achieved with the current expansion.

Learn more about the Leipzig hub at:

tinyurl.com/DHL-Leipzig-Hub

shipments per hour by the time that the new facilities become operational in the fourth quarter of 2014. The Leipzig hub is a critical part of the express infrastructure, and its expansion is considered vital to supporting the future growth requirements of DHL's customers trading both in Europe and around the world. In line with the company's commitment to its GoGreen program and the reduction of both energy consumption and energy-related emissions, the new buildings at the Leipzig hub have been designed to incorporate green technologies.

NEW FASHIONS IN DELIVERY

The continued rise of "fast fashion" keeps shrinking lead times between runway debuts and consumer demand for the latest designs, putting manufacturers under increasing time pressure to deliver. In the era of online retail and mobile devices, the tech savvy customers of the fashion industry generate unpredictable 24/7 demand. Having a supply chain just as sophisticated as this customer base is a must for retailers today. Decision makers from some of the industry's leading retailers and fashion houses – including Debenhams, Levi Strauss and Co., and Tom Tailor – recently got together to discuss these trends and their impact on current supply chain dynamics at a European fashion forum. The results of these discussions were captured in a white paper, *Fashion*



Unleashed: the agile fashion supply chain. The paper details strategies for addressing the new complexity of shortened product life cycles, fragmented sales channels, and escalated service demands.

The aim is responsiveness, agility, and flexibility within an optimally managed cost structure. Best practice fashion supply chains are migrating toward a new model in which participants operate as an interconnected web of trading partners, all aligned to deliver what the customer wants, regardless of channel or product category.



Download the white paper at:

tinyurl.com/DHL-fashionagility

DHL'S PARCELCOPTER HAS HAD ITS FIRST TEST FLIGHT. CURRENTLY THERE ARE NO PLANS TO OPERATE DRONES, BUT FUTURE USE COULD INCLUDE EMERGENCY MEDICAL SHIPMENTS TO REMOTE AREAS.



LOGISTIC'S DAILY NEWSCAST



NEWSROOM: An up-to-date research tool for anyone interested in logistics.

For news, trends, and opinions on topics driving the logistics industry, turn to www.logistics-newsroom.com. A daily round-up from blogs, media outlets, and social media, the site offers up-to-date content and broad insights into everything from RFID to e-commerce and city logistics.

Learn more at:

tinyurl.com/DHL-newsroom

THE STORY

DHL KICKS OFF FOR RUGBY WORLD CUP



Building on success at the Rugby World Cup 2011, DHL has once again signed up as Official Logistics Partner for the sport's pinnacle event. The Rugby World Cup is one of the world's largest sporting events, surpassed only by the Olympics and FIFA World Cup. Every four years, teams from 20 countries compete to win the Webb Ellis Cup. The current title-holder is New Zealand.

The next Rugby World Cup will be in England in 2015, with DHL once more handling event logistics. This follows a successful partnership in New Zealand in 2011 that saw the company, as Official Logistics Partner, transporting some 800 tons of team equipment from competing nations around the globe to venues across the country.

In England, the six-week tournament's 48 games will be held at 13 different venues, from northerly Newcastle to Brighton on the south coast. The final is on October 31 at London's Twickenham Stadium, the world's largest rugby venue.

The tournament will not begin until September 18, 2015, but logistics work has already kicked off. In November, DHL transported the Webb Ellis Cup from New Zealand to the IRB World Rugby Conference in Ireland by way of Australia, South Africa, and England – the other previous winners of the trophy.

Follow DHL's work in rugby on Twitter at @DHL_Rugby and #DHLRugby

[facebook.com/DHLRugby](https://www.facebook.com/DHLRugby)



FIGHTING THE FREEZE
Every winter, DHL teams across the globe get ready to deal with snow, ice, and extreme cold. At hubs, aircraft arrive every five minutes throughout the night and need to be quickly de-iced to operate safely at -20 degrees Celsius (-4 degrees Fahrenheit). At the Leipzig hub a fleet of 23 de-icing vehicles is on constant call while at the Cincinnati hub planes are de-iced at the gate to ensure safe landings and take-offs in the most difficult weather conditions.

MAY
13-15

Now in its fourth year, the **DHL Global Technology Conference** offers a platform for knowledge sharing and networking among key decision makers and industry experts: tinyurl.com/DHLtech

JUNE
11-12

DHL's 14th Life Sciences & Healthcare Global Conference in Shanghai on June 11-12, 2014 – engage with LSH industry peers, leading suppliers and DHL experts. Register here: tinyurl.com/DHL-lshc2014

CAMPAIGN TO COMBAT COUNTERFEIT MEDICINES

Fake medicines are a growing threat to public health, tricking patients into believing they are receiving genuine treatment and putting their lives at risk. The campaign Fight the Fakes is a combined effort of the global health community, representing healthcare professionals, disease-specific organizations, product-development partnerships, foundations, and the pharmaceutical industry. Coordinated actions from all involved in the manufacturing and distribution of medicines are vital.

Learn more at:

fightthefakes.org

FIGHT THE FAKES
SPEAK UP ABOUT FAKE MEDICINES

RATING UPGRADE: STRAIGHT As FOR DHL

The latest ratings from Morgan Stanley Capital International (MSCI), a supplier of stock market indices and portfolio analytics, have upgraded Deutsche Post DHL from AA to AAA in recognition of the company's environmental and social impact initiatives. Now with an additional benchmark for corporate governance, the MSCI ratings are an intangible value assessment of the company's energy efficiency, carbon emissions, and proactive labor management programs.

PARTNERSHIP WITH ENGEN IN AFRICA

Poor infrastructure, low connectivity, traffic congestion, and the lack of standard address formats has traditionally meant that sending documents and small packages within or from Africa could prove something of a challenge. A new retail partnership between DHL Express and Engen, Africa's leading multinational fuel and service station operator, is set to change some of this, providing service points where packages can be sent, and opening up opportunities for small- and medium-sized enterprises (SMEs) by making overseas shipments possible at these local service stations. A pilot program which aims to make express logistics more readily available and more affordable for business owners and consumers is already underway in the Namibian capital Windhoek. In the second of four planned phases, the initiative will roll out to incorporate retailers in Botswana, Ghana, the Democratic Republic of Congo, Kenya, and Tanzania. Sumesh Rahavendra, Head of Marketing DHL Express Sub-Saharan Africa, notes that the new service will have an enormous impact on consumers across the continent. "The express logistics industry, and specifically retail services for consumers and small- and medium-sized enterprises, are becoming hugely important in Africa," he says.



Photos: AirTeam Images, Tyrone Bradley, FightTheFakes, DHL, Engen

NEW STANDARDS FOR GOGREEN PRODUCTS

When DHL introduced its **GOGREEN** carbon neutral offering in 2006, it established a carbon management system validated and verified according to the principles of ISO 14064 on greenhouse gases, a norm originally established for company reporting. With the latest development of product standards for emission reporting, the company is enhancing its product accounting. It now includes not only carbon dioxide emissions from transport and handling, but also other greenhouse gases as well as so-called upstream emissions from the production and transport of energy and fuels needed for logistics. With the new "GHG Protocol Product Lifecycle Accounting and Reporting Standard" in place, customers using DHL's Carbon Reports start receiving information about their total greenhouse gas emissions, including upstream emissions. Additionally, the Carbon Report services of DHL Express and DHL Global Forwarding and

Freight are now compliant with the European standard EN 16258 for the calculation and declaration of energy consumption and greenhouse gas emissions. This includes the reporting of fuel and energy-use data next to emission reporting, and helps customers to better manage costs as well as environmental impacts. With the newly named GOGREEN Climate Neutral products (formerly known as "Carbon Neutral"), the total greenhouse gas emissions including upstream emissions will be offset, increasing environmental benefit without changing the pricing for the service, while also offering DHL customers increased transparency.



\$35 MILLION INVESTMENT IN CHICAGO FACILITY

One of the world's busiest airports, **Chicago O'Hare International** is the ideal location for an expansion of DHL Global Forwarding's operations. The third largest city in the United States, Chicago is a trade crossroads. And a new investment of nearly \$35 million at O'Hare will ensure it stays that way. The investment includes the construction of 16,154 square meters of office space and 128,939 square metres of warehousing – all LEED-certified for the use of green technologies during construction. A bonded Container Freight Station, the facility will be established as a Life Science Cold Chain Competency Center, with two

930-square-meter temperature-controlled rooms for handling pharmaceutical, biotech, and medical devices. The area will also be designated a Foreign Trade Zone – a secure area under the supervision of U.S. Customs and Border Protection and outside the customs territory of the U.S. for duty purposes. It is also expected to be certified TAPA-A, an internationally recognized standard in the fight against cargo theft. With its central location, the O'Hare facility will offer customers more cost-efficient shipping alternatives, while boasting the largest intermodal container capacity in the Western Hemisphere.



4,500
FURS WERE SHIPPED FROM CHINA TO SOUTH AFRICA IN 2013

 panthera.org

FAUX FURS FOR LIFE

Worn as a symbol of status by members of the Shembe Baptist Church in South Africa, leopard skins have become an essential garment in its community of some five million. Although trade in leopard skins is illegal in South Africa, the practice has become widespread. To reduce demand for real leopard skins and protect the endangered

species, Tristan Dickerson, Leopard Program Coordinator at conservationist organization Panthera, spent a year working with designers and clothing companies to create a high-quality, affordable faux leopard skin – an effort DHL Express is supporting on a complimentary basis through transportation of the furs from China to South Africa.



FOCUS:
ENGINEERING &
MANUFACTURING

Cleared for takeoff

After a period of turbulence, the aviation industry is once more starting to spread its wings. Strong future growth, particularly in Asia Pacific, coupled with more dispersed supply chains, mean that manufacturers, suppliers, and logistics providers will need to be increasingly agile.

GREAT EXPECTATIONS:
Some 29,000 new aircraft
will be needed by 2032.

The biennial Dubai Airshow usually makes trade press headlines. It is, after all, one of the biggest events in the aviation calendar. The 2013 airshow, however, also made civil aviation history, with a record-breaking order-book bulging to the tune of \$206.1 billion. The biggest deal came from Emirates airline with orders to Boeing and Airbus worth a staggering \$99 billion at list prices, excluding purchase rights – the largest commercial aircraft order ever. At the very least, these figures seem to indicate that the aviation industry is beginning to soar again after five turbulent years. No one orders that amount of planes just to keep them grounded.

It's not quite that simple, of course, because aviation and aerospace have taken a sustained battering since 2008 and the aftershocks are still being felt in some areas of the industry. Cargo remains stubbornly in the doldrums, although a fragile recovery was hinted at in October, fed by stronger business confidence and improving trade flows. On the military side, with the continuing slowdown in Europe and the U.S. government scaling back on defense spending, demand is expected to remain weak in the near term.

But aviation is now undoubtedly on an upward trend, and in the commercial sector the mood is bullish, with growth being driven by improving global markets and robust passenger demand. The new middle classes in emerging countries have money, and will travel. "Overall, the story is largely positive," explained Tony Tyler, IATA's Director General and CEO, in September. "Profitability continues on an improving trajectory." In fact, the next twelve months are expected to be strong for North American carriers as the economy improves, while Middle Eastern carriers – the rising stars of the market, including the rapidly expanding Emirates – are expected to post their highest ever profit at \$2.1 billion. The industry in Latin America is on the up, too. According to the latest Airbus Global Market Forecast, the Brazilian



FINAL CHECK: Engineers at Rolls-Royce conduct their last inspection of an aero engine before delivery to a customer.

air travel market will need 1,324 aircraft by 2032 to address the country's rising international and domestic air travel requirements.

GROWTH OF ASIA PACIFIC

In the long haul, though, it's Asia Pacific where the really big news lies. "By 2032, Asia Pacific will lead the world in traffic, overtaking Europe and North America," says John Leahy, Airbus Chief Operating Officer – Customers. "Today on average, one-fifth of the population of the emerging markets takes a flight annually, and by 2032 this will swell to two-thirds. The attraction of air travel means that passenger numbers will more than double from today's 2.9 billion, to 6.7 billion by 2032."

That means a seismic change for the whole sector. Contrary to years past when the U.S. and Europe were the biggest markets for aviation, Asia – and in particular China – has become the focus of the industry with total fleet size and growth shifting east. "Big manufacturers are changing their manufacturing

patterns," says Marja-Liisa Turtiainen, VP, Aerospace & Aviation, DHL. "So from that perspective, supply chains are becoming more dispersed, more complex, and more fragile. The industry's tight development and production scheduling demands more effective logistics, so flexibility, scalability, and visibility are essential when a major aviation manufacturer partners with a logistics service provider."

Main players such as Airbus, Boeing, and Bombardier have long-established presences in China. Airbus interests include the A320 final assembly line in Tianjin, plus a Beijing-based engineering center and a Beijing support center, stocking some 25,000 spare parts for dispatch to airlines in the Asia Pacific region. Boeing's sites include a Manufacturing Innovation Center in Beijing, a maintenance, repair, and overhaul (MRO) center based in Shanghai, and a composites facility in Tianjin. And recently Bombardier announced a facility in Tianjin to support MRO services. "The industry's center of gravity is moving," says Reg Kenney, President, Engineering & Manu-

facturing, DHL Customer Solutions & Innovation (CSI). "Extremely strong growth in Asia Pacific is going to drive demand for manufacturing services and it's going to drive demand for MRO-related support."

Airplane manufacturing is certainly going to increase if the figures are to be believed. The latest Airbus Global Market Forecast to 2032 shows a need for some 29,000 passenger and freighter aircraft. Plus airplane manufacture generally is rising because of the shortened life expectancy of commercial aircraft. "There's an interesting trend now," says Kenney. "In the past, it wasn't unusual to see planes in the air for between 17 and 20 years. That's currently dropped to below ten years because technological advances in engine and airplane construction have resulted in increased fuel efficiency, which means a carrier can make big savings by buying new planes more frequently." Naturally, this upswing is good for suppliers, such as engine-makers GE and Rolls-Royce, who have duly poured into the growing Chinese market, making Asia an aviation and aerospace hub.

Yet the aviation story is by no means confined to China. Just as in other industries, manufacturers now source components from an ever-increasing number of suppliers based all over the world. According to a 2012 article in the *Wall Street Journal*, Boeing's commercial division uses more than 750 million parts provided by 1,200 suppliers operating in 5,400 factories across the globe. Airbus, meanwhile, in 2015 is to open a \$600 assembly line in Mobile, Alabama, to be near to its expanding number of clients in the Americas. Airbus says the benefits of being in close proximity to customers at key locations worldwide have been borne out by its experience in China, "where the company's presence – including the A320 final assembly operations at Tianjin that started in 2008 – has been accompanied by a more-than-doubling of its share in the fast-growing Chinese air transport market."

SUPPLY CHAIN PRESSURE

Marja-Liisa Turtiainen points out that building a global manufacturing footprint is also a way to manage supply chain risk and mitigate capacity bottlenecks. In recent years, pressures on supply chains due

750
MILLION
parts are used by Boeing's commercial divisions annually.

"IN THE NEXT 20 YEARS (2013-2032), AIR TRAFFIC WILL GROW AT 4.7% ANNUALLY REQUIRING OVER 29,220 NEW PASSENGER AND FREIGHTER AIRCRAFT VALUED AT NEARLY \$4.4 TRILLION."

Airbus' 2013-2032 Global Market Forecast (GMF)



PRECISION ASSEMBLY:
Supply chain stoppages must be avoided.

to commodity shortages, natural disasters, and supplier failures have focused the minds of supply chain executives in every industry. In the aviation industry, where security and safety are paramount and where delays are hugely expensive, the risks associated with complex and fragile supply chains have the ability to keep managers awake at night.

“Risk is a high priority for virtually all the customers we serve in the aviation sector,” says Turtiainen. “In terms of supply chain risk, any sort of blockage in the inbound to manufacturing supply chain that could cause an assembly line slowdown

10 YEARS

and less is the time planes nowadays spend in the air as technological advances make it economical for carriers to buy planes more often.

or stoppage has to be avoided at all costs. It’s therefore essential for a logistics service provider (LSP) to work closely with the customer to ensure that transit lines for specific shipments are not going to result in delays or shortages. Also, in terms of mitigating compliance risk, it’s key for an LSP to facilitate compliance for customers, both from a regulatory as well as a customs perspective, globally.” But if risk-reducing flexibility, scalability, and visibility are important, so is cost. In a highly competitive business, there will always be an emphasis on improving cost efficiency, lead time efficiency, and transit time effi-



SMARTSENSOR: Tracking Critical Aviation Components 24/7 in near real-time.

CHECKING CRITICAL CONDITION USING SMARTSENSOR TECHNOLOGY TO MINIMIZE DOWN TIME AND COSTS

Because critical aviation components are just that – critical – and because AOG delays are as expensive as they are time-consuming, it pays to monitor shipments during transportation to check what condition they are in. Which is just what DHL’s state-of-the-art SmartSensor

technology does, so ensuring smooth contingency planning. SmartSensor is a device which pre-reports faults in critical aviation components by tracking them constantly during transportation and sending automatic alert notifications, via GSM, which can be analyzed near

real-time online, 24/7, worldwide. The SmartSensor can be attached to a particular part or placed in the shipment. If a fault in a shipment is detected it means that spares can be arranged to meet a plane upon arrival, so down time is minimal and unnecessary costs are avoided.

ciency on the service side, on an ongoing basis. Logistics doesn’t only play a part in aircraft manufacture. It’s also vital in aftersales for maintenance, repair, and overhaul, where highly flexible and efficient supply chains are needed to ensure that airlines are promptly supplied with required spare parts and components. In this market, speed is of the essence. To answer these specific demands, logistics service providers have to ensure close collaboration with customers and demonstrate the ability to leverage global coverage, quickly, with a variety of transport modes. Clearly, depending on the manufacturer or supplier, aviation logistics needs can vary wildly, says Reg Kenney. A company such as Boeing might need to move a fuselage section from one side of the world to the other. A company such as Rolls-Royce may need to do the same with an aircraft engine. Suppliers of overhead switches might need to get a mission-critical part to the next state – or another continent – so that a plane can be met on landing and a fault rectified.

“For the big manufacturers it’s vital to partner with a logistics provider who can demonstrate an ability to move everything from engines, fuselage sections, wing sections, tail sections, seats, and lighting gear – which we at DHL have transported from, let’s say, point of manufacture in China to Northern America – right down to the smallest screws and smallest electrical connector from suppliers, on an AOG basis. We have the ability to handle it all, whatever the size, routinely. It’s that wide variety which makes this such an exciting and challenging sector to work in.”

— **Tony Greenway**



CABIN PRESSURE: Having everything in place on time has a direct impact on customer satisfaction.



AIRCRAFT ON THE GROUND: Speedy maintenance is key.

AIRCRAFT ON GROUND: WHEN SPEED MATTERS MOST

The increasingly complex and technically sophisticated nature of today’s aircraft is both a blessing and a curse. A blessing for crew and passengers because it has revolutionized air travel, making it easier, more comfortable, and offering better environmental performance. And a curse for carriers because – from the navigation systems to the passenger-facing gadgets and gizmos – the demand for myriad mission-critical spare components is a challenge that has to be met on time, 24/7, 365 days of the year.

The fact is that today’s commercial airplanes are high-tech flying machines requiring routine checks, overhauls, and unexpected repairs, with express deliveries of parts needed for speedy on-ground servicing. AOG (Aircraft on the Ground) “next flight” services, where parts are delivered to return an aircraft to the air, are therefore critical to a carrier’s operation, because delays can be expensive. Very expensive. According to Airbus China, the cost, per day, for an A380 Airbus to be grounded due to technical reasons runs to \$1,250,000. “It’s vital that a spare component is sourced, transported, and installed on an aircraft as soon as possible,” says Marja-Liisa Turtiainen, VP, Aerospace & Aviation, DHL. “Getting materials to a production line or to an aircraft quickly is everything, and there really is no way around it. For instance, if a flight is operated without the entertainment system functioning

properly then carriers face the real issue of customer dissatisfaction.” Carriers know this only too well. That’s why sophisticated new aircraft, such as the Dreamliner or the Airbus A380, are monitored by a system from take-off to landing that alerts the need for spare parts while the plane is in the air. If it becomes evident during a flight that a particular component is needed, the information is sent to a service center which then locates the part from the optimum supplier before the aircraft has even landed.

Of course, the challenge for logistics providers is that today’s globalized supply chains mean that spare parts – big and small – come from suppliers across the world, but need to reach a particular destination at a specific time. DHL has been running a solid AOG offering in order to get customers whatever they need, from smaller components to oversize shipments, as fast as they need it. This year also sees the launch of a new AOG product developed by the company’s Solutions & Innovation unit, which bundles the capabilities, expertise, and solutions of all DHL businesses – Express, Global Forwarding, Freight, and Supply Chain – leveraging solutions expertise across sectors in one product that will positively surprise the market. “The new solution we have developed will deliver even more sustainability due to standardized processes worldwide for different types of parts, and promises to be a very strong addition to our AOG portfolio,” says Turtiainen.

MAINTENANCE: THE INVISIBLE SUPPLY CHAIN

Optimizing “hidden” maintenance, repair, and operations (MRO) supply chains has the potential to deliver far-reaching benefits for manufacturing companies, from reduced inventory and lower operational costs to increased production capacity and efficiency.

To maximize productivity, manufacturing equipment must be effectively maintained. In many manufacturing companies, however, responsibility for MRO is split between multiple functions, with limited central planning and with individual sites or maintenance teams responsible for the supply of tools, and parts. The result of this poor coordination can be significant hidden waste. Research by management consultancy McKinsey, for example, showed that the front-line technicians at one defense contractor spent more than 20% of their time waiting for parts, tools and equipment. Combined with other sources of waste, from a heavy administrative burden to bad coordination between functions, these technicians were only able to spend around two hours of a typical nine-hour shift actually fixing equipment.

Bad use of technician time is only the tip of the iceberg, however. Companies with poorly managed MRO functions suffer a host of other extra costs and inefficiencies too. Parts inventories can be excessively high, unnecessarily duplicated, or even obsolete. And poorly maintained equipment can result in increased energy consumption, quality issues, or loss of production, driving up capital and operating costs.

A CLEAR PICTURE

Today, an increasing number of engineering and manufacturing organizations are recognizing the need to improve the performance of their maintenance activities. Doing this is necessarily a highly cross-functional effort, requiring different parts of the organization to work closely together in order to get a clear picture of current MRO practices, to find the root cause of key pain points, and to implement solutions to them.

World-class MRO supply chain solutions aid this process with technologies and services that deliver efficiency and performance improvements for both the organization as a whole and its operational front

“WITH FULL VISIBILITY OF ITS MRO OPERATIONS, A COMPANY CAN EVOLVE ITS PREVENTIVE MAINTENANCE STRATEGIES TO MINIMIZE UNPLANNED DOWNTIME.”

David Bruce
VP Global Strategic Products
– MRO, DHL Supply Chain



TOOLS FOR THE JOB: Having the right equipment and parts on-site for repair saves time, money, and space.

line. Automated vending machines for commonly used consumables and spare parts, for example, make such parts readily available at the point of need while also ensuring tight integration with the organization's procurement and parts logistics processes. Similarly, the supply of pre-prepared kits of parts in advance of scheduled maintenance interventions ensures front-line teams have everything they need to execute as rapidly and effectively as possible.

CONTINUOUS IMPROVEMENT

For the wider manufacturing organization, the move to an integrated MRO platform permits the capture of economies of scale in procurement, allows spare parts inventory levels and locations to be optimized globally, and enables supply chain synchronization to ensure parts are available in the right place at the right time. Such a platform also provides the basis for ongoing continuous improvement of equipment reliability and maintenance performance. “With full visibility of its MRO operations, a company can evolve its preventive maintenance strategies to minimize unplanned downtime, and set spare parts inventory levels based on real supplier lead times and required availability,” says David Bruce, VP Global Strategic Products – MRO at DHL Supply Chain. “The aim is to move MRO planning and execution from a just-in-case to just-in-time philosophy.”

Photos: Bloomberg via Getty Images, DHL

Companies that have made the shift to an integrated MRO approach have been able to capture significant value improvements. “Depending on the customer's objectives and challenges, we have seen spare parts inventory reductions of 30–50%, sourcing cost savings of 5–15%, and similar reductions in obsolescent parts,” says Bruce. “Companies have also increased front-line engineer efficiency by 20–30% and cut operational and capital costs in maintenance by 20–25%. And those savings may be dwarfed by the additional production capacity offered by improved equipment availability.”

The value captured through MRO optimization is particularly appealing, notes Bruce, since the benefits realized typically don't have to be shared with customers or suppliers – they go straight to the bottom line. In the future, however, a new kind of collaboration may release even more value. “Companies are asking themselves whether MRO is an area where they might be able to collaborate for mutual benefit,” says Bruce. “This is all about MRO maturity and understanding the complete end to end MRO supply chain. In the energy sector, which is fairly mature on MRO, we are beginning to see a shared regional MRO platform concept in action that offers all participants higher performance at lower cost. Manufacturing companies might find similar opportunities from a similar approach once MRO maturity is established and understood in this core sector.” — *Jonathan Ward*

30%

spare parts inventory reduction and more can be achieved when companies shift to an integrated MRO approach

THREE QUESTIONS FOR

Reg Kenney

PRESIDENT, ENGINEERING & MANUFACTURING, DHL CUSTOMER SOLUTIONS & INNOVATION (CSI)



“E&M IS WELL PROTECTED AGAINST ECONOMIC CHALLENGES”

What are the current trends in E&M?

It's a broad industry, of course, so we have good stories to tell in some areas, and weaker ones in others. Certain sub-sectors are doing extremely well and experiencing strong growth, such as aviation and aerospace. At DHL, we have seen that reflected in our own numbers for 2013. At the

other end of the spectrum, the mining sub-sector has experienced a difficult year in a difficult trading environment, with weaker commodity prices. Many of our customers who have a significant stake in mining have had to deal with real financial challenges. I remain bullish because E&M is so diverse and therefore better protected against economic challenges occurring in more highly cyclical industries.

How can E&M players reduce costs in their supply chains?

Adopting best practices is one way. At DHL, we can point to some excellent concepts of best practice that have been successful in other sectors. We discussed this at the MRO

Asia 2013 conference in October, where we hosted a seminar highlighting how other industries have taken a shift from functional efficiencies to business efficiencies to achieve significant savings. We are looking at ways to bring best practice concepts to our E&M customers, and that's getting a very positive response.

Can you give an example?

DHL has been working with a UK-based manufacturer of construction and industrial equipment to re-engineer its Inbound to Manufacturing process with a best practice solution, which we have replicated with other customers in our sector. Its key features include receiving “production materials” and preparing them for use, then conducting the actual delivery to the production operation. This involves timing and sequencing them to coincide precisely with production scheduling, and removing and disposing shipping materials to reduce unnecessary waste.

TAKING CARE OF THE HEAVY LIFTING

In the engineering and manufacturing sector, the forwarding of heavy and oversized cargo is rising thanks to the growth of large industrial projects. Yet the logistical challenges involved – like the freight itself – can be enormous.

Over the last decade or so, forwarding of heavy and oversized shipments in the engineering and manufacturing sector has increased because of the growth of large industrial projects, and of projects in remote locations. Whereas a \$1 billion venture in this arena was a big deal 10 years ago, today the figures have skyrocketed. Now, \$20 bn or \$30 bn projects are commonplace. Last year, KPMG's Global Construction Survey reported that 56% of respondents felt that mega project management was a major contributor to growth. "The scale and duration of large engineering and construction programs means that contractors – particularly the bigger, global players – require some time to prepare for market upswings," noted Geno Armstrong, International Sector Leader Engineering & Construction KPMG in the U.S., in the report's introduction. "Having tightened their belts and rationalized following the recession, are they fully ready to catch the next big wave of mega projects?" That wave is coming and, with it, the need for heavy and oversized equipment and parts.

Yet here lies a challenge, because the movement of heavy or oversized cargo is rarely straightforward. Typically for a heavy-haul shipment, a break-bulk ship (specialized vessels fitted with heavy-lift cranes) is required and (depending on the cargo) a variety of specialized transport equipment may be employed too, such as self-propelled modular transporters (SPMTs), low bed rail cars, self-geared vessels, barges, lifting devices and trucks. Naturally, heavy-haul cargoes have different requirements. For instance, DHL's Industrial Projects team – specialists in handling large-scale shipments – transported two 1,000 ton modules, treated with a special paint that reacts to internal heating, which even the smallest scratch could damage. Thanks to effective coordination, total transparency, plus painstaking attention to every logistical detail, the move went without a glitch.

MOVING AN AIRPORT

More recently in the E&M sector, a project in Ecuador involved moving the contents of an entire airport

"HEALTH AND SAFETY IS OF PARAMOUNT CONCERN. IT'S ONLY BY BEING COMMITTED TO HSSE TODAY THAT A COMPANY CAN MAKE SURE THAT IT IS STILL OPERATING TOMORROW."

Reg Kenney, President Engineering and Manufacturing, DHL



MAJOR PROJECT: Lowering the first tunnel boring machine "cutter head" to extend New York's subway line 7.

from one location to another. In practice, this meant transferring 100% of goods and equipment from the old Mariscal Sucre Airport in Quito to the New International Airport in Tababela Parish, in convoys consisting of low beds and container trucks for oversized cargoes. Operational reports were sent every day to all customers, allowing them to track the evolution of shipments of their goods and to provide comments. The operation, also conducted by Industrial Projects, was a success, meaning that the new airport could open on time, as planned, in February of last year.

When moving heavy or oversized transports

around the world, crossing borders is not normally an issue, as long as necessary customs clearance procedures are performed perfectly, and all documentation is present and correct. The biggest challenge is actually an administrative one: obtaining permissions for transporters to use roads and bridges. This is usually complex because authorities issuing such permits tend not to be centralized – not even in the same country. "For example," says Nikola Hagleitner, CEO Industrial Projects, DGFE, "if heavy/oversized equipment is needed to be transported from Denmark to a destination in, say, the western Lower Saxony state

of Germany, the road authorities of no less than five countries and states will be involved. Also, as transportation isn't simply confined to motorways, local sub authorities need to be approached, causing further delays to the permission process. Then, if a part authority in Germany rejects permission because of sudden road works, the entire permit is rejected, and a new enquiry for a different route has to be made." The result? An immediate transportation delay, with no guarantee that the new enquiry will be any more successful than the first. In Europe, it's routine for permission processing times to take more than four weeks. Good forward planning, then, is crucial.

WORKING WITH THE AUTHORITIES

Heavy transportation across bridges is even more problematic. Authorities may ask for calculations for any bridge along the route at any time, even if it's known that a certain bridge is both new and certified to take the truck axle loads of the transporter in question. There may also be a need to reinforce roads or bridges, or even to build part of a road in order to access remote locations and so guarantee the safe and secure transportation of goods. These services are all part of a project forwarder service portfolio, including feasibility and rehabilitation studies.

For the customer, any heavy/oversized shipment delays or cargo losses mean increased costs; for the logistics provider, there is a reputational and financial imperative at stake. For both, given the non-standard nature of the cargo being moved and the typical remote locations of the project sites, HSSE must be the main focus. "Most injuries in heavy/oversized shipments occur during the loading and unloading of cargo, a process usually controlled by the logistics provider," says Reg Kenney, President Engineering and Manufacturing, DHL. "That's why health and safety is of paramount concern in our operations. It's only by being committed to HSSE today that a company can make sure that it is still operating tomorrow. Because, even though project forwarding conjures up images of large docks, heavy machinery, break-bulk cargo and remote or industrial settings, it is ultimately something that is carried out by people. Moreover, as we operate across the globe, we have a zero tolerance compliance policy." Far from being altruistic, HSSE also makes perfect business sense. Proper safety planning and precaution reduces injuries, damages, and time lost. This in turn means that morale is improved, efficiency is boosted, and productivity can run as planned – all aspects that contribute to reduced total landed costs.

No wonder the forwarding of heavy and oversized shipments can take years of meticulous research and planning. But there's simply no other way when the cargo is big – and the stakes are so high. — **Tony Greenway**



Learn more about DHL Industrial Projects hub at:

tinyurl.com/DHLProjectLogistics



The new Latin heroes

Chile, Peru, and Colombia have managed to transform themselves into three of Latin America's most exciting economies, providing solid growth and a wealth of new opportunity.

Brazil and Mexico are usually seen as the powerhouses of Latin America, but three much smaller countries are now regarded as some of the region's most exciting players. Chile, Peru, and Colombia have been steadily strengthening their economies and wooing investment. But while these countries are generating a wealth of opportunities for investors and new businesses, they are also all still grappling with difficulties ranging from shaky infrastructure and fledgling institutions to maintaining their current rapid pace of growth.

Having reaped the rewards of the commodity boom, Chile, Colombia, and Peru invested to create stability. Where formerly they experienced booms and busts, the upcoming Latin American trio has in the last decade been steadily establishing strong macroeconomic conditions with firm GDP growth, low inflation, controlled deficits, and solid central banks.

They have also embraced the free market and positioned themselves as global exporters, installing business-friendly policies mainly directed toward North and South America and commodity-hungry China.

"They are intelligently making quiet, steady progress, without grandstanding," says Samuel George, a specialist on Latin America at the Bertelsmann Foundation in Washington DC. "I like to think of them as the Pacific Pumas."

CHANCES FOR INVESTMENT

For investors that want to look beyond the two Latin American giants – Brazil, which is experiencing stalled growth, and Mexico, which is largely tied to the U.S. economy – the Pacific Pumas are increasingly attractive. Though the countries are smaller, investors can still tap almost 50 million potential customers in Colombia, or see stellar growth in Peru with its popula-

Photo: Andrea Pistolesi

tion of around 30 million. And with the steadiest track record of the three, Chile offers solid commodities-based opportunities along with a burgeoning retail sector and niche industries such as wine production.

Chile, Colombia, and Peru are also poised to benefit from their membership, along with Mexico, of the Pacific Alliance – a trade bloc with goals including free trade between member states, visa-free travel, and a common stock exchange. In the coming decade, in the absence of negative investment policies Jaime Quintana from Forecast Consulting sees a continuing positive outlook for all three countries. "We expect the Peruvian economy to converge to growth rates of around 5.5–6% in the medium term, while Chile and Colombia should be in the range of 4.5–5%," he says.

CORNERSTONES OF GROWTH

Over the last 30 years, Chile has been transformed from one of the region's poorest countries into one of its richest, and successive governments have used the proceeds from copper exports for a sovereign wealth fund. The economy has steadily widened, production has increased, and unemployment has tumbled. While the mining sector continues to be a cornerstone of economic growth, in recent years the construction, commerce, communications, and financial services sectors have all shown highly dynamic growth. One core task for Chile's newly elected government will be to create the conditions for a stable and cheaper energy matrix. This will definitely improve competitiveness, Quintana says.

During recent decades, Peru has implemented aggressive structural reforms, especially in the commercial and financial areas. There have also been a series of crucial labor, fiscal, and monetary reforms. According to Quintana, among the most important were trade liberalization, financial liberalization, and reforms of the pension system. Other steps have included rules establishing an attractive framework for private investment that gives sufficient guarantees to foreign investors to risk their capital in the country, and to Peruvian nationals to repatriate their savings.

Challenges remain for Peru. The foremost will be to maintain the stellar growth rate and expand reforms at the microeconomic level. There is a need to improve institutional investment, public sector efficiency, and labor market flexibility, and allow private investment to flourish in key sectors such as public infrastructure, healthcare, and education.

Carlos Caicedo, Senior Analyst on Latin America at IHS Consulting, characterizes Colombia as business-friendly and predictable. But the shadow of terrorism still lingers over the country, with some remote regions in the clutch of guerrillas. Caicedo explains that if it were not for the guerrillas, Colombia would be an even bigger success. "Peace would be the icing

4.5%

is the minimum expected annual growth rate of the economies in Chile, Peru, and Colombia

on the cake,” he says. The threat of terrorist attacks on roads formerly resulted in severely inadequate and dilapidated infrastructure. “Now, given the semblance of peace, people can begin to build roads as part of a stimulus program,” adds Samuel George.

As of now, difficult infrastructure in these countries can hamper supply chain logistics. The World Bank’s logistics performance index of 155 countries in 2012 ranked Chile at number 39, Peru at number 60 and Colombia at number 64 based on factors such as timeliness, service quality, customs, and infrastructure (by comparison China was number 26, Brazil number 45, and the U.S. number 9). Inadequate rail and roads strewn with potholes can make logistics complex and push up costs related to vehicle repairs, fuel, or delays. Insufficient multimodal transport, inadequate airport and port capacities, unsafe roads, a multitude of red tape, and a shortage of logistics specialists are the challenges at hand. Colombia in particular needs improvements. Cities are poorly connected to both internal and external markets, largely because of the country’s extreme topography.

THE UPSIDE OF INFRASTRUCTURE

All three governments are trying to overcome these hurdles, providing opportunities as the projects gather pace. In the medium term, experts estimate an upside in sectors related to public infrastructure investment, either directly through participation in major concession projects or through investment in companies producing inputs from concrete or steel to machinery.

There are already widespread construction and infrastructure projects across the region. Since the early 1990s, Chile has been using public-private re-

CONSUMER APPETITE:
The growing affluence is generating new opportunities in the restaurant business and in retail.



sources and concession projects to develop infrastructure and continues to pump resources into road and rail. *The Financial Times* publication *LatAm Confidential* reported that a \$15.7 billion investment in improvements to Chile’s existing road and rail infrastructure is expected over the next eight years.

On a similar scale, Peru is eyeing nationwide infrastructure reforms. With Lima to host the 2019 Pan American Games, the transportation and communications ministry (MTC) expects to invest \$20 billion in infrastructure projects by 2016, half of it in public-private partnerships (PPP). One example is the development of a major logistics hub integrating air and ocean cargo and linking Lima International Airport with Callao Port. MTC also plans to invest in the expansion of Lima’s airport, with construction to begin in 2014, and grant a 40-year concession for the new International Airport Chinchero-Cusco.

Colombia has launched its fourth-generation infrastructure plan, worth \$25 billion and involving 47 different projects. “With this initiative, the length of roads throughout the country is expected to nearly double, from 6,000 kilometers to 11,000 kilometers in the next six years,” says the National Infrastructure Agency (ANI). The government is currently planning auctions for the first of dozens of road projects.

MOVING BEYOND THE BASICS

Although growth has eased recently, analysts are optimistic. Recovery should be driven, in the case of Peru, by increased activity in the mining sector and in clusters sensitive to domestic demand such as construction, trading, financial services, and electricity. In Colombia, the recovery is likely to come from the export sector, given the improved outlook for its main trading partner, the U.S., and increased investment in infrastructure. In Chile, though investment confidence recently dipped, the mining sector should continue to perform well.

With their growing middle classes, these countries should also see increasing opportunities in their retail sectors as consumers begin to clamor for cars, fridges, and high-tech gadgets. Starbucks has popped up in Lima, and Santiago has many swish restaurants. Beyond flourishing mining and oil industries, there is also potential in sectors such as IT, software, and banking.

These countries all offer promise. While Chile has traditionally provided the most sophisticated and developed economy, Peru has delivered rapid growth and seen streams of foreign investment. Although Colombia still has a terrorism problem, it is nevertheless establishing a solid economy with a good education system. Both together and individually, the Pacific Pumas offer plenty of new potential in Latin America. — *Tony Danby*



ICELANDIC ASH CLOUD: A holistic approach to supply chain risk management is essential for overcoming the consequences of unexpected natural disasters.

HOW SAFE IS YOUR SUPPLY CHAIN?

Risk to your supply chain is inevitable. What matters is how you assess it and then mitigate it in order to save – or at least limit damage to – company sales and reputation. So how prepared are you? And are you ready to take a holistic approach to supply chain risk management?

When the triple disaster of the earthquake, tsunami, and Fukushima meltdown hit Japan in 2011, the global car industry was stricken, with 80% of the country’s automotive plants suspending their production. One of the companies supposed to be worst hit was Nissan, with six production facilities and 50 suppliers severely affected, and a resulting loss of production capacity reportedly equivalent to approximately 270,000 cars.

And yet over the next six months, Nissan’s production in Japan decreased by only 3.8%, compared to an industry-wide decrease of 24.8%. Incredibly, Nissan ended 2011 with an increase in production of 9.3% compared to a reduction of 9.3% globally.

So just how did Nissan manage to emerge in so much better shape than the rest? The company’s story – a lesson in exemplary supply chain risk management against the odds – is highlighted in *Making the Right Risk Decisions to Strengthen Operations Performance*, a study by the MIT Forum for Supply Chain Innovation, in collaboration with PwC, published in August 2013.

85%

of companies with global supply chains had experienced at least one supply chain disruption in the previous twelve months (Supply Chain Resilience 2011 – Business Continuity Institute, November 2011).

The report, based on the results of MIT’s 2013 Global Supply Chain and Risk Management Survey, points out that Nissan had a forward-thinking supply chain risk management strategy, with a focus on early risk identification and analysis, and rapid implementation of countermeasures. Nissan also had a continuous readiness plan – including an emergency response plan, business continuity plan, and disaster simulation training – which it deployed along its supply chain. Plus, crucially, Nissan’s supply chain was flexible, with visibility embedded across its entire operations and with good coordination across internal and external business functions. As a result, it was able to rise, phoenix-like, to get ahead of the competition. Others weren’t so lucky, with one carmaker in the region reporting a staggering 99% drop in quarterly profits.

“Our survey indicates that supply chain disruptions have a significant impact on company business and financial performance,” says MIT professor David Simchi-Levi, founder of the MIT Forum, “and companies that invest in supply chain flexibility are more resilient to disruption than mature companies that

Photos: STRINGER/Reuters/Corbis, picture alliance/abaca

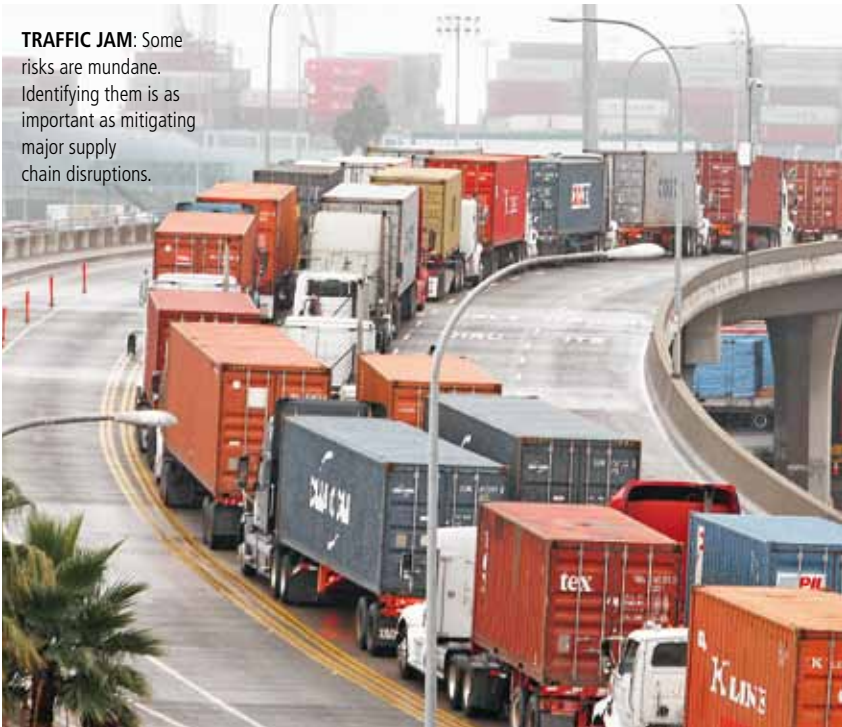
don't." To which the only sane response can be: why wouldn't a company invest in supply chain flexibility? Well, since the 1990s, "lean" has been the name of the supply chain game. In the rush toward cost optimization, businesses have, for example, based production where labor costs are lowest, introduced outsourcing, employed just-in-time inventory, and reduced their distribution facilities. Measures such as these may make a big difference to an organization's bottom line, but the downside is often a lack of supply chain flexibility, resilience, and increased risk. When it comes to assessing and dealing with risk, the strategy for many companies over the last 20 years seems to have been: cross your fingers and don't think about it too much. It's been low priority, at best.

Increasingly, however, something happens to focus minds. The 2010 Icelandic ash cloud, for instance, which closed European airspace; the 2011 floods in Thailand which caused massive loss of life and disruption to the global supply chain; and the aforementioned Great East Japan Earthquake, tsunami, and Fukushima disaster.

GETTING THE BIG PICTURE

These are headline-making events, of course; but supply chain disruption comes in many other – and thankfully more mundane – forms, from power outages and IT failures, to outsourced services provision failure, loss of talent and skills, and new laws or regulations. It is part of business and, particularly in a globalized economy, will never be eliminated. Yet the fact is that supply chain disruptions can cost a company in both sales and loss of reputation. Resilience, therefore, has to be the watchword.

To be properly resilient, however, it is not enough for different parts of a company to understand different parts of their supply chain: instead, getting the big picture – an overview of the inter-connected whole – is key. In its 2013 supply chain risk report, *The Ripple Effect*, Deloitte notes that a more holistic approach is necessary. This, as its name suggests, is a strategy that understands and assesses the entire supply chain end-to-end, enables early and fully informed decision-making, and thus allows a company to get ahead of the risk curve. Deloitte notes that taking a holistic supply



TRAFFIC JAM: Some risks are mundane. Identifying them is as important as mitigating major supply chain disruptions.

17%

say that the cost of the most significant single disruption was more than €1 million (Supply Chain Resilience 2011, Business Continuity Institute, November 2011).

48%

of executives said the frequency of risk events that had negative outcomes has increased over the last three years (The Ripple Effect: How manufacturing and retail executives view the growing challenge of supply chain risk — Deloitte, 2013).

For further information on Resilience360 contact: Tobias.Larsson@dhl.com

chain risk management view "means establishing clear cross-functional ownership and governance over supply change risk, and investing in organizational and risk management enablers, including the appropriate tools and processes for understanding, tracking, and predicting risk."

For example, Tobias Larsson and his team from DHL Customer Solutions & Innovation have spent two years creating and developing a supply chain risk management methodology and solution for customers, called Resilience360. A visual tool, Resilience360 has been designed to reduce customers' emergency costs, maintain service levels and creative competitive advantage, and can be tailored to individual require-

ments. "DHL has long experience of managing risk in our global logistics networks," says Larsson. "For example, when the Icelandic ash cloud disrupted supply chains across Europe, grounding flights for over a week in some areas, our contingency plans for using a road based trucking network instead limited delivery to a maximum of 24 hours and the shipments never stopped" The results of adopting a holistic approach, says Deloitte, will be "greater visibility, flexibility and control." But there is another benefit.

Because holistic supply chain risk management can lead to effective mitigation it can also turn potentially disastrous supply chain disruption into a competitive advantage for a business. "There has been a lot of clustering across sectors in recent years," says Larssons. "If one company sets up production in, say, China, others follow. Their second and third tier suppliers go, too, to be close to production sites and the customer. Then something happens and the entire industry is affected: the flooding in Thailand, for example, hit the global production of hard drives. But if a company has created resilience in its supply chain, with other suppliers in other parts of the world, its exposure to a disruptive event will be safeguarded or, at least, limited. As a result it can greatly benefit because it will be a step ahead of the competition."

Resilience360 – available on a totally secure, cloud-based platform – is scalable, easy to set up,

"THE ASSESSMENT WAS AN EYE-OPENER BECAUSE WE NEVER LOOKED AT RISK HOLISTICALLY BEFORE."

An D'haenens, Logistics Manager at DuPont



adapt and use, and offers organizations a risk and resiliency assessment, plus supply chain incident monitoring. To create a risk assessment, a customer's supply chain data is input into the tool with the aim of exposing vulnerability in over 20 risk categories, therefore allowing measures to be put into place to increase supply chain resilience. Additional necessary data for the analysis is gathered using a bespoke survey. "The great thing is that it is a visual tool," says An D'haenens, Logistics Manager EMEA at innovation and science firm DuPont, who recently used the tool to identify the company's top risks. "The supply chain data we have at DuPont is very complex, but this solution made it easily visible on a map."

CREATING COMPETITIVE ADVANTAGES

The tool's incident monitoring, meanwhile, tracks on a map risk incidents in real-time – combining data feeds from different intelligence companies partnered with DHL – that may have the potential to disrupt a company's supply chain, flagging up hotspots with notification alerts, feedback loops, and follow-up action triggers. This gives a business full supply chain visibility and the flexibility to react before emergency shipments become necessary, saving time, money, and reputation when disruption occurs.

"Resilience360 offers comprehensive supply chain mapping, including production sites, facilities, suppliers, and logistical flow," says Larsson. "It also visualizes and tracks shipments and even part or material numbers in a more sophisticated way than traditional risk management tools. The result is that customers can avoid halts to production and/or lost sales.

"Another huge benefit is that it is powered by our specialized knowledge of supply chain management, and run by people with logistics operational skills. These include experts in supply chain consulting who carry out the risk and resiliency assessments; and experts in incident monitoring who can deliver the solution in a control tower offering, if needed. We think this is supply chain risk management methodology that is best-in-class." — **Tony Greenway**

Photos: Getty Images, DHL

DUPONT'S EXPERIENCE WITH RESILIENCE360

Science and innovation company DuPont recently used DHL's Resilience360 tool to identify six of the major risk areas to its business. The results, says An D'haenens, Logistics Manager EMEA at DuPont, have been "eye-opening."

For An D'haenens, supply chain disruption comes with the territory. In her business, it pays to be ready for anything. "For instance," she says, "when the Japanese tsunami struck, our sole supplier's plant was disrupted. As a result, our supply chain was affected. Then there's strike action on the east coast ports of the U.S. at the beginning of this year, for example, which means our material gets stuck; or port congestion can hold things up. Whatever happens, happens... and the outcome is a delay in our supply chain."

D'haenens believes that more and more companies are tuning into the benefits of holistic supply chain risk management. It is certainly what DuPont has been doing. "I believe it's something organizations need to do," she says. "And now we have started the process. But, like many other companies, we didn't know how or where to begin." So working with DHL, D'haenens and her team used the Resilience360 tool in a major risk and resilience assessment exercise, focusing on six potential hazards that could affect DuPont's supply chain: power outages, telecoms outages, industrial fires, terrorist strikes, failures and the financial strength of suppliers.

"The first two weeks were taken up with data loading," explains D'haenens. "We gave our supply chain information to the DHL team and they populated the

tool. Then, because it's a visual tool, everyone in the different parts of DuPont could look at the information on a map and study it for themselves. We could choose to select or hone in on different routes – only sea, only air, only road, for example – and go into the detail of a particular country. And because it's a web-based tool it was easy to use, self-explanatory, and no training was necessary."

The tool showed that one of the biggest risks for DuPont was potential disruption to the ports of Rotterdam and Antwerp. "We have a lot of inbound and outbound freight at those locations," says D'haenens. "That's a pretty intuitive problem for us. But the tool allowed us to quantify just how big that problem is, and highlighted that we have to do something different than just ship to another harbor. Another big identified risk for us was IT-related. So now we are initiating an IT project because we have realized that IT contingency planning is not enough." In fact, DuPont is currently pulling together a mitigation plan for all the risks identified in the assessment. Only flows from DuPont to the customer were studied, however; so, in the next phase, it is planned to study flows from the supplier to DuPont. "The assessment was an eye-opener," says D'haenens, "because we never looked at this problem holistically before. In the past, different people were aware of different pieces of the supply chain. But this put it in a speedy timeline for us. The feedback has been very positive – and now we know where the risks are and are working to mitigate those risks." — **Tony Greenway**

PREDICTION: THE ORACLE WILL WEAR FIVE PAIRS OF GLASSES

Seeing into the future: it's a wish as old as humanity itself – dating back to the ancient Greeks who visited the oracle at Delphi, and earlier. Nowadays, economists try to make exact prognoses, but unlike in ancient Greece, their forecasts are often based on mathematical formulas. Still, the future remains uncertain. So what is a manager to do? After all, it is their job to look ahead and make judgment calls – hopefully the right ones. We gain an expert insight.

Can the future ever really be predicted?

Basically, yes. And there are various methods for doing it. Bruce Bueno de Mesquita is a particularly renowned “fortune teller” with an academic background. A professor of politics at New York University and a Senior Fellow at the Hoover Institute of Stanford University, he is a proponent of “predictioneering,” which is based on classic game theory. The method has been proven successful several times. Once, Bueno de Mesquita predicted the failure of the UN Climate Change Conference in Copenhagen in 2009. He also predicted Enron's bankruptcy and failure – well ahead of time, of course.

How does predictioneering work?

In predictioneering, all the people and interests involved in a case must be identified and put into relation with one another. Then you have to analyze which role the actors take, how much power they have, and to what extent they are able and willing to push their own agenda. When you have all that basic information, then you can calculate how the situation will resolve.

Are there faster methods?

Unlike classic futurologists, future managers take a day-to-day approach. The head of the Future Management Group, Pero Micic, is a proponent of The Five Future Glasses. In this method, a user wears different colored pairs of glasses one after another when considering different aspects of a particular question about the future, Micic says. This also enables a wearer to devise solutions to best deal with various scenarios.

So how does this glasses technique work?

The first step is the blue glasses – you wear them to examine your assumptions. You ask yourself, “How will the market, work, or life environment change in the coming years?” Then use the red glasses to look at possible surprises. How can you prepare for unexpected eventualities? The green glasses are for fields of action and opportunity: what are the threats – and possibilities – that change could bring? Next are the yellow “decision making” glasses. How do you want your own unit, department, company, and so on, to look in the next years, in terms of strategic vision? Finally, the violet glasses help you decide which strategy to use to realize the vision you have designed.

But how do you know you have taken all the most important factors into consideration, and can be sure there's nothing in the way of your success?

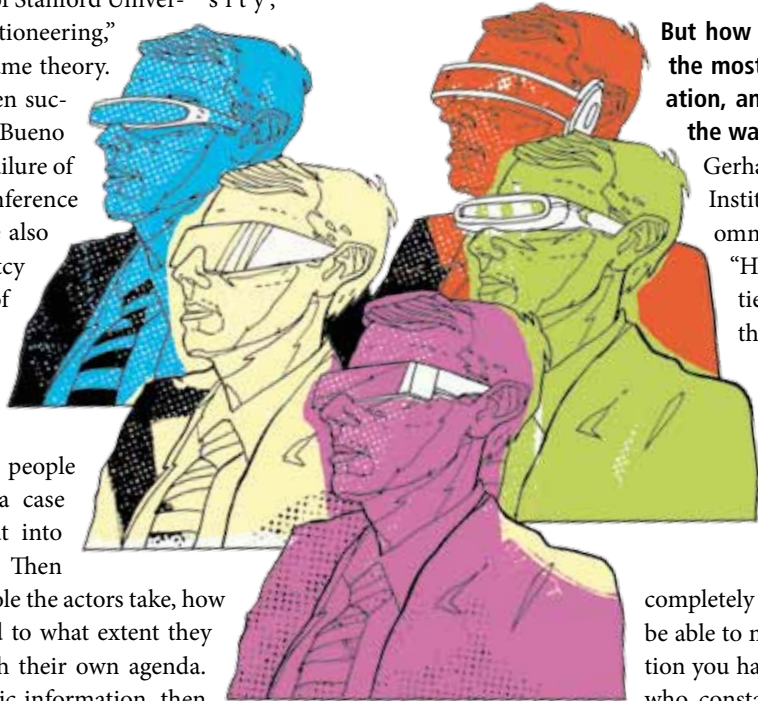
Gerhard de Haan, head of the Future Institute at Berlin's Free University, recommends asking a different question: “How should we deal with uncertainties without mistakenly re-imagining them as certainties?”

And the answer is...?

De Haan suggests taking an “accomplishability” stance – in other words, bringing enough self-confidence to the table that sudden changes don't throw you completely off track. In addition, you have to be able to make decisions even if the information you have is incomplete or unclear. People who constantly search for more information run the risk of falling into a vicious circle of fear and indecision, and they become unable to make decisions.

That's easier said than done!

That's why Gerd Gigerenzer, Director of the Munich-based Max-Planck-Institute for Human Development, tells waverers to “first, determine what you need. Then, take the first alternative that delivers that standard – and stop looking.” That way, the future will look more like an opportunity than a danger. — **Werner Tewes**



RETAIL VERSUS E-TAIL: GAME ON

As online and offline retailers continue to battle for consumers, both are feverishly working on strategies to gain the competitive advantage. “Ship from store” is the latest trend, opening new avenues for bricks and mortar stores.

Not long ago, some experts were quick to declare the demise of traditional bricks and mortar stores. Online players had seized the day, gaining market share by offering large selections, low prices, and speedy, often free, delivery. Leading the pack and upping the ante, online giant Amazon now appears close to being able to serve the majority of U.S. households with same-day deliveries soon.

But bricks and mortar stores are defying the naysayers and fighting back. Physical stores, once seen as costly compared to e-tailers' warehouses, have now been recognized by several large retailers as a strategic advantage, with stores used as assets and transformed into distribution hubs. Customers have already adopted the “click & collect” concept, ordering online and picking up in store. Now “Ship from store” sees retailers routing online orders to stores near customer locations, where store assistants are deployed to pick and pack goods, dispatching them via courier companies to customers' homes.

THE MOST IMPORTANT TREND

Faster and more cost efficient deliveries, better utilization of inventory, and the ability to gain market share versus online competitors – it's hard not to see the benefits that make “ship from store” an attractive proposition. In fact, some analysts believe it to be the most important trend shaping the future of bricks and mortar retailers in the coming years. “We're already seeing it as a major trend for fashion and apparel retailers,” says Nikki Baird, managing partner at Retail Systems Research. “For these retailers, the value in saving the sale when customers are looking for a specific color or size combina-

tion is tremendous. It not only helps make sure that every piece of inventory in the chain is working for the retailer, it also gives the retailer the opportunity to source inventory from locations that aren't selling well and avoid markdowns.”

At Wal-Mart, “ship from store” began as a pilot and quickly gained traction – now some 10% of items ordered online are routed via its physical stores. The world's largest retailer intends to roll out the concept to hundreds of stores, merging them into a distribution network alongside warehouses and online fulfillment. Target, Macy's, and Gap are among those transforming their stores into distribution hubs, with Gap's Chief Executive Glenn Murphy telling *USA Today*: “Some people talk about Amazon with their 100 distribution centers, God bless them. We have 2,600 distribution centers.”

For all its apparent attractiveness, shipping from stores instead of warehouses needs smart strategies to succeed, says Baird. “Inventory availability, having an exact view into what is actually in stock in a store, is key. This is particularly challenging when the store is open to customers, who may try on items or have items in their carts. Also, retailers will need to figure out what the most efficient method is to collect the inventory and ship it out of the store. They will also need to decide which store should be the one to fulfill and which to ship. Sometimes it may be worthwhile to source an item from a more distant store with higher shipping costs, if it means avoiding an even more costly markdown in the near future.”

However, Baird believes that the advantages are clear. “From the retailers I've talked to, the benefits significantly outweigh the costs. They are reporting sales gains, margin improvements, and lower required inventory. They are also learning a lot about how well they are – or are not – predicting demand. Having the flexibility to capture and respond to demand no matter where it occurs is showing these retailers that they are missing a lot more sales from out of stocks than they originally thought.” — **Michelle Bach**

AS “SHIP FROM STORE” LOOKS SET TO TAKE OFF, NEITHER RETAILERS NOR E-TAILERS ARE STANDING STILL

SAME-DAY DELIVERY:

eBay has announced plans to expand its same-day delivery service, ebay now to 25 major U.S. cities in 2014. Wal-Mart, Google, and Amazon also offer same-day delivery in selected U.S. cities, with HomeDepot to follow soon.

SUNDAY DELIVERY:

In the Los Angeles and New York metropolitan areas Amazon has started Sunday deliveries and plans to expand them to a large portion of the U.S. population in 2014. Sunday deliveries will also be available in seven areas in the U.K.

SAFE LOCKERS:

Amazon has introduced collection lockers at U.K. convenience stores, soon also to be launched in the U.S. with partner Staples. Wal-Mart is testing a locker service for in-store pick-up of online orders and Google has acquired locker service BufferBox.

ANTICIPATORY SHIPPING:

A new patent for “anticipatory shipping” was recently awarded to Amazon. The tool will cut delivery times by allowing the e-tailer to predict which products will be ordered by its customers before they hit the “buy” button.

DRONES:

The technical, regulatory, and logistical challenges of autonomous flight in crowded urban airspace are far from solved, but Amazon and others are toying with the idea of using delivery drones to get orders to their customers ASAP.

Illustration: Dieter Juedt; Photo: stuartbur/Getty Images

SOLUTIONS

Shipping. Fueled by LNG.

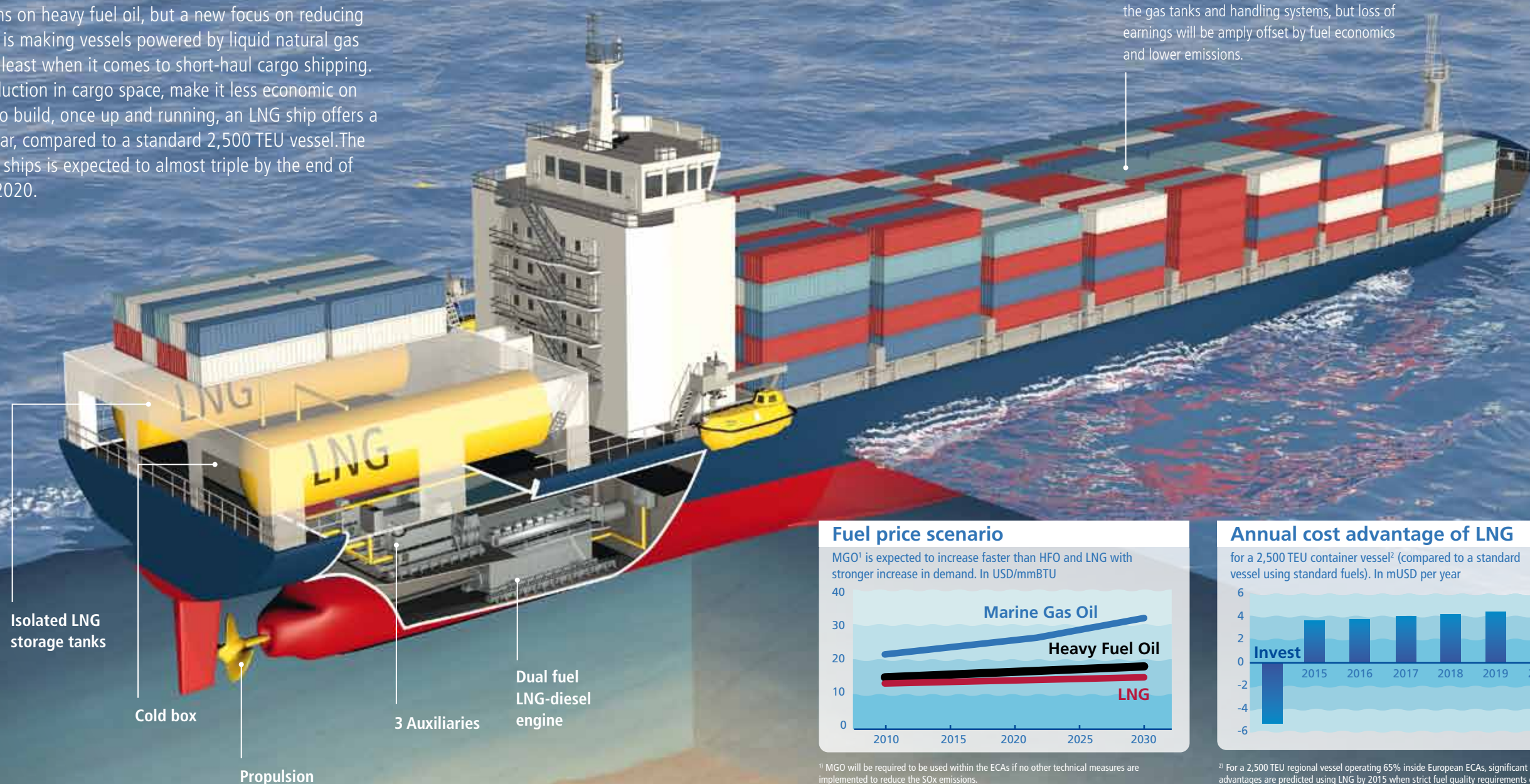
Most of the world's shipping currently runs on heavy fuel oil, but a new focus on reducing emissions, particularly of sulphur dioxide, is making vessels powered by liquid natural gas (LNG) seem an attractive alternative – at least when it comes to short-haul cargo shipping. The bigger fuel tanks and consequent reduction in cargo space, make it less economic on longer routes. Although more expensive to build, once up and running, an LNG ship offers a cost advantage of some \$5 million per year, compared to a standard 2,500 TEU vessel. The global fleet of currently 42 LNG-powered ships is expected to almost triple by the end of 2014 and reach nearly 1,800 vessels by 2020.

Refueling and Bunkering

The bunkering process presents new and unfamiliar challenges – the biggest of which is the current lack of infrastructure. One refueling option may be to swap whole tanks rather than refill them.

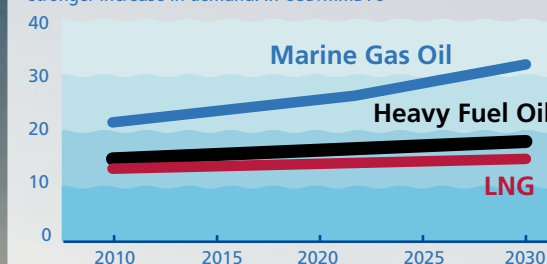
Cargo

Some cargo space will be lost to make room for the gas tanks and handling systems, but loss of earnings will be amply offset by fuel economics and lower emissions.



Fuel price scenario

MGO¹ is expected to increase faster than HFO and LNG with stronger increase in demand. In USD/mmBTU



¹⁾ MGO will be required to be used within the ECAs if no other technical measures are implemented to reduce the SOx emissions.

Annual cost advantage of LNG

for a 2,500 TEU container vessel² (compared to a standard vessel using standard fuels). In mUSD per year



²⁾ For a 2,500 TEU regional vessel operating 65% inside European ECAs, significant cost advantages are predicted using LNG by 2015 when strict fuel quality requirements enter into force.

EXECUTIVE INTERVIEW

READY FOR THE NEXT
REVOLUTION?

Bestselling author Jeremy Rifkin discusses the gains to be reaped from the Third Industrial Revolution and how the Internet of Things will change the game.

"WE ARE IN THE ENDGAME SPASMS OF THE SECOND INDUSTRIAL REVOLUTION. BUT SMART COMPANIES ARE MOVING. I TALK TO A LOT OF THEM AND THEY SEE THE HUGE POTENTIAL."

Jeremy Rifkin is a one-man think tank. The economist jets around the world to advise governments and corporations, and to give lectures at many of the world's leading corporations and academic institutions in some 30 countries. Over the last 40 years he has also written 19 books on a wide range of topics, from new advances in science and technology to global economic trends and sustainable development. Rifkin's most recent bestseller *The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy, and the World* has even inspired some global trends of its own.

In 2007, his vision of a sustainable, post-carbon economy was endorsed by the European Parliament, and is now being implemented by various agencies within the European Commission as well as the 27 EU member states. World leaders including German Chancellor Angela Merkel and French President François Hollande welcome his advice. China's Premier Li Keqiang is an outright Rifkin fan and has recommended his top economic planning and strategy officials pay close attention to the Third Industrial Revolution (TIR).

In addition to advising national governments, regions, and municipalities on developing plans for the Third Industrial Revolution, Rifkin has been a senior lecturer at the Wharton School's Executive Education Program since 1994. There he instructs CEOs and senior management on transitioning their business operations into sustainable TIR economies. Quite a few of the world's leading CEOs have also joined him at the Third Industrial Revolution Global CEO Roundtable, a cross-sector collaboration among major global companies, governments, and energy cooperatives to discuss plans for a TIR infrastructure based on renewable energy, energy storage, smart utility networks, electric vehicles, and high-performance buildings.

In your book *The Third Industrial Revolution*, you envision two futures: the collapse of economies due to oil-powered energy shortage and global warming, or the switch to renewable energies. Where will we be in 20 years?

Technology is now moving so quickly, we are on an exponential curve toward the Third Industrial Revolution. That means the switch to renewable energies.

ABOUT JEREMY RIFKIN

THE 68-YEAR-OLD ECONOMIST AND SOCIOLOGIST has written 19 books, translated into more than 35 languages. He teaches at the Wharton School at the University of Pennsylvania, is president of both the Foundation on Economic Trends and TIR Consulting Group LLC, which advises national governments, regions, and municipalities on planning for the Third Industrial Revolution.

But the United States is awash with cheap energy from fracking, China is burning coal like crazy, and the United Kingdom is planning a new nuclear plant. Only Germany and a few other small European countries are into renewables.

Shale gas is a bubble. It will plateau in the U.S. around 2020 and then rapidly decline after 2025. Fossil fuels are getting more expensive, and the civilization is made out of them. The technology of the twentieth century is based on centralized energies. That is about to change dramatically. The Third Industrial Revolution is decentralized energy, which will make every building its own power plant. Germany already has one million of these buildings. And China is getting on board really quickly.

There is a lot of talk about shifting to sustainable energy. But what is really happening?

Quite a lot. Look at Germany. The country already has almost 25% green energy. Sustainable energy is just pillar one of the revolution. Pillar two is also in place: buildings with their own energy production. Now the third pillar must be constructed: energy storage. The big energy companies like E.ON are moving there. Pillar four is communication: smart grids integrating the Internet and the energy infrastructure. Deutsche Telekom is doing this. And finally pillar five: electric and fuel-cell vehicles. Large auto companies already have the cars, and now Daimler is building fuel-cell stations. When you put all this together, you have a general purpose technology platform. And it introduces the Internet of Things.

Your new book argues that the Internet of Things will completely change the way in which business is conducted.

People think the Internet of Things is just devices connected for IT purposes. That is only the beginning. What will really happen is that three Internets will be created and merged into one. There already is a communications Internet. The Third Industrial Revolution will spur an energy Internet that is emerging now, and finally it will create a logistics and transport Internet that is new. And then everything is in place for a new productivity revolution.

What if companies don’t want to give up their old business models?

Then somebody else will be there first. Logistic companies for example. They are right at the center of the infrastructure that has to be set up. Let’s say the logistic companies set up their CPO – a chief productivity officer – who brings the three Inter-nets into one: communication, an emerging energy Internet, and the beginnings of a logistics Internet. CPOs will have in their division full knowledge of communication and IT, energy services, transport, and logistics.

So the old model of moving goods across the globe is outdated?

A lot of transport will change to continental trans-port. We are heading to continentalization. The second industrial revolution was about globaliza-tion. But now it is about continentalization because the price of moving goods across oceans and con-tinents is continually moving up. Transport com-panies are already feeling it. The Third Industrial Revolution will allow you total integration across continents. It is a tremendously exciting, challeng-ing, and uncharted territory. We are all thinking this out as we go.

Will we need more or less transport?

We’ll need smarter transport. The key is productiv-ity. Logistics now is dysfunctional, if you look at ther-modynamic efficiency. Trucks that go empty are nuts. What is the biggest single cost in logistics? Energy! Not only from moving the goods, but also warehous-ing them. Imagine what will change if energy produc-tion is moving to near zero marginal cost.

What role will the Internet of Things play in this new productivity revolution?

What the Internet of Things does is allow us to con-nect sensors to everything. This will lead to the first intelligently distributed infrastructure in history. We will have 30 to 40 billion devices connected with sensors and software by 2020 – it has just been taking off these last few months. Anybody can con-stantly monitor the big data going across the system, that will be open source. Anybody can constantly be apprised of what is going on in resource mobiliza-tion, what is happening in the warehouses and dis-tribution centers, how much is being shipped, and how the traffic on the roads right now will affect his or her efficiency in getting a product to the assembly line or the factory. What is the price of electricity on the grid right now? Is there wind coming within the next hour that will affect the prices? What is going on in retail stores and how many shoes have been sold in the last hour?



ONE-MAN THINK TANK: When Jeremy Rifkin talks, corporations and governments listen.

NEW BOOK

JEREMY RIFKIN’S BOOK
The Zero Marginal Cost Soci-ety: The Internet of Things, The Collaborative Commons and the Eclipse of Capitalism will be published in April 2014.

Why is this so important?

With advanced analytics you can create your own al-gorithms and dramatically increase your thermody-namic efficiency across the value chain – whether you are at home, in business, a factory, a whole economy. That ability to increase thermodynamic efficiency is key for the Third Industrial Revolution.

What do you mean by thermodynamic efficiency? And how does it impact productivity growth?

We misunderstood the nature of productivity in the last 150 years. We thought productivity is machine, capital, and worker performance. But these factors only account for 20% of productivity growth. The missing factor is thermodynamic efficiency, the ac-tual energy that goes into the production process. This accounts for the 80% of productivity growth. An Internet of Things can harness this and dramatically increase productivity. My estimate is that we can get from 13% efficiency, which is the maximum now, to 40% and maybe even 60%. Then thermodynamics stops you. We are on the verge of the most dramatic increase in efficiency ever seen. And we can do this at nearly zero marginal cost.

Which sectors will be affected?

Each and every one. Logistics is at the center of what

this productivity revolution can achieve. If we use big data and everything from driverless vehicles to guided technologies in the warehouse, our productivity will go through the roof. The energy of the sun and wind are limitless – and the hardware infrastructure is dra-matically declining in cost.

Many big companies are resisting change. What will happen until the productivity revolution takes hold?

We are in the endgame spasms of the second indus-trial revolution. But smart companies are moving. I talk to a lot of them and they see the huge potential. Look at IBM. Once the Koreans and Chinese got into the game, nobody needed their old boxes anymore. So IBM said, well, we will reinvent ourselves. We are in the business of managing information, not pro-ducing hardware.

But how will big players like energy suppliers rein-vent themselves?

They are moving to the new model as a service solu-tion provider. We will have tens of millions of people producing their own electricity in ten years’ time; we will have hundreds of millions in 20 years. The mission of utilities will be to drive change. They will manage the energy flows of the companies they are servicing,

THE FIVE PILLARS OF THE THIRD INDUSTRIAL REVOLUTION

RIFKIN SAYS THE THIRD INDUSTRIAL REVOLU-TION WILL CREATE THOUSANDS OF BUSI-NESSSES AND MILLIONS OF JOBS, and usher in a fundamental reordering of human relationships, from hierarchical to lateral power, that will impact the way we conduct business, govern society, educate our children, and engage in civic life. He sees the Third Industrial Revolution as having five “pillars.” These are:

- 1 Shifting to renewable energy
- 2 Transforming the building stock of every continent into green micro-power plants to collect renewable energies on-site
- 3 Deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies
- 4 Using Internet tech-nology to transform the power grid of every continent into an energy Internet that acts just like the Internet
- 5 Transitioning the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell green electricity on a smart, continental, interactive power grid.

Learn more about the Third Industrial Revolution at:

 thethirdindustrial-revolution.com/

just as IBM and Cisco now manage their information flows. The way they will make money is not so much by selling energy but by sharing the productivity gains that they achieve in production. The Internet of Things is key here. Only by integrating everything can you unleash these productivity gains. The less energy they sell, the higher the thermodynamic efficiency of the company that is their client.

What can act as a game-changer?

The energy Internet will move on an exponential curve, just like the information Internet. There are al-ready areas where you have near zero marginal cost. One-third of the global population uses their mobile devices at near zero marginal cost. Now imagine this happening on the emerging energy Internet. Imagine driverless vehicles powered with green energy – that is near zero marginal cost for energy and labor. And it is possible within five to ten years. We have them already in the factories. In 2025, at the latest, we will have them on the road.

And who will bring my parcel to the office?

You will be notified on your mobile device that the ve-hicle is approaching and you can collect your delivery. Or the delivery will be stored for you at an easy and 24/7 accessible place, close to your home or in the of-fice building. That is not science fiction, it is happen-ing right now.

But I want my parcel delivered by a person!

Dream on! Think of all the areas where we don’t need or don’t want human intervention anymore – from the cash machine to online airline check-in to automated checkout counters in the grocery store. You have voice recognition everywhere now.

Do we need other people in companies to manage all this?

Yes, there is a real generational shift going on. Older people are used to a top-down, hierarchical manage-ment model. When a young person looks at institu-tional behavior they ask, is this centralized, top-down, proprietary, and closed or is it open source, lateral, distributive, and peer-to-peer?

What new set of leadership qualities is needed?

For my generation, lateral power is an oxymoron. Power has to be pyramidal. But everyone under for-ty has in some form grown up with the Internet and they know that power is the ability of giving to the network and enhancing it. The more the merrier. It is completely against Adam Smith and his idea of the enlightened self-interest independent of caring for the other. It is a totally different management style and a paradigm shift in the best way. – Margaret Heckel

Photos: Reto Klar

IQ & EQ – FINDING THE BALANCE FOR BUSINESS SUCCESS

The often dramatically different communication styles of EQ-driven and IQ-driven people can clash in business – yet this is a world where it is crucial to make good personal connections. So what are EQ- and IQ-driven personalities? And how easy is it for each to recognize and adapt to the other?

How would you define yourself? As an IQ-driven personality? Or an EQ-driven personality? The answer could be more important than you think, particularly when these two distinct types clash in the world of business.

Take the example of Daniel, a company middle manager with a high emotional intelligence quotient (EQ). As such, he is well able to recognize his emotions and those of others around him; his communication style is intuitive, motivational, and engaging; and he naturally uses empathy, as well as creative and emotive language – such as “I feel” and “I wish” – in his emails and office pep talks to make a connection with his staff.

His company director, Sunita, meanwhile, employs a direct, no-frills communication method. She requires “only the facts” and thrives on logic, and her preferred head-over-heart method of communication is sparse and to the point. Hers is a high IQ (intelligence quotient) functioning approach, which tends toward the cognitive, intellectual, analytical, and rational.

Two different people, two jarring, contrasting styles. And this is where a difficulty can arise in business because while both are shooting at the same goal, they might as well be playing for different teams. As a result, Daniel and Sunita can suffer an awkward breakdown in communications, simply because they are not operating on each other’s wavelengths. Worse, their clash of cultures could have an impact on their working relationship.

Of course, a spiky IQ/EQ friction isn’t simply restricted to the office because it can also be an issue in the wider business world, for example when EQ-driven Daniel meets IQ-driven customers, prospective clients, or peers and fails to make a connection with them. It may even be a contributing factor in his company not winning a lucrative contract. Either way, be it an inter-

“I KNEW WHAT TO DO, BUT I LACKED THE EMOTIONAL INTELLIGENCE THAT WOULD SHOW ME HOW TO ACCOMPLISH IT.”

Amy Beth Miller, writer and editor

Daniel Goleman, emotional intelligence pioneer, talks about EQ and how it can be used in the workplace:

 [tinyurl.com/eq-work](https://www.youtube.com/watch?v=tinyurl.com/eq-work)

nal or external IQ/EQ conflict, it has the potential to hamper good business, or turn good business bad.

So why do we tend to favor one communication style over the other? “Neuroscience points out great differences between individual mental maps and the ways people perceive, filter, and store information,” says Dr. Margareta Sjölund, a pioneer in emotional intelligence and the founder and Chief Psychologist at Kandidata Asia, which assists companies with human resource interventions. “Each person’s unique personality colors and propels communication. But research also shows that we tend to develop one of two distinct communication styles: IQ-dominating or EQ-dominating.” That said, as individuals, we are not simply all highly IQ-driven or all highly EQ-driven. In reality, we have IQ or EQ tendencies: some strong, some not so strong.

TAILORED COMMUNICATION

Yet it’s undeniable that, because personal connections are so crucial in business, each side can gain advantages by recognizing and adapting to the other. They can do this by stopping to reflect – then tailor-

ing their communication styles to the situations in which they find themselves. “Becoming aware of communication styles can unlock new ways of interacting with others,” says Sjölund. “It impacts how you manage relationships, and makes a difference in how you facilitate teamwork.” That doesn’t mean this adaptation is easy. If you are an EQ-driven person surrounded by IQ-driven people, restricting your creative and emotional language may be harder than it sounds, particularly when straightforward words, blunt logic, and briefer emails are not your preferred methods of connection. On the plus side, EQ-people will already be tuned into the needs of others; and this knowledge and awareness should help them facilitate better communication with IQ colleagues.

Likewise, if an IQ-driven person seeks better communication with EQ-driven people, he or she needs to understand that individuals have different “drivers” and, as such, not all contact needs to be logical and rational. A dose of self-awareness can help an IQ person realize the effect they have on others. When they intellectualize it, it should be immediately apparent to them.

ABOUT DR. MARGARETA SJÖLUND

Dr. Margareta Sjölund is Founder and Chief Psychologist of Kandidata Asia. She is an advisor to blue chip companies and a global expert in measuring and developing EQ.

 [kandidataasia.com](https://www.kandidataasia.com)



Understanding emotional intelligence certainly helped writer and editor Amy Beth Miller. “I can recall times in my career when I failed to connect with people, to effectively describe my position to others and to provide feedback in a constructive way,” she says on The Organized Executive’s Blog. “I knew what to do, but I lacked the emotional intelligence that would show me how to accomplish it.” Through years of reading and learning about the subject and “taking time to understand other people’s perspectives,” Miller learned to tailor how she communicates with different people. The effect has improved her social skills and her ability to handle stressful situations.

Perhaps the most successful business people are a balanced blend of IQ and EQ. They are able to think rationally and logically, for example, in business meetings where numbers and efficiency count; but they are also able to empathize with others, understanding what motivates and drives their staff – and wins customers. So IQ or EQ? If you define yourself as one or the other, it makes sense to work on your style and bring in the best of both. — **Tony Greenway**



VIEWPOINTS

DELIVERED. LOOKS INTO THE FUTURE WITH ...

Elon Musk

Elon Musk is not a man of modest ambitions. The inventor, entrepreneur, and CEO of Tesla Motors and SpaceX wants nothing less than to hasten a global transition to sustainable transport while ensuring that humanity becomes a multi-planet species.

Calling Elon Musk an “innovator” is a bit like calling Richard Branson “a businessman.” It’s true, but also a wild understatement. *Esquire* has listed Musk as one of the 75 Most Influential People of the twenty-first century. He made his first fortune in 1999, selling his Internet software company for over \$300 million. He then co-founded online payment system, PayPal, and in 2003 followed up with Tesla Motors, the ground-breaking electric-car company. Tesla’s mission “to accelerate the world’s transition to electric mobility” has been one of Musk’s central interests for the best part of 20 years, ever since he was a physics student working on ultracapacitors. He remains Tesla’s CEO and head of product design.

Then there is SpaceX, the space exploration company Musk founded in 2002 to design, manufacture, and launch spacecraft with the ultimate goal of “enabling people to live on other planets.” Musk is CEO and chief designer, and watched SpaceX make history in 2012 when its Dragon spacecraft attached to the International Space Station and returned safely to Earth.

Somehow he has also found time to conjure up the concept of the Hyperloop, a super-fast electro-magnetic inter-city transport system which would, for instance, make the 600-kilometer journey from San Francisco to Los Angeles in just 35 minutes. This is now being developed by Hyperloop Transportation Technologies Inc., co-led by Marco Villa, former director of mission operations for SpaceX, but without Musk’s direct involvement. *Forbes* recently estimated his net worth at \$6.7 billion, and ranked him number 47 on its list of the World’s Most Powerful People. And he’s still only 42 years old.

Where do you come up with all your ideas?

Mostly in the shower. Probably I thought of something while I was dreaming and the subconscious thoughts pop to the surface when I am awake and under the shower.

What sets you thinking about ideas such as the Hyperloop?

Usually there’s something that makes me not like the future, or some element of the future, and then wonder if there’s some way to fix that. In the case of the Hyperloop, they were building this train in California, and it seemed very expensive, not that fast, and not as good as what’s been done in China or Japan. And I was, like, wow, that’s



TESLA MOTORS: Founded in 2003, Tesla designs, produces, and sells electric cars such as the Model S luxury sedan, and the Model X SUV. It is also developing a network of charging stations and service centers in the U.S. and Europe.



SPACEX: Space Exploration Technology Corporation, founded in 2002, develops and builds rockets and spacecraft such as the Falcon series of launch vehicles, and the Dragon spacecraft that docked with the International Space Station in May 2012.

Learn more about Tesla, superchargers, and Elon Musk at:

 [teslamotors.com](https://www.teslamotors.com)

depressing. It bothers me when the future seems to be getting worse.

So what is your vision for the future?

In the very long term, it’s vital that humanity is a multi-planet species so that if something terrible were to happen to one of the planets, then civilization would continue and the light of consciousness would not be extinguished. For the first time in the history of Earth, it’s possible for life to extend beyond it, and for us to send people to Mars and create a self-sustaining civilization there. It’s important that we take advantage while that window is open.

Why might the window close? Is the Earth facing planetary catastrophe?

The biggest challenge humanity faces is sustainability. Are we going to solve sustainable energy production and consumption, or not? If we don’t, well, the results will be very bad from an environmental standpoint, and also economically. As oil becomes more scarce, the prices will rise and we’ll have an economic collapse. Basically we’ll see global oil consumption increase probably 50–80% over the next 20 years. It’s a pressing issue for the whole world, because we all share the same atmosphere. The faster we can transition to sustainable transport the better.

Is Tesla Motors part of that transition?

Our goal at Tesla is pretty straightforward. We’re obviously a very tiny car company, but we’re trying to show that electric cars can be just as good, if not better, than gasoline cars. We will serve as ambassadors for the electric future. If we are successful, it will convince big car makers to accelerate their plans for electric cars.

With electric cars the main issues are range and charging. How do you solve that?

Obviously we’re working on that. In Germany, for example, we are making the biggest investment in supercharging infrastructure anywhere outside of the United States. Superchargers will be along the highways, throughout Germany and Europe by the end of 2014.

And how do you recharge your own batteries?

I spend time with my kids. We see a movie or go to the beach, although if they could play video games all day, they probably would.

There weren’t so many video games around when you were a boy. What did you do? Build rockets?

I did build my own rockets when I was a kid. And I built a radio, and did a lot of computer programming. I guess at some point I thought it would be cool to invent things, and it seems to have worked out OK.

— Dirk Kunde & Tony Greenway

SUPPLY CHAIN'S RESILIENCY IMPERATIVE



**AN ESSAY BY
LISA HARRINGTON**

Strategic consultant, academic, and co-author of three books, Lisa Harrington offers a global supply chain perspective. She is Associate Director of the Supply Chain Management Center at the University of Maryland and the President of the lharrington group LLC, a firm providing strategic consulting services across global supply chain strategy, operations, and best practice.

Global business is at a tipping point. Volatility has emerged as a systemic condition, disruption occurs at any time, often with unprecedented magnitude, and there no longer are discrete sets of risk events with periods of stability in between. When disruptions occur, the global supply chain – now an intricately intertwined web – acts as a massive central nervous system, spreading impact instantly among all the connected parties. Effects cascade across the extended supply chain, and frequently gain intensity as they ripple outward from the epicenter.

In this environment, traditional supply chain management models begin to break down, bending under the strain of the unknown and the unexpected. Just in time, lean, and other acknowledged best practices create highly efficient supply chains. As it turns out, however, these supply chains may also be brittle and high risk.

We see this clearly in recent events such as the Fukushima tsunami and nuclear meltdown in Japan. As a result of the combination catastrophe, automakers and high tech companies experienced shortages of critical components. These shortages, combined with rolling power blackouts across Japan, forced production shutdowns not just in Japan, but worldwide. The disaster, including its impact on manufacturing and supply chain output, reduced Japan's gross do-

mestic product (GDP) by almost 4% for the quarter of January through March 2011.

SUPPLY CHAINS IN METAMORPHOSIS

Supply chains today must be able to flex at a rapid pace – to sense and respond to change or disruption at a new level. But the tried and true approaches to supply chain management are not up to the task. The time has come for a radical rethinking of supply chain management models.

The new supply chain must enable organizations to anticipate and mitigate instabilities of unprecedented amplitude, frequency, and duration. We call this new discipline supply chain resiliency management. It is all about a firm's ability to bounce back after a disruptive event of any scale – from an everyday occurrence to a catastrophic convergent disaster.

Supply chain resiliency management calls on practitioners to abandon the traditional approach to responding to supply chain risk, which follows this predictable pattern:

- Be prepared when events happen
- React – according to plan if possible
- Recover
- Wait for the next event to happen
- Start the cycle again.

DE-RISKING SUPPLY CHAINS

Organizations must take measured and appropriate steps to de-risk their supply chains. The first step in this process is recognizing that supply chain volatility occurs at three distinct levels:

- Macro factors in economy and society – e.g., growth or decline of gross domestic product (GDP), political upheaval
- Industry/firm level factors – e.g., disruptive technology or products, consumer behavior, emerging markets growth
- Supply chain factors – capacity constraints, transportation disruption, product/material shortages.

Volatility can emerge simultaneously in each of the levels and quickly spread in multiple directions across highly porous level boundaries.

In this context, building resiliency in the supply chain requires fundamental changes in the way supply chains are organized and operated. The new approach to supply chain resiliency can be discussed in three contexts, as explained here.

1. The need for a wholly new model of supply chain risk management that goes beyond a narrow, sequential identification and management of operational risks. This new model needs to account for systemic risk because of the increasing fragility of interlocked systems and networks. It must also fully recognize that the supply chain itself is a source of extreme volatility and acts as a destabilizing agent in ways never or seldom previously acknowledged.

2. The need for a wholly new model of volatility management that spans the “multidimensional” supply chain. The model must encompass not only the traditional product supply chain, but also the end-to-end service, financial, and cyber processes to which the supply chain management concept is increasingly being applied. Why is this important? Traditional product supply chains depend to a significant degree on support from service, financial, and information organizations and processes. Without that support, a supply chain's ability to support corporate strategies will be jeopardized. These seemingly disparate types of supply chains are really facets of a single, multidimensional supply chain. The multidimensional nature of today's supply chains requires a new type of managerial oversight, one that is enabled by a real or near-real-time “control tower” view of the extended supply chain. Such visibility is a key enabler of resilience. Without it, true resilience is impossible.

3. The need for a wholly new model of supply chain network efficiency that replaces traditional economies of scale and scope with those that are based on “contingent scale.” Contingent scale is the ability of the enterprise to rapidly size its assets, services, and capabilities up or down as required by market and business volatility. These resizing capabilities are executed through flexible contracts with external providers. They are the hallmark of the resilient enterprise.

Shifting to a contingent scale model is a big change for most existing supply chains. In the present environment, however, companies can no longer afford to operate inflex-



“SUPPLY CHAINS TODAY MUST BE ABLE TO FLEX AT A RAPID PACE – TO SENSE AND RESPOND TO CHANGE OR DISRUPTION AT A NEW LEVEL.”

ible, fixed supply chain networks and capabilities. Instead, they must assemble and orchestrate highly adaptive, robust networks that can scale capacity and throughput up or down with speed that matches volatility in market conditions – both supply and demand. These new contingent scale networks have a tremendous competitive benefit to companies: they enable them to hedge financial risks, conserve cash, and – most importantly – have the resiliency to adapt to whatever challenges the world presents.

Learn more about supply chain resilience at:



Illustration: Bernd Schifferdecker; photo: Paul Souders/Corbis



WHAT’S THE STORY, MR. HERRIOTT?

“IF PEOPLE WORK TOGETHER, THEY CAN DO ANYTHING.”



LOGISTICS ON THE GROUND:
Fionn Herriott helps with loading
and unloading of relief goods.



Aftermath: A family affected by
typhoon Haiyan waiting for help.



Team effort: Working together to
help people in desperate need.

Learn more about DHL’s Disaster
Response Teams at:

tinyurl.com/DHLhelp

COORDINATING HELP AFTER HAIYAN

When I was flown to the Philippines to be part of DHL’s Disaster Response Team I had no idea what to expect. Normally I work as an Express Compliance Officer at DHL Express in Hong Kong, so this mission was nothing I could prepare myself for physically or emotionally.

We were based at Mactan Cebu Airport, where commercial cargo aircraft would land and offload relief goods such as tents, blankets, medical supplies, kitchenware, solar lamps, and generators. There could be four 747s unloading 400 tones of goods which would be left all over the airstrip. Our logistics expertise was used to coordinate that offload with NGOs (Non Governmental Organizations) and the military, so that the right goods could be loaded as quickly as possible onto Hercules C130 transporter aircraft and taken to those who needed them most. It was a big job: it could take a day to line up 100 tones of commercial pallets.

We were recognized by all operators as a vital link in the supply chain. At the start, though, there wasn’t a system so it was chaotic with everyone needing help – and everything a priority. You can either be afraid of chaos or respond to it. My reaction was to respond to it.

At DRT, we also acted as a staging post amid all the confusion

for the NGOs and military to come together to get things done. We fostered relationships with major players who felt very comfortable coming to our tent – actually our table, because at the start of the operation, we didn’t even have a tent – to talk to us and each other. We were on a first name basis with everyone at the strip, and I like to think we had a “can do” reputation. You know: “You need something doing? Go talk to the DHL guys.” The spirit and camaraderie was amazing and we all knew what we wanted to achieve. We were doing something positive for people in desperate need, so we wanted to do it fast – and do it well. That was the drive for everyone in the DRT. They finally had their chance to shine and, every moment, wanted to get more and more involved. Now I’m back home, but myself and my military and NGO contacts want to build on this experience with a situation report that recognizes what went well – and also what could be done better. That means the next time this happens everyone can hit the ground running. Working with the DRT was a life-changing experience for me. I was in the Philippines for over three weeks, poured my heart and soul into it, made incredible friends, and I don’t mind saying I was teary eyed on the plane as I was flying out. We all proved that if people work together, they can do anything.

400
VOLUNTEERS

The number of trained employees who have registered as volunteers with DHL’s DRT network. This spans the Americas, Middle East/Africa, and Asia Pacific in order to be as close as possible to affected areas.

20
DEPLOYMENTS

The number of deployments worldwide that DRTs have undertaken since 2005.

72
HOURS

A DRT can be deployed within three days when logistics expertise is needed in a disaster situation.

PUBLISHED BY
DEUTSCHE POST DHL
HEADQUARTERS

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Commercial Register No.:
Registration court Bonn
HRB 6792

Turnover Tax ID No.:
DE 169838187

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Paper:
This paper is made from 100%
recovered paper. We are
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Photos: Fionn Herriott(4), Shell



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