DHL

Delivered.

THE GLOBAL LOGISTICS MAGAZINE

ISSUE 01/2015

BUSINESS
PACIFIC HEIGHTS
Learn why Japan, Vietnam and the Philippines are lands of opportunity

SOLUTIONS
THE INNOVATION GAME
Explore some creative minds and innovative spaces

VIEWPOINTS
FOCUSED ON HIS GOAL
Find out how Manuel Neuer has developed a winning mentality

FOCUS
MADE OF STRONG STUFF

Engineering & Manufacturing navigates volatile markets

DEAR READER,

Volatile commodity prices are a frequent topic these days. The ups and downs of everything from metals to minerals to grain can create an uncertain outlook for engineering and manufacturing companies in particular. But as our E&M sector focus explains, companies are becoming increasingly adept at tackling unpredictable economic conditions and thriving despite the odds.

Latin America expert John Price says falling commodity prices have been challenging for natural resource rich countries in the region, but have set the stage for "a renaissance in manufacturing," creating a 'tale of two economies'.

Agility is often required to stay ahead. At GE this means a focus on simplicity and emphasis on traditional strengths as an inventive engineering and manufacturing organization, as GE's Mark Chadwick explains.

Innovation is a key focus for us as DHL's Innovation Center in Germany relaunches this spring and work on a new Innovation Center in Singapore starts. Check out 'The power to innovate' to explore what sparks innovation and what makes innovators tick.

I hope you'll enjoy your read!

Bill Meahl
Chief Commercial Officer, DHL

Cover photo: Herrenknecht AG; **Photos on this page:** DHL, T. Ernsting/laif, L. Vallecillos/Vwpics/ddpimages, J. Salter/Redux/laif, iStockphoto, Fotolia, A. Mallari/DHL

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SOLUTIONS

VIEWPOINTS

A NOTE FROM THE EDITOR

Perhaps you were among the audience of around one billion who tuned in across the world to watch the World Cup Final 2014 in Brazil. If so, you would probably have noted Manuel Neuer, Germany's goalkeeper, dubbed the 'sweeper-keeper' for his unique style of working the field well outside his goal box. *Delivered.* had a chance to spend some precious moments with Manuel during a training camp with his club, Bayern Munich. Even if you're not a sports fan, we hope you will enjoy the views on motivation, risk and developing a winning mentality by the man who is widely considered the best goalkeeper in the world.
Michelle Bach

WEB LINK VIDEO LINK
The icons above indicate additional online resources.

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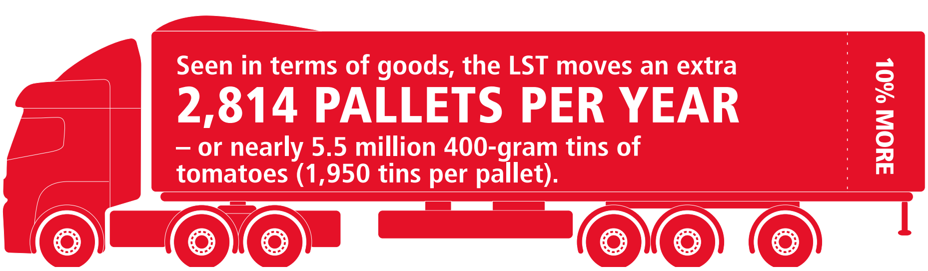
NEWS

CHICAGO STOREYS

DHL Global Forwarding cut the ribbon on its new $35 million (€30 million) Chicago facility in January, unveiling the largest free-standing building in DGF's worldwide network. The three-storey eco-friendly facility offers more than 491,000 square feet of office and warehouse space located in the cargo zone of Chicago's O'Hare International Airport.

The building, a bonded Container Freight Station, is expected to be Transported Asset Protection Association Americas (TAPA-A) certified in the second quarter of 2015 and meets stringent security handling guidelines, making it a leader in the fight against cargo theft. The Life Sciences sector is also well catered for, with two temperature-controlled chambers to process pharmaceutical, biotech or medical devices, and the facility is established as a Life Science Cold Chain Certified Competency Center to support DHL's THERMONET solution for temperature-controlled heavy air freight transportation.



INNOVATION – AT A STRETCH

With bigger trucks now allowed on UK roads, supermarket discounter Lidl asked DHL to help trial a longer trailer which is used in Germany. DHL bought the 14.6-meter long semi-trailer (LST) – an investment of about £70,000 (€85,000) – and fitted it out to Lidl's specifications. A single truck can now deliver ambient, chilled and frozen foods in one consignment, saving time and money, with three extra euro pallets per load.

> *"We want to show innovation – how it works and how it can help the business."*
>
> Richard Cooper, head of transport at DHL Supply Chain Retail

The amount of letters and packages that can be transported by DHL's new helicopter service in London – the first ever scheduled delivery service by helicopter for financial services customers in the UK market.

tinyurl.com/del-shipping

RESPONSIBLE REPORTING

Long-term success is built on responsible business practice, which is one reason why Deutsche Post DHL is always finding ways to enhance its Corporate Responsibility (CR) initiatives. The Corporate Responsibility Report 2014 shines a spotlight on its "Living Responsibility" CR strategy and shows the progress the Group has made on its way to becoming a benchmark in responsible business. It also reveals which CR issues are most important to Deutsche Post DHL, and how it combines commitment to responsible business with bottom-line business interests. The report is available from 11 March on:

tinyurl.com/del-corporate

Photos: DHL(5), iStockphoto, Getty Images, Speedfighter/Fotolia, Jens Wolf/dpa Picture-Alliance

PRICE OF PASSAGE

The most expensive Panama Canal toll fee ever paid was by a Disney cruise ship in May 16, 2008, which was charged $331,200 for a single west-to-east passage. Canal tolls are calculated based on the ship's measurements, the type of vessel and the number of passengers or the amount of cargo on board. As a rule, cruise ships pay between $80,000 and $300,000, while loaded container ships are charged from $50,000 to $250,000. Around 50 vessels pass through the canal daily.

CITIES GET SMART

The global number of smart cities will quadruple to 88 by 2025, says a new report from research agency IHS Technology. The report also notes that annual investment in smart cities – where information, communication and technology are integrated across urban infrastructure such as transport and energy – is set to surpass $12 billion in 2025.

Now trending

Self-driving vehicles in logistics is the latest in a series of reports developed by DHL Trend Research, a dedicated unit that focuses on researching, analyzing, and ultimately leveraging new trends in the logistics industry. Highlighting the key elements and incredible potential of autonomous technologies, the report explores use cases for self-driving vehicles across various industries and along the entire logistics value chain. To download the latest trend papers please visit:

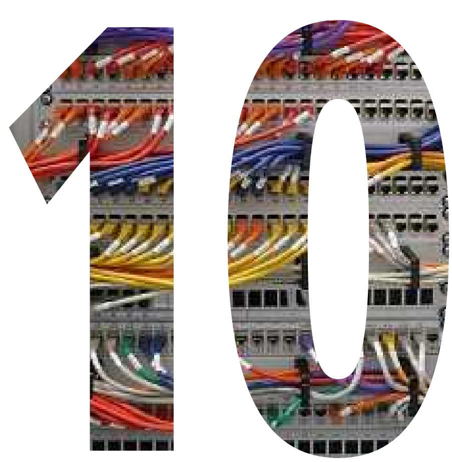
tinyurl.com/del-vehicles

CAN YOU RISK IT?

When it comes to managing risk in the supply chain, getting timely information is critical. DHL's Resilience360 team, which provides risk assessment, incident monitoring and risk response now offers customers the opportunity to sign up to its 360° INSIGHTS risk intelligence bulletin. This weekly bulletin is a comprehensive summary of potentially disruptive events taking place around the world. It provides you with actionable intelligence sourced from the Resilience360 platform, so that you can make well-informed decisions to keep your supply chain safe and resilient. Sign up for a free three-month period at:

tinyurl.com/del-resilience360

BIG DATA



TERABYTES:

The amount of information a Boeing jet generates per engine for every 30 minutes of flight.

CRACKING THE CODE

The invention of the humble bar code – which celebrates its 45th birthday this year – revolutionized the logistics industry, making track and trace an essential feature of supply chains.

Yet the idea of a universal product code didn't really take off until 1970, when the U.S. National Association of Food Chains commissioned a proposal for a bar code-style system. The initial idea was developed by IBM and the U.S. grocery industry felt its worth first when, on June 26, 1974, Clyde Dawson, a customer at a supermarket in Troy, Ohio, became the first person to have his shopping scanned at the checkout using the new code. His purchase? A 10-pack of Wrigley's Juicy Fruit chewing gum. How times have changed. These days, complex global supply chains could not function without bar codes and their ability to trace goods and connect manufacturers, logistics providers and consumers.

POWER TO THE PUPIL

Standard shipping containers have been turned into solar-powered classrooms for African school children. The innovation is a response to those parts of the world where a lack of reliable and affordable electricity can be a real barrier to learning: some schools cannot keep the lights on and power a computer at the same time. Computer giant Dell has built one classroom in Lagos, Nigeria, and another at a health centre in Kensington, South Africa, using shipping containers fitted with solar panels that provide 100 percent of power for the technology inside. The innovations don't stop there: a donated Dell WyseTM computing system networks the teacher's PC to the workstations of students, many of whom have had little or no previous exposure to technology. Dell plans to replicate the model elsewhere, directly helping three million students across the developing world.

tinyurl.com/del-solar

OCTOBER 06-08

Save the date for Engineering & Manufacturing!

In Amsterdam, Netherlands, October 6-8 2015, DHL's E&M conference offers invaluable opportunities for cross learning, experience sharing & peer-to-peer discussion. For more information contact:

CSIEM.communications@dhl.com

FREQUENT FRYER

British Airways' fish-and-chip supper – which reached short-haul passengers last summer courtesy of DHL Supply Chain and its catering supplier Green Gourmet – has won sizzling acclaim from the British press. A first for airline meals, this flying version of a traditional British dish, complete with tartar sauce and vinegar, was praised in The Guardian's Word of Mouth online food blog.

LIVING RESPONSIBILITY

ON GARD

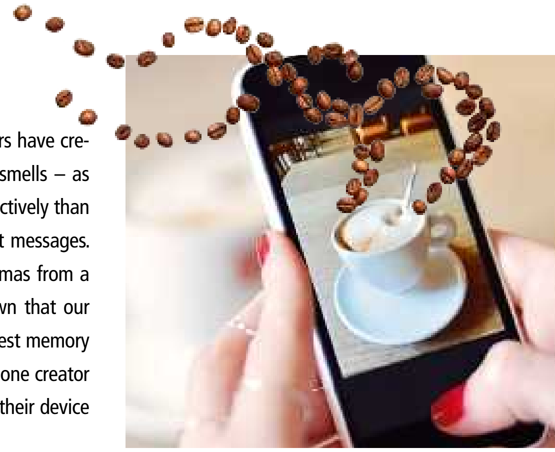
Just over a decade ago, an estimated 230,000 people lost their lives as the Indian Ocean tsunami devastated low-lying coastal areas. Although nothing can be done to stop a similar tsunami in the future, having plans in place to deliver humanitarian aid on the ground as quickly as possible is vital in the aftermath of such a disaster. Deutsche Post DHL, in partnership with the United Nations Development Programme (UNDP), has developed the Get Airports Ready for Disaster (GARD) concept: a training program for local airports to prepare handling a surge in aid traffic. In December 2014, as the world marked the 10th anniversary of the tsunami, DHL aviation experts held a four-day GARD training at Bandaranaike Airport in Sri Lanka. GARD has already been implemented at 28 airports, with DHL volunteers training more than 500 participants worldwide in on-site logistics support for disaster preparedness. As DHL's director of humanitarian affairs Chris Weeks says: "Efficient airport logistics are critical to getting aid to the people who need it."

tinyurl.com/del-GARD

Photos: Dell, M.Studio/Fotolia, DHL(3), iStockphoto(2)

HEAVEN SCENT

If you think smartphones already rule our lives, take a deep breath because technology companies are trying to figure out where to take our favorite gadgets next. Sony has made its Xperia Z mobile waterproof, for example, allowing users to film in HD quality under water, or take a call while in the shower. But what if you could extend the reach of your phone to some of your other senses? Fancy sending your loved one the scent of a rose? Or texting your friends with the aroma of the flat white you've just bought from the cafe? It sounds like an April Fool, but a team of scientists, artists and innovators have created the oPhone – which can indeed send smells – as a way of communicating emotions more effectively than those annoying emoticons at the end of text messages. The oPhone will allow users to combine aromas from a palette of 32 different scents. It's well known that our sense of smell can evoke some of the strongest memory or emotional responses, and the team at oPhone creator the Olfactive Project are also looking to pair their device with entertainment systems.



JUNE

16-17

DHL's 15th Life Sciences & Healthcare Global Conference

in Hamburg, Germany, on June 16-17, 2015 – engaging with LSH industry peers, leading suppliers and DHL experts. Register here:

tinyurl.com/del-event

DEUTSCHE POST DHL JOINS THE CIRCLE

Deutsche Post DHL has been honored as a member of the Ellen MacArthur Foundation's "Circular Economy 100" – part of a team of companies, innovators, and regions that have joined forces to contribute to a renewable, circular economy. Dame Ellen MacArthur – the fastest person to circumnavigate the globe single-handed – launched the Foundation in 2010 and has become a vociferous champion of the circular economy. Deutsche Post DHL impressed the Foundation with its GoGreen Group program, its work on supply chain optimization, its reduction of CO_2 emissions, use of renewable energies, the involvement of its employees in environmental programs and its long history of return logistics. "Being accepted into this group is a confirmation of our focus on sustainability. The membership also provides a good platform for tackling the major challenges of the future together," said Christof Ehrhart, EVP Corporate Communications and Responsibility at Deutsche Post DHL. "We all know that resources are limited, that our climate is being affected by carbon emissions, and that our consumer behavior may lead to greater problems in the future. Joining ideas and forces to tackle these challenges is an important step for coming generations."

tinyurl.com/del-ellenmacarthur

MAKING A DIFFERENCE, ONE PARCEL AT A TIME

'The Power of Global Trade' is the theme of DHL's new global advertising campaign which shows how, one package at a time, global trade is making a difference to people's lives everywhere. The cross-media campaign includes a stunning commercial directed by multi-award winning director Frederic Planchon. The campaign starts off with an ad featuring an open letter by Deutsche Post DHL Group CEO Frank Appel, highlighting the importance of global trade (See last page). Watch new TV commercial and exclusive behind the scenes footage on:

tinyurl.com/del-globaltrade

LOGISTICS FOR A WINNING TEAM

What does a winning team need for eight days? DHL, official platinum partner and international logistics partner to the world's biggest football club, Bayern Munich, shipped 1607kgs in 60 packages to the club's recent winter training camp in Doha, Qatar.

BUILT TO WITHSTAND TOUGH TIMES

Volatile, and currently low, commodity prices create an uncertain outlook for engineering and manufacturing companies, but the sector is becoming increasingly adept at navigating stormy economic conditions.

HEAVY DUTY:
Market volatility has had a dramatic impact on the companies that design, build and maintain mining equipment.

TAKING STOCK: Investors have been monitoring volatile commodity prices around the world.

Between the end of 2008 and early 2011 the price of copper tripled, reaching almost $10,000 per tonne. By mid January 2015 it had fallen back to around $5,500, losing almost half its value in the next four years. Over the same four-year period, the price of a tonne of wheat has fallen from $430 to $250. A barrel of oil was trading at less than $50 in January 2015, down from a peak of more than $140 in mid 2008. Even worse analysts' forecasts for the future prices of these commodities differ widely. For consumers, the effects of these dramatic price swings are diluted before they reach the supermarket checkout or the gas station forecourt. But, for the companies that design, build and maintain the equipment used to dig metal ores out of the ground or bring crops in from the fields, such volatility can have a rapid and profound impact on demand. In the course of 2014, for example, iron ore producers were reported to have cancelled or put on hold more than 20 new mining projects, as the price of the commodity fell 50 percent in a year. Similarly, low crop prices leave farmers with less cash to spend on upgrading or replacing tractors and harvesting machines. Some U.S. manufacturers expect sales of large equipment to be down 10 to 15 percent in 2015, suggests a trade association spokesman.

Low commodity prices don't always mean slumping sales for engineering companies, however. According to Georgios Nikolaidis, Senior Economist at the Engineering Employers Federation, a trade association for engineering and manufacturing companies operating in the UK, the impact of this year's steep drop in the price of oil and other commodities has varied considerably between different manufacturing organizations. "Some companies have been hit very hard with the cancellation of projects," he says, "But energy is also the largest input cost for many manufacturers, and for the UK industry, which manufactures higher value niche products, there is not much price sensitivity, so we have anecdotal evidence that manufacturers are (able) to rebuild their margins rather than to reduce prices." In the medium term, he says, lower energy costs should be good news for energy intensive sectors like chemicals or metals production, which in turn should give a boost for companies that supply equipment in those markets.

Structural shifts

Look behind the short-term headlines and the picture becomes even more nuanced. There are plenty of global forces, led by rapid economic development in Asia, Africa and Latin America (see A Tale of Two Economies, p. 15) that are driving a long term rise in demand for equipment and machinery. An emerging middle class millions strong is looking for reliable electricity and water supplies, better transportation links and access to more sophisticated goods and services. That in turn means new markets for construction equipment, power generation infrastructure and manufacturing and transportation equipment of all types.

According to Kevin Akers, Manager of International Logistics for agricultural and construction equipment maker John Deere, this global demographic shift is fundamental to his company's long-term strategy. "The world population is expected to reach nine billion by the year 2050," he says. "All of these people have to eat, and that really puts John Deere in a great position to be able to provide the technology and the equipment to feed the growing population. Not only is the population growing, but people are shifting from the farmlands to the cities. So the farm land needs to be cultivated much faster much more efficiently as it has in the past, which will drive demand for agricultural equipment, while the growth of the cities will also drive demand for construction equipment."

Civil aviation is another industry that is already enjoying the benefits of this big structural change. A combination of demand for new aircraft to serve emerging markets and for cheaper, more fuel-efficient models for fiercely competitive Western routes has meant record order books for aircraft manufacturers and their supply networks. According to aerospace trade association ADS, manufacturers had orders for more than 12,000 aircraft and more than 21,000 engines worldwide by October 2014, 5 percent more than in the previous year.

Supply chain matters

These different forces make life tough for engineering and manufacturing firms, which have to find ways to weather slumps and periods of poor growth in the short term, while still retaining the capabilities and capacity to respond to new opportunities as they emerge. The industry has adopted a range of strategies to manage this challenge. Diversification is one, with many players active in multiple sectors in the hope that peaks in one may compensate for dips in another. Other key strategies have involved profound changes in the way their supply chains are designed, operated and managed.

Engineering players have sought to tackle challenging economic conditions by cutting their own manufacturing costs wherever they can. For many that has meant offshoring production and component supply to emerging Asia where labor, energy and materials costs have been lower than in the west. This is an approach that "has put the supply chain under considerable strain," says Reg Kenney, Sector President Engineering and Manufacturing at DHL.

Engineering and manufacturing companies have realised that they risk losing many of the cost savings promised by offshoring if they can't keep the inevitable additional transportation costs under control, he says.

54%

of U.S. manufacturers are considering bringing production back to the U.S.

FIELD DAY:
John Deere combines harvest wheat near Pullman, Washington, U.S.A. John Deere says it expects a big drive in demand for agricultural equipment.

Doing that requires further tricky trade-offs, balancing the cost advantages of slower, lower-cost transportation – like picking ocean freight over air transport – with the disadvantages of longer lead times and reduced responsiveness.

Today, a number of factors are driving engineering and manufacturing companies to reconsider their supply chain design decisions once again. Rising labor costs in emerging Asia are reducing the benefits of labor arbitrage, while for companies in North America at least, unconventional oil and gas has also reduced energy costs faster at home than overseas. Technology is changing the equation too: increased automation reduces the significance of labor costs in many manufacturing operations but raises the importance of skilled staff to run and maintain sophisticated equipment. Finally, volatile customer demand makes responsiveness more valuable than ever, especially for sectors where customers are increasingly asking for products designed or configured to their particular individual needs.

The upshot of these changes has been a surge in interest in re-shoring – moving production back to

Photos: Thomas Ernsting/laif, UPI Photo/eyevine, Bildagentur-online/DesignPics

home markets – and near shoring – finding locations that combine lower costs with easy access to customers. (See How to move a plant, p. 14) A survey of U.S. manufacturers by the Boston Consulting Group in late 2014 for example, showed that 54 percent were considering bringing production back to the U.S., a 47 percent increase from 2012. In the same survey, the number of companies that say they have already started to bring production back had risen to 16 percent, more than double the 2012 figure.

From sales to service

If engineering and manufacturing players are doing what they can to make the upstream part of their supply chains shorter and simpler, precisely the reverse is true for the downstream section. Makers of equipment for the natural resource extraction industries have long had to supply customers in remote locations spread right across the world. Now urbanization, technologically sophisticated agriculture and the rise of manufacturing in emerging economies means the same is true for many other industry segments.

Even more importantly, the delivery of a piece of equipment to its end customer is often just the start of a relationship that may carry on for years or decades. “Aftersales service and support contracts have become hugely important for many of our engineering and manufacturing customers,” says Reg Kenney. “Often, companies make more money in parts and support costs during the lifetime of a piece of equipment than they do from its actual sale.” Even when customers don’t have the cash to invest in new equipment, they still want to maintain and improve the operation of the machines they already own, which makes service revenues less volatile too.

New technologies are enabling engineering companies to offer far more sophisticated service and support capabilities than they did in the past. Manufacturing, construction and mining equipment now bristles with sensors that can evaluate performance in real time, and warn of impending problems before they occur. And the ‘Internet of things’ means that data is increasingly available remotely, allowing manufacturers to play a more active role in the support of products in service. A twin-engine jet airliner will produce as much as 240 terabytes of data on engine performance alone on a single U.S. cross country flight, for example. Analysing that data, and turning it into advice that can help customers operate the equipment more safely, reliably and productively is becoming a key value proposition for many equipment makers.

The rising importance of services comes with a whole new set of supply chain challenges, however. Companies can now use highly sophisticated remote monitoring stems to evaluate the performance of equipment operating anywhere in the world, but when they need to fix problems or make improvements, they

“The world population is expected to reach nine billion by the year 2050. All of these people have to eat, and that really puts John Deere in a great position to be able to provide the technology and the equipment to feed the growing population.”

Kevin Akers, Manager of International Logistics, John Deere

$150,000

The amount it can cost to keep an aircraft on the ground, due to a technical fault

ENGINE ROOM:
An aircraft engine is prepared for testing in Hamburg. Aviation manufacturers have recently been enjoying record order books.

need to be able to deliver replacement parts quickly and efficiently. Speed is of the essence when problems occur, because broken equipment is costly for operators. Keeping an aircraft on the ground due to a technical fault can cost an airline $150,000 an hour, for example. “The fast, direct-to-consumer delivery models that have made internet retailing such a success have also raised expectations in other industries,” notes Reg Kenney, “Many engineering and manufacturing companies now say their customers expect the same kind of fast easy availability for industrial equipment too. Helping them deliver that sort of service has become a key part of our work in the sector.” ■ *Jonathan Ward*

FILLING UP:
A beverage filling machine is assembled at manufacturing company Krones. The company recently reported that it was benefiting from a leading position on emerging markets.

Photos: Thomas Ernsting/laif (2), DHL

3 QUESTIONS FOR

Reg Kenney, President DHL Engineering and Manufacturing

1. What are the key challenges in serving the Engineering and Manufacturing sector today?
If there is one thing that defines engineering and manufacturing, it is the sheer diversity of the sector. At any moment we might be shipping heavy mining equipment parts to sites in remote China, or critical aircraft engine parts to some of the world’s busiest airports. Across all these types of business we do see some common challenges, however, like an increased focus on service and through life support. As a logistics provider, enabling faster, more responsive and cost effective support is a very important way in which we provide value to our engineering and manufacturing customers. Our diverse experience benefits our customers too, by allowing us to share best practices from across the sector.

2. What impact are you seeing from the current low oil and commodity prices?
There is little doubt we are going to see some short-term impact as the customers of engineering and manufacturing companies adapt to low growth in some markets and scale back or delay investments accordingly. In the medium to long term, however, there is going to be demand for significant infrastructure and power generation investment across the world – you only have to look at the recent delays at the main U.S. West Coast ports to see that that is as much of an issue for the old economies as for the new ones. That’s going to drive demand for the products and skills of our engineering and manufacturing customers.

3. Do you think the sector has what it takes to meet its latest challenges?
I’m very confident that it does. These industries’ adaptability is their great strength. Different parts of the sector have faced significant challenges for as long as they have existed. The engineering and manufacturing sector is constantly changing, innovating and transforming to overcome whatever is put in its path. Today’s challenges are no different: whether that is coping with low commodity prices one day or high demand and capacity shortages the next.

HOW TO MOVE A PLANT

The logistics activities in relocating equipment, production lines or even entire plants is hugely complex, making intricate pre-planning – and prompt delivery of materials – crucial.

As the world economy has shifted in recent years, so choices about which parts of its manufacturing value chain a company should put where have become more complex, more critical and more dynamic.

"As recently as ten years ago, most of the interest in moving production was about moving from the U.S. or Europe to China, mainly in order to leverage lower labor costs," says Klaus Dohrmann, Senior Director Strategy and Development DHL E&M Sector. "Today, the picture is far more varied. As well as labor costs and availability, companies are choosing manufacturing locations based on energy costs, logistics costs, tax implications and the impact of local customs duties, subsidies and environmental considerations. They are also moving production closer to their customers, an effect you can see in the huge growth in near shoring in Mexico, for example."

As companies try to juggle all these influences, however, they increasingly have cause to move manufacturing equipment, production lines or even entire plants from one country or region to another in order to reduce capital investment. The logistics activities involved in such moves are significant, not only because they are complex in their own right, but also because the failure to deliver a single part of a complex equipment move on time has the potential to cause extremely costly delays to the start of production at the new site.

Helping customers to execute such difficult plant moves smoothly is typical of the activities carried out by DHL's projects divisions around the world. One region with particular experience with plant moves is Ireland. Fintan Doyle, head of Projects for DHL Ireland, explains that the country has become a key location for foreign direct investment, especially for overseas manufacturing companies looking for a foothold in Europe, thanks to its relatively low costs, skilled workforce and business-friendly regime.

"When companies make the decision to build a new facility or relocate an existing one, it is common for them to give little thought to transport until quite late in the process. Or they may leave transportation decisions up to their equipment suppliers," says Doyle. "Increasingly, however, many of our clients are realising that the ultimate responsibility for getting a new plant commissioned on time rests with them, and taking central control of the transportation process is an essential part of meeting that objective."

Part of the challenge of large-scale plant moves comes in the sequencing of the delivery of equipment to the new site so that it arrives at exactly the right time. Late arrivals can jeopardise tight construction schedules, but early delivery of large equipment can be equally disruptive. Doyle and his team manage this complex choreography by tracking the progress of every piece of equipment in the move and liaising closely with the construction teams on site. "For large builds, we sometimes establish a staging warehouse where we can hold equipment as it arrives and prepare it for just-in-time deliveries," he explains.

"Large plant moves are infrequent but highly critical events."

Transporting large and delicate equipment brings other challenges. "We sometimes work with our customer and their equipment supplier to offer packaging advice for equipment prior to transportation," says Doyle. "And we can make sure that we book the right kind of transportation: it is easy to underestimate the importance of specifying below-decks carriage for ocean freight, for example, until you suddenly find how hard it is to protect a 14m x 5m x 4m load on the deck of a ship." Route choice is important too, he notes, especially when large loads have to be shipped considerable distances by road from their point of arrival in the country.

Finally, says Doyle, companies need state of the art tracking of the location and status of every piece of equipment being used. "Large plant moves are infrequent, but highly critical events. You need end to end visibility to ensure everything is working as it should, and to enable you to take corrective action when issues do occur." ■ *Jonathan Ward*

VIEW FROM LATAM: A TALE OF TWO ECONOMIES

John Price, managing director of advisory group Americas Market Intelligence, assesses the challenges affecting the engineering and manufacturing sector in Latin America.

One region that provides a vivid illustration of the diverse impact of low commodity prices on the engineering and manufacturing sector is Latin America. "From an engineering and manufacturing perspective you can divide the Latin American economies in two broad camps," says John Price, managing director of Americas Market Intelligence. His company has been monitoring economic and commercial trends in the region for the past two decades. "On one side, you have countries with the right combination of labor availability, proximity to good markets and business-friendly government to become natural homes for manufacturing industries. Today, that largely means Mexico and other parts of Central America. On the other, you have regions where industries have been built on the local availability of natural resources, including mining, agriculture and oil and gas, which is true for a lot of the southern countries."

Over the last decade, rocketing natural resource prices encouraged a spike in investment in those resource-rich countries, as producers rushed to cash in on rapidly rising demand from China. This boom was great news for resources companies and their supply chains, but, says Price, it made life tough for Latin America's indigenous manufacturing industries, which suffered "Dutch disease" as strong currencies and high input costs made their products expensive by international standards.

JOHN PRICE, MANAGING DIRECTOR OF ADVISORY GROUP AMERICAS MARKET INTELLIGENCE

John Price, one of the founders of Americas Market Intelligence, has practiced market intelligence in emerging markets, most notably Latin America, for the last 20 years. He is a recognized regional thought leader in the areas of Latin American business climate and business strategy best practices.

CRAFT WORK: A trainee industrial mechanic at metalforming company Schuler AG in Puebla, Mexico.

Today, the pendulum is swinging the other way. Falling commodity prices are challenging for natural resources companies, but they set the stage for "a renaissance in manufacturing," says Price. "Energy costs have gone down, transportation costs have gone down and Chinese labor costs have gone up, so when you take productivity into account, Mexican labor costs are now on a par with those in China." Those conditions, combined with its physical proximity to the vast U.S. market are making Mexico a hugely appealing region for manufacturing investment.

A victim of its own success?

The rise in Mexico's manufacturing won't be an entirely smooth one, however. Price describes three key challenges that must be overcome if the country is to capture all the potential offered by today's economic environment: a scarcity of skilled labor, high electricity prices and poor security.

Traditionally, Mexico's state-controlled higher education system has produced enough graduate engineers to meet demand, he says, but it hasn't created enough of the skilled technicians needed to operate and maintain sophisticated modern manufacturing equipment. "Right now, forecasts suggest there will be a shortage of 5,000 skilled technicians a year for the next four years." To tackle these shortages, the latest generation of manufacturing players to enter Mexico will need to follow the automotive industry's example, he suggests, by jointly or independently funding their own training centers and including significant training costs in their inward investment plans.

In the short term, the competition for skilled labor may push up costs as well. "Historically, there has been less of a culture of labor mobility in Mexico than in other regions, but that is beginning to change as skilled staff see the opportunities that are available to them," says Price. "We've already seen examples of rapidly rising skills costs in other areas. In Brazil for example, a shortage of skills and experience at the very highest level meant that for a while C-suite executives were more highly paid there than in the U.S.".

30%

Latin America's share of global investment in mining

Tackling Mexico's high electricity prices will also require private investment, but this time government intervention looks set to clear the way for rapid changes. "Today, the price paid by Mexican manufacturers for their electricity is around 80 percent higher than in the U.S.," says Price. An energy reform law signed last summer looks set to transform the sector, however, by allowing private companies to both generate electricity and sell it into the government-controlled distribution grid. The same law will also permit the import of natural gas, opening access to cheap shale gas from the U.S. Today, says Price, there are upwards of a dozen privately funded power generation projects in northern Mexico. These and additional investments will help shrink Mexico's electricity price premium forecast to 30 percent or less over the next few years.

Finally, companies must find ways to manage the security of their staff facilities, and products in transit. "It's been an unfortunate side-effect of Mexico's war on drugs that the country's organised criminal gangs are turning to alternative sources of income," says Price. "That increasingly includes extortion and kidnapping, with manufacturers a significant target." Extra security costs must be accepted as part of the cost of doing business in the country, he says, adding that "there's also increasing recognition of the importance of information security – keeping tight control over the details of what is being delivered to and from your plants, for example."

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From borderlines to clusters

As Mexico overcomes its structural challenges to manufacturing growth, Price suggests that the industry is likely to change in shape as well as size. "Earlier waves of inward investment were often made primarily with a view to supplying U.S. markets," he says. "Which led to a lot of development ranged along the border." While such locations were good from a logistics perspective, he notes, Mexico's northern regions have problems too, notably shortages of water and of stable sources of labor. "Northern Mexico is the most arid part of the country, which means water is very expensive," says Price. "And it wasn't historically highly populated. A lot of the towns that have grown up on the border have done so purely to serve cross-border industry. Their populations are young and they don't have strong links to the area." That lack of connection makes it hard to retain workers over the long term, he says, leading to skills shortages when experienced staff move away.

The latest wave of manufacturing investment is likely to look rather different, he suggests. "As the domestic market has grown, along with the economies of other countries in the region, many companies are now looking at a NAFTA strategy for their manufacturing investments, with Mexican plants supplying customers right across the trade bloc." That approach makes locating close to the border less of a priority, allowing companies to go where they can find the right skills, supply base and logistical links. The result, says Price, is a growth in industrial clusters like those seen in many other parts of the world. "We have already seen hubs starting to form around the sites chosen by the big automotive companies," he says, "Now the same thing is happening in other industries, with Guadalajara becoming a center for electronics production, for example."

RICH SEAM:
The world's largest copper mine, Escondida, in Chile's Atacama Desert. Latin America accounts for nearly a third of global investment in the sector.

Photos: Thomas Trutschel/photothek.net, DigitalGlobe/Getty Images

Going south

While the rest of the Latin American continent may not be enjoying Mexico's manufacturing boom, the changing situation in other countries could drive structural changes in the region's manufacturing industries that are every bit as profound. Take mining, for example; Latin America accounts for 30 percent of global investment in the sector and is, as a result, feeling the full force of recent price falls. "We have seen a few closures of smaller mining operations as a result of the commodity price falls," says Price. But most currently operating mines will continue to do so, he suggests, with their owners shifting their focus from maximising output to controlling costs. The biggest change, he suggests, is a dramatic slowdown in the rate of new mine construction, as mining companies adjust their plans to suit a lower price environment, and as nervous investors make it harder to raise the billions of dollars needed to develop such huge and risky projects.

"We saw a really dramatic reduction in new mine construction last year," says Price, "In the short term the industry still has some consolidation to do, but overall Latin America continues to be a good region for mining, with reserves close to the surface, relatively low labor costs and competitive government royalties. As a result we expect to see an uptick later in the year as they restart the projects that still make sense."

When it comes, the rebound in the mining sector is likely to reflect a new risk and cost-sensitive environment, however, says Price, with investments focussed in politically stable regions like Peru, Chile, Brazil, and Mexico, and companies perhaps willing to proceed more slowly in order to keep construction costs under tight control.

Transatlantic trade

Lower profits from natural resources my also spur Latin American efforts to boost other forms of international trade. After being stalled for more than 14 years, for example, trade negotiations between the EU and the Mercosur countries made significant progress last year, thanks largely to strenuous efforts by Brazil. With the country's closely fought general election now behind it, says Price, the Brazilian government may once again be keen to push forward negotiations. Any such agreement would help Mercosur's highly competitive agricultural sector to compete with other non-EU food producers, suggests Price, and might provide a boost for Brazil's civil aerospace sector. However, he notes that it would also be likely to open up new opportunities for European engineering and manufacturing firms looking to displace U.S. and Japanese producers supplying and supporting equipment for agriculture, mining and manufacturing. ■ *Jonathan Ward*

SCALE AND SIMPLICITY AT GE

Mark Chadwick, Executive Sourcing Leader, Global Logistics at General Electric, explains what the company's on-going transformation means for its customers – and its supply chains.

From its foundation more than 130 years ago, by prolific inventor Thomas Edison, General Electric (GE) has built a business on continuous innovation. Since Edison's incandescent electric light bulb, GE has broken new ground in fields that include medical imaging, turbines and jet engines, materials, communications, renewable energy and space technologies. Today, the company is one of the world's largest, with over 300,000 employees in more than 170 countries worldwide. Its portfolio comprises healthcare, power and water, energy management, aviation, transportation, oil & gas, consumer appliances, lighting and financial services businesses.

GE doesn't just have a track record of product and service innovations, however. It also has a reputation for continually reinventing itself. The company pioneered the widespread use of Six Sigma techniques for quality improvement and has embraced lean methods to drive out waste and boost productivity. Most recently, under CEO Jeffrey Immelt, its focus has been on simplification. Through a program of acquisitions, divestitures and internal restructuring, GE has been focusing the scope of its activities – most noticeably by reducing the relative importance of its financial services division – and re-emphasizing its traditional strengths as an inventive engineering and manufacturing organization.

Mark Chadwick's role is a salient example of GE's new focus on simplicity. As Executive Sourcing Leader, Global Logistics, his job is "to provide a cross-business interface between GE and its global logistics service providers." It exists as part of a broader effort to simplify the way customers and suppliers interact with the organization. "There are many of our customers who regularly deal with multiple GE businesses," he explains. A hospital, for example, might deal with the company's healthcare division for medical imaging equipment, its lighting and energy management divisions for building services, and with GE Capital for financial products.

Photo: So-Min Kang Photography

Giving those customers a single point of contact simplifies the relationship, says Chadwick, making it easier for them to access the products and services they need. The same philosophy applies inside the business too, he adds, where efforts have been made to simplify the organization, take out unnecessary steps and processes, and adopt a shared services model for core enabling activities where doing so makes sense.

Simplification strategy

For the company's supply chains, simplification is a particular challenge because of the sheer scale and diversity of the businesses, products and components involved. "Our customers are literally everywhere," says Chadwick. "Every day we ship all over the world, including some of the most remote places you can think of, from mining sites in the middle of the Australian outback to healthcare projects in rural India." The contents of those shipments vary too, he adds, from tiny but critical spare parts to equipment and machinery weighing tens of tons.

Despite this diversity, GE is working hard to integrate its supply chains where it can. "We already have multi-business sites in a number of locations around the world," says Chadwick. "And they can drive supply chain synergies." The company is also exploring opportunities for further consolidation of transportation along the routes it uses most, Shanghai to the U.S. being one obvious example.

Another part of GE's supply chain simplification strategy is partnering with specialist logistics operators. "At GE, our focus is on innovation and on designing and manufacturing great products," says Chadwick. "We value the expertise of people for whom logistics is their core competence and we want to partner with organizations that can bring us that expertise, whether that's globally, or locally."

Global reach matters to GE: the company has more experience than most of emerging markets, and over 50

$54 MILLION

The number of dollars GE is investing in its new factory in Bielsko-Biala, Poland. The facility will include advanced manufacturing and a customer experience center

POWERING UP:
Top: Oil and gas engineers train at GE's Onne Facility in River State, Nigeria.
Below: GE's Advanced Manufacturing Lab (AML) in Plainville, Connecticut.

percent of its revenues today are generated outside the U.S. "People often talk about the BRIC economies as being key emerging markets, but for us those markets have already emerged," says Chadwick. "We have solid businesses today in Brazil, India and China, for example. The real emerging markets for us are other places, like Nigeria, Angola, South Africa and Algeria."

The importance of these newly growing markets is hard to overstate. At around $2.7 billion, contracts signed in 2013 to supply gas turbine power generation equipment to Algeria were among the largest in the company's history, for example. Such agreements bring with them plenty of supply chain challenges, notes Chadwick. "Contracts like this aren't about handling boxed freight, you are talking about thousands of tons of plant and equipment. To make that happen, we need global partnerships with logistics industry experts."

Emerging markets aren't just important new customers for GE's products, they have also become essential sources of supply. Its Algeria power contracts include the establishment of new manufacturing and maintenance facilities in the country, just one example of a more general diversification of supply. "We've been sourcing from China for many years," says Chadwick. "And we are adding an ever growing number of other locations, including Vietnam, the Philippines and India. Our policy is to get the best products from the best suppliers wherever they are in the world." Picking the appropriate supply locations is a multifaceted decision, he adds, combining cost considerations with assurances that new suppliers meet GE quality standards, comply with local and international regulations and, of course, have effective logistics links.

As rising labor costs in China and falling energy costs in the U.S. cause many manufacturers to reassess

Photos: GE(3), So-Min Kang Photography

their global sourcing strategies, is GE planning any changes? "As the company grows we always look to ensure that our supply chain footprint meets the needs of our customer base. For example, we opened our new Advanced Manufacturing Lab (AML) in Plainville, Connecticut, in November 2014, and we are also building a new Circuit Breaker Center of Excellence (COE) in Arecibo, Puerto Rico, that will use the advanced manufacturing methods being developed at the AML."

Despite developments at home, however, there will still be a "long-term need to supply from Asia, and to ensure smooth importation into the United States," says Chadwick. "GE uses a combination revised inventory planning to ensure the prioritized handling of critical containers, but there is a long-term challenge here for port operators as the new generation of really large container ships are either too large for existing ports, or the onshore facilities can't handle their cargoes fast enough."

Importance of service

There's other headline news that is more positive for GE's supply chain, says Chadwick: the falling oil price. "Shifting oil prices have certainly been at the top of our agenda in recent months. We are hopeful of widespread benefits from the current low level. Costs should be lower and that should trickle down to lower prices, which will benefit everyone."

Another key trend that is changing GE's relationship with its customers, is the rising importance of services. Many of the company's business units were pioneers in the addition of service offerings alongside engineered products. "Our aero engines, our gas turbines, and our medical scanners are all products that require very high levels of service and support," says Chadwick. The company has prioritized research into the combination of big data analytics and pervasive connectivity that it calls the "industrial internet" and those efforts are already bearing fruit for its customers.

"With the industrial internet, we can diagnose issues as they emerge and get spare parts and technicians in place to intervene before problems occur," says Chadwick. Doing that calls for a combination of careful planning and speed in its logistics processes. "We deploy critical parts in distribution centers around the world so they are ready to ship to wherever they are needed," he explains. "Of course, some parts are scarce, so for those you need to be ready to ship quickly over longer distances."

One of the most high profile elements in GE's strategy to focus on its core industrial markets is its on-going $16.9 billion acquisition of the Power and Grid businesses of French multinational Alstom. The deal, upon regulatory approval, will reinforce the company's strong position in the power generation market, but it will have supply chain implications too, with new plants to serve and new customers to support around the world. For Chadwick, this is more opportunity than challenge. "We know that Alstom has its own strong supply chain capabilities with great people and sophisticated solutions. We're excited about having the opportunity to learn from them and to share our best practices," he says.

It's a comment that neatly sums up Chadwick's attitude to his work and to a career in GE that has seen him live in three countries outside his native U.K. over the past 19 years. "For me, the most fulfilling part of my role is meeting teams from very different businesses and backgrounds – both within our own organization and at our customers and suppliers. It's fascinating to learn from them, and to be able to share what I've learned elsewhere." Ultimately, he says, partnerships are the secret of all successful supply chains "partnerships between our own businesses and partnerships with the best providers in the industry." ■ *Jonathan Ward*

1 BILLION

The number of dollars GE Aviation spends annually on jet propulsion Research & Development programs

www.ge.com

MARK CHADWICK: simplifying the way customers and suppliers interact with GE.

THE UPS AND DOWNS OF OIL

To capture the upside of volatile oil prices, businesses need to invest in flexible supply chains.

At face value, the plunge in prices from over $100 a barrel in June 2014 to below $50 in early 2015 delivered a familiar cast of winners and losers. Cheaper fuel benefits consumers, who pay less to run their homes and cars, leaving them with more disposable income. Analysts reckon that every $10 drop in the oil price leads to roughly 0.25 percent growth in global gross domestic product, delivering – to quote the International Monetary Fund – "a shot in the arm" to the world economy.

Plenty of industries like cheap oil too. "Transport is the most obvious – airlines, shippers," says Amrita Sen of Energy Aspects, a London-based consultancy. Sectors such as agriculture with its use of fertilisers and energy-gobbling irrigation systems also stand to gain. Other winners are governments that pay costly fuel subsidies, estimated to be a global $550 billion per year.

The most obvious loser is the oil industry itself. Facing dramatically tighter margins, oil companies are cutting costs – the North Sea oil industry has shed more than 1,000 jobs in the last year, for example – and taking a hard look at their current and future project plans. According to investment bank Goldman Sachs, some $1 trillion of spending on future projects is at risk thanks to the fall in the price of crude.

In practice, however, the economic effects of fluctuating oil prices tend to be rather more nuanced. Exactly how many oil projects will be shelved or cancelled is far from clear. Big oil projects have many stakeholders, including governments keen to keep petro-dollars flowing into their economies. At the time of writing, for example, Saudi Arabia and other big OPEC producers had not chosen to cut production in response to falling prices. Political upheavals matter too. Conflicts, economic sanctions and shifting international relationships can all affect the flows of oil around the world. The high cost of developing many new oil fields, meanwhile, makes companies extremely reluctant to close sites that are currently in production, and investors, who want some kind of return for the billions already invested in finding and developing new reserves, may be willing to bear short term losses as they wait for prices to rise again.

Changing demand

Tight margins may even provide new opportunities in the oil and gas sector, as companies look for technologies that help them cut extraction costs and improve operating margins. And while volatile prices make some kinds of new oil development riskier – especially big projects in remote areas – they may make investment in others more appealing. In its Oil Market Report the International Energy Agency suggests that the "light, tight oil" revolution in the U.S. may result in a historic shift in the industry: Hydraulic "fracking" technology, with its lower upfront costs and shorter lead times could allow producers to react more quickly to changing demand.

While the drive in recent years to capture oil and gas from unconventional sources is evidence of the fact that high oil prices stimulate investment and innovation, so are the efforts of businesses and consumers to become more energy-efficient. There are real concerns that cheap oil will harm "clean" industries too. 2014 was a bumper year for the U.S. automotive industry, for example, but it was big, thirsty trucks and SUVs that excited consumers most, not high-tech efficient hybrids or electric vehicles. And the high relative costs of renewable electricity generation can be even harder to justify when there is plenty of cheap gas around.

In the "winning" industry segments, meanwhile, low oil prices may not benefit everyone. Ratings agency Moody's warns that aircraft makers and component suppliers could suffer, as low fuel prices reduce the benefit of aircraft and technologies that cut fuel consumption, encouraging airlines to consider delaying upgrade or fleet replacement programs.

There's even a risk that cheap oil could end up discouraging all kinds of economic activity. Rebecca Harding of Delta Economics warns of negative psychological effects as lower prices reduce the nominal value of trade, contributing to a "spiralling down" of activity. "Everyone in theory should benefit, but the problem is that while prices are going down, people start to fear deflation, which can become self-perpetuating."

Supply chain flexibility

For many companies, especially those with global supply chains, fluctuating oil prices have even more complex and contradictory effects. Only a year ago, for example, oil prices were high and still climbing. Expensive oil doesn't just drive up logistics costs – it also slows supply chains down, as companies switch to cheaper, slower forms of transportation. During previous oil price peaks, container-shipping lines even slowed the speed of their vessels to reduce fuel consumption, extending Asia-Europe shipping times by up to four days. That in turn pushes up inventories, reduces supply chain agility and makes quality problems more costly to fix. Such factors have played a significant role in the recent rise of on-shoring and near shoring of manufactured goods.

Low prices mean those strategies may have to be revisited. In January 2015 Lloyds List reported that container shipping lines were considering using fewer, faster steaming vessels on major routes as reduced operating costs outweighed the cost of extra fuel. It's by no means clear that cheaper transport will reignite the growth of the same long distance supply chains, however. The structure of China's energy industry, and its heavy reliance on coal, has meant that energy prices have fallen less there than they have in many other parts of the world.

As companies look for ways to ride out today's oil price changes, while also protecting against future volatility, supply chain flexibility is likely to be key. A company with manufacturing facilities in China and Mexico, for example, may be able to shift the product mix between them as relative energy, labor and transportation costs change. "The days of static supply chain strategies are over," writes MIT Professor David Simchi-Levi in his book, Operations Rules. "With increasing costs and changing markets, companies must monitor and re-evaluate their network and supply chain strategies on a continuous basis." ■ *Fred Schulenburg; Jonathan Ward*

IN THE ZONE

Salma Hareb, CEO of Dubai's Jebel Ali Free Zone (Jafza), talks to us about the future of this ever-expanding business hub.

Salma Hareb means business. Since 2005 she has been in charge of one of Dubai's major economic drivers, Jebel Ali Free Zone (Jafza), home to more than 7,300 companies, including 120 Fortune Global 500 enterprises.

Jafza and DP World, which operates Jebel Ali Port, have helped secure the emirate's position as a global trading hub and Salma's quest is "to provide our customers with unbeatable logistics infrastructure, using the world's best multimodal connectivity to enable them to reach any part of the world at the fastest pace." Here she talks to *Delivered.* about her role in business and in life.

Jafza is going from strength to strength. What are the latest developments?

Jafza's focus has been on physical goods movement. We are now moving toward market places, connecting physical goods with people. Recently we launched Halal Food Zone and an ecommerce hub within TechnoPark (a sister company of Jafza). We are also developing more efficient and new ways for customers to access capital through NASDAQ Dubai. Businesses are always in search of capital and the equity market serves as an important source. We also continue to develop infrastructure across all Economic Zones World properties, and will be investing more than AED1.3 billion for infrastructure development up to the year 2018.

Looking into the future, where do you see Dubai, in terms of growth and in terms of trade and logistics?

Dubai and Jafza would become a destination for trade, finance and tourism, by creating marketplaces. Within trade

ABOUT SALMA HAREB

Salma Hareb is the first woman to be appointed CEO of a free zone in the Arab world. She was recognized as the second most influential Arab woman in Government in the Middle East and North Africa region by Forbes Middle East in 2013; and rated among the 100 most powerful Arab women by CEO Middle East, as well as the Asian Business Magazine. As head of Economic Zones World, she leads Jafza, Technopark, and AutoZone. Among the strategic developments she has led is the creation of Dubai Logistics Corridor, between Jebel Ali Port, Jafza and Al Maktoum International airport, designed to handle 12 million tons of freight under a single customs bond.

and logistics, Dubai would become a destination marketplace for more vertical markets for different products and services such as food, automotive, medical equipment, pharma and fashion, serving MEASA (Middle East, North Africa and South Asia).

How will the development of Etihad Rail, and of the GCC Rail Network, alter the way that goods flow? Do you believe you will be able to capitalize on these, and how?
The upcoming Etihad Rail and Dubai's link to the GCC rail network will complete Dubai's multi-modal transport model. Etihad Rail augments Jafza's superb multi-modal offering as trains will pass through the free zone, and provide a consistent and predictable option for GCC-bound freight.

Dubai has just won the bid for Expo 2020. What does this mean to the emirate, and will this also have an effect on Jafza?
We have already begun to see the positive effects on the economy, as all sectors start gearing up for massive developments. Overall, the Expo 2020 will have a trickle-down effect on all sectors of the economy. In addition to the construction and industrial sectors, we are especially expecting a boost in the hospitality and services sector, as the country prepares to host more than 25 million visitors during the 6-month event.
As the premier free zone in the region, a boost in Dubai's economy will certainly have an impact on Jafza as well. The Expo 2020 site is practically next door to Jafza, and this provides our customers with tremendous opportunity to be part of the general development going on in the area.

Do you foresee competition from neighboring countries or Abu Dhabi, which are also building up further their trading and logistics capabilities?
Competition has always existed, and it's always growing. Our goal is to continue to adapt to the external environment and remain the leaders of change in the industry. Despite the proliferation of free zones, Jafza has continued to lead innovation. We continue our pursuit for excellence and continuously improve our infrastructure and services to stay ahead of the curve.

You recently welcomed the first delivery drone at Jafza. Do you see a future where drones will be used for transport, and are there any plans for Jafza to do so?
The Unmanned Aerial Vehicle for delivery we tested recently is one of the many concepts and ideas we are constantly vetting to improve the quality of service. Delivery of time-sensitive documents and packages etc. may be one application of UAVs in the future. If it is found to be feasible, we will certainly be adding it to our repertoire of services.

Photo: Jafza

ABOUT JEBEL ALI FREE ZONE

Established in 1985, Jafza is one of the world's largest free zones, covering an area of 57 sq km and host to some 7,300 companies from 125 countries. In 2013, its non-oil trade amounted to $90.2 billion. Jafza shares a location with the world's largest man-made port, Jebel Ali Port, which means it is able to facilitate excellent sea connectivity with 170 shipping lines around the world. The largest container port between Asia and Europe, Jebel Ali has the capacity to handle 15 million containers annually.

20%
The amount that Jafza contributes to Dubai's GDP

In a male-dominated industry such as logistics, how do you see women bringing change?
I don't believe there is a difference between genders. What I bring is my passion and the belief that we have what it takes to achieve No. 1. Women can do anything they set their minds to. It's the amount of work and determination that makes the difference, not gender.

Some of our readers may be surprised to see a female business leader of your stature in a Muslim country. What would you like to tell them?
Islam is one of the most forward-looking religions the world has ever known. It is, unfortunately, the vested interest of individuals that end up giving it a bad name. The rights and privileges afforded to women in Islam are unprecedented, and Islamic history is rife with examples of women leaders in all fields of life, including trade and business. In the UAE we are fortunate to have leaders who understand the essence of Islam and encourage women to play their part in national development in all fields of human endeavour, from homemaking to business.

What are your interests outside work?
In the new world economy, work and personal life are highly integrated. We are connected 24/7. But I continue to enjoy time with my family, working out and learning through reading and meeting interesting people. I am a fan of design and art, and have a passion for beauty and decorating. I enjoy cooking in the little free time that I get.

In business and in life, what drives you?
We need to always strive for something greater than ourselves. My focus on my children and their growth is my passion. Developing Economic Zones World, and the EZW family to strive for No.1 gives me the energy and the joy to pursue the day-to-day activities to serve our customers and other stakeholders. ■ *Michelle Bach*

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LIFT-OFF FOR DUBAI'S AEROTROPOLIS

In 2011, *Time magazine* named the aerotropolis one of its 'Ten ideas that will change the world'. For Dubai, it is the final piece in its quest to establish itself as a truly global hub.

16 MILLION

Dubai World Central's projected annual capacity in terms of tonnes of cargo

An aerotropolis is a new urban concept that connects businesses, people and goods to global market places. The difference is its airport is at its center rather than on the outskirts, with a city built around it. According to Dr. John Kasarda, Professor at the University of North Carolina's Kenan-Flagler Business School, "airports will shape business location and urban development in the 21st century as much as highways did in the 20th century, railroads in the 19th and seaports in the 18th."

The biggest aerotropolis of them all is currently in the works in Dubai. Covering an area of 145 sq km, Dubai World Central (DWC) is around twice the size of Hong Kong Island and is designed to be a self-sustained economic zone upon completion. Centred on Al Maktoum International – projected to be the world's largest airport with a planned annual capacity of 16 million tonnes of cargo and over 220 million passengers – DWC comprises eight districts including residential, logistics, aviation, commercial, humanitarian, exhibition, golf and the airport itself.

In 2014 Dubai's ruler, HH Sheikh Mohammed Al Maktoum, approved a $32 billion expansion of Al Maktoum International, expected to be completed in two phases over six to eight years. The existing facility at DWC includes a single A380 compatible runway; a passenger terminal with a capacity of 5 million passengers per annum, a cargo terminal building with a capacity of 1 million tonnes per annum and a 92-meter air traffic control tower.

An integral part of DWC is the aviation district. Designed to meet the needs of the industry, from design and development to the operation and use of aircraft, the district caters to the practical requirements of MROs, FBOs, light industries, R&D and educational facilities.

With its central east-west location, DWC will be able to function as a global trade hub and provide access to the emerging MENASA (Middle East, North Africa and South Asia) markets where around one quarter of the world's population resides.

DWC's logistics district is all set to provide the infrastructure for efficient regional and global distribution. Catering to contract logistics, integrators, freight forwarders and agents, the logistics district is a free-zone environment that offers storage and distribution facilities, serving the needs of the global supply chain industry. The logistics corridor enables seamless connectivity between Al Maktoum International and the Jebel Ali seaport, the sixth largest container terminal in the world. Direct access to road networks and a planned Etihad rail link which is due to be completed in 2018 create a fully multimodal logistics platform.

Mohsen Ahmed, Vice President of the logistics district, believes DWC will cement Dubai's location as a global hub, offering companies access to untapped markets and creating new trade flows – for example from Africa to the CIS countries. "Dubai is well ahead of the curve," he says. "It has been able to successfully anticipate the future needs of the country as well as the wider region. Dubai World Central is the perfect example of this in that it has been designed to cater to the rapidly evolving economy. What DWC is doing is creating a complete ecosystem offering speed, seamless connectivity and access to state of the art facilities that will empower businesses to propel Dubai as a leading global economy." ■ *Michelle Bach*

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CAR TROUBLE

A new white paper warns that the automotive sector is facing a supply chain talent shortage – and maps out a possible way forward.

54%

the shortage of supply chain talent at middle management level (source: Supply Chain Insights, LLC)

A global shortage of supply chain talent has placed the automotive industry at the center of a "perfect storm" that could threaten its future prosperity. That's a key message from a new white paper by Lisa Harrington, President of the lharrington group LLC and Senior Research Fellow, Supply Chain Management Center, Robert H. Smith School of Business, University of Maryland. The paper, which bases its conclusions on interviews with industry leaders, analysts, headhunters and academics worldwide, suggests that the sector must start to think about logistics talent as a strategic corporate asset – and take action to tackle shortages of skilled personnel now, before they become critical.

Talent matters so much for the automotive industry because its supply chains are unique in their complexity and in their rapid pace of change. The average number of components per vehicle has doubled over the last decade, for example, and will continue to rise as consumers demand safer, more technologically advanced and more fuel-efficient cars. Meanwhile, the industry is undergoing a "tectonic shift" as parts are sourced from across the globe and growth moves from mature economies to emerging ones. And as sales are moving to Asia and the BRIC economies, so is production. Vehicle assembly plants are springing up in these booming new markets, with component manufacturers hot on their heels. Finding enough skilled people to manage its supply chains is becoming tremendously challenging for the industry, warns the white paper. In emerging regions, there often isn't an established pool of experienced professionals upon which to draw, with particular shortages of people with the high levels of technical skill needed to manage sophisticated global and just-in-time supply chains. In mature markets, meanwhile, changing demographics mean the industry's most experienced people are retiring faster than they can be replaced. Today, demand for supply chain professionals in the U.S. alone exceeds supply by six to one, and that figure is expected to rise to nine to one in the coming years. Up to a third of the existing supply chain workforce is already at or beyond retirement age.

Photos: DWC, Ute Grabowsky/photothek.net

Options

Tackling the shortage of supply chain talent will require the combined efforts of industry, governments and academia, says the white paper. Key steps include increasing the number of places on supply chain related degree and MBA courses, and the number of faculty available to teach those courses. The perceived status of a career in supply chain will also have to rise. But automotive companies have a significant role to play themselves in retaining and expanding critical supply chain skills. The white paper describes four tangible steps companies can take to make this happen.

First, they should expand their own education options, through the provision of supply chain e-learning courses, for example, and through collaborations with external academic institutons. Second, they should adopt job rotation programs, exposing supply chain professionals to different roles and functions through the company and including supply chain experience in managers' career development plans. Third, they should formalise the process of knowledge transfer between their most experienced supply chain professionals and younger staff, for example by introducing shadowing and mentoring programs. Finally, says the white paper, companies must maximise their change of attracting and retaining scarce talent by becoming "employers of choice": ensuring their compensation offerings and career progression opportunities make a role in the supply chain organization appealing for high potential individuals. ■ *Jonathan Ward*

tinyurl.com/del-automotive

EASTERN PROMISE

Since 1989, the Asia-Pacific Economic Cooperation (APEC) forum has brought together Pacific Rim member economies to work together to promote free trade and economic cooperation throughout the Asia-Pacific region. *Delivered* investigates the business and economic prospects of three of APEC's 21 member countries: Japan, the 3rd largest economy in the world, plus Vietnam and the Philippines, two rising stars.

At the 2014 Asia-Pacific Economic Cooperation (APEC) summit held in November in Beijing, Chinese president Xi Jinping told business leaders from 21 member countries that China's economy was slowing down and that gross domestic product (GDP) growth is likely to drop further in 2015. "Risks are indeed there, but they are not that scary," President Xi said, trying to assure CEOs that China will still be among the top performers in the world.

Xi is probably right. The World Bank recently predicted China's GDP growth in 2015 would be around 7.1%, compared with the global average of 3%. But, still, foreign investors are hedging their bets and looking to do business in other promising APEC countries, such as Vietnam and the Philippines. Vietnam, for example, attracted $10.3 billion in foreign direct investment (FDI) from January to August 2014, surpassing the $8.9 billion received in the whole year of 2013, according to the nation's ministry of planning and investment. And, in the Philippines, FDI between January and October in 2014 reached $5.3 billion, up 47% from $3.6 billion received in 2013, according to the country's central bank, Bangko Sentral NG Pilipinas.

In addition, statistics show that – despite its recent financial woes – foreign investors are also looking at the highly developed economy of Japan, especially after the Abe administration took office in late 2012. Japan attracted $3.71 billion in FDI in 2013, more than quadrupling investment from 2012, according to the World Bank.

So what is the business climate like currently in Vietnam, the Philippines and Japan? And where are these APEC countries heading in the near future? ■

"SERIOUS ABOUT GROWTH – AND OPEN FOR BUSINESS"

The APEC 2014 summit was a chance for the leaders of China and Japan to have an ice-breaking meeting after an array of flashpoints between their two nations since 2012. This was an important step because – as the Japanese prime minister Shinzo Abe told the Washington Post – "as far as the economy is concerned, China and Japan do have an inseparable relationship."

Abe is under great pressure to improve Japan's economy, which fell back to recession in late 2014 due to an increase in consumption tax by 3 percentage points in April that dampened household spending. Abe's measures to tackle the issue is delaying another round of consumption tax rises, as well as continuously pushing the implementation of his famous "Abenomics" – a raft of measures he believes will revive the Japanese economy. Abenomics is composed of "three arrows": structural reforms to attract investment, a robust fiscal policy, and aggressive monetary easing.

"The three-arrow measures are critical because they will affect labor, agriculture, trade and investment," says Jim Fatheree, president of the U.S.-Japan Business

JAPAN

Population: 127 million

GDP: $4901.5 billion

World Economic Forum's Global Competitiveness Index: 6th place (out of 144 countries)

World Bank Group's Ease of Doing Business ranking: 29th place (out of 189 countries)

DHL Global Connectedness Index: 40th place (out of 140 countries)

http://tinyurl.com/del-globalconnect

Council. "2015 will be a critical year in terms of implementing new measures that will spur productivity and longer term growth."

Fatheree believes that Japan's participation in negotiations for the Trans-Pacific Partnership (TPP) – a proposed regional regulatory and investment treaty – is also vital, because it will not only open the market to trade, but also send a strong signal to the outside world that Japan is serious and open for business. "Prime Minister Abe has perhaps a three-year window to push these reforms, so opportunities should increase," he says. Japan is also negotiating a Free Trade Agreement with the EU, which the government hopes to conclude by the end of this year.

Under the arrow "monetary easing", the Japanese yen is expected to continue to depreciate in 2015, from the current 117 to 140 against 1 US dollar, according to Yoshikiyo Shimamine, an economist at Japan's major insurance company, Dai-ichi Life. "With the recovery of global economy, especially the U.S. economy, a weak Japanese yen will largely increase exports, therefore benefitting Japan's overall economy," Shimamine told the Japanese media J-Cast.

Bringing manufacturing back to Japan also makes more sense with a weakening yen due to high cost in imports. Japanese electronics manufacturers such as Sharp and Panasonic are discussing the possibility of moving the production of some products back to Japan – a move that is in line with Abe's strategy, a major part of which is adding jobs and boosting domestic production. However the aging population is a challenge which Japan needs to address.

Admittedly, this is probably not the best time for foreign companies exporting products to Japan. However, because Japan is still an affluent country, there are many opportunities for investors in certain sectors, including health care, IT, energy and others, for both B2C and B2B sales, says Jim Fatheree. The local talent pool also benefits foreign companies hiring in Japan, which is home to a highly educated and talented workforce.

"Lateral movement between companies for mid-career people is low relative to the U.S., Europe and other major economies," says Fatheree, "but the commitment to lifetime employment is also receding among the large Japanese companies, creating new opportunities for foreign companies to find good executives and workers." ■

Photos: iStockphoto, Lucas Vallecillos/Vwpics/ZUMA/ddp images

"UNTAPPED MARKET OPPORTUNITY"

The Philippines, the host country for APEC 2015, has been under the radar for years. Yet having received investment grade ratings from all three major rating agencies, it is starting to transform into something of an Asian Tiger.

GDP growth in the first three quarters of 2014 averaged around 5.8 percent in the Philippines, lower than 6.3 percent in 2013; but the key macro-economy indicators such as inflation and interest rates remained stable, largely driven by a steady flow of overseas Filipinos' remittances as well as the expansion of the business process outsourcing (BPO) industry, according to the rating agency Fitch. In November 2014, Moody's upgraded the Philippines' credit rating, following S&P's raise in May. Both agencies cited the "stable outlook" and efforts to "improve the nation's economy and government"; while Moody's particularly acknowledged good governance and an anti-corruption campaign launched by President Aquino when he took office in 2010. Fitch highlighted the Philippines' stable outlook, robust economy and improved fiscal management.

In May 2014, a report from Deloitte Touche called Competitiveness: Catching the Next Wave: the Philippines, highlighted that – if these reforms continue – the country could prove to be one of the region's growth leaders in key industries, including manufacturing. "The strong growth in global manufacturing to 2033 will drive world growth, and this presents the Philippines with great potential to integrate into the global supply chain of high-value manufacturing," said Gary Coleman, managing director, Global Clients and Industries, Deloitte Global. "If the government makes smart investments in infrastructure – including roads and harbors – that would help to boost the construction and transportation sectors and lead to higher productivity growth in the coming years as well."

Yet the Philippines has the lowest Foreign Direct Investments (FDI) among ASEAN countries, according to 2014 United Nations Human Development Report, with only 1.12 percent of its GDP coming from FDI, compared

VIETNAM

Population: 90.7 million
GDP: $170.6 billion
World Economic Forum's Global Competitiveness Index: 68th place (out of 144 countries)
World Bank Group's Ease of Doing Business ranking: 78th place (out of 189 countries)
DHL Global Connectedness Index: 33rd place (out of 140 countries)

"YOUNG – AND INTERNET-SAVVY"

In 2014, Moody's and Fitch both upgraded Vietnam's credit rating for its "improved economic stability." These were significant moves because social and political stability and low labor costs may lure manufacturers away from China, where the lowest monthly minimum wage is around $201, compared with Vietnam's $114. Vietnam still faces challenges including a lack of English skills, market efficiency, macroeconomic stability and a weak (although improving) banking sector. Yet 78 percent of its population is of working age; while its e-commerce infrastructure, including transportation and broadband internet access, is developing along with the growing economy. Inflation is in check, and the World Bank is predicting GDP growth of 5.6 percent in 2015.

The sector landscape in Vietnam continues to develop in interesting ways. While many investors are still to be found in traditional industries such as textile manufacturing, a growing number inhabit the technology space. For example, Samsung, the Korean electronics maker, is to build a $3 billion smartphone plant in northern Vietnam, its third plant in the country to date, while other big tech players in the country include Microsoft and Intel.

to 2.35 percent in Thailand, 4.17 percent in Malaysia, and 6 percent in Vietnam.

Imports have increased year-on-year, with growing domestic demand for consumer goods and petroleum products. And, as of November 2014, semi-conductor and electronics products were the country's largest exports; so no wonder companies such as SPI Semi-Con have set up bases here to take advantage of the educated, English-speaking work force.

Semi-Con is located in Makati, one of the special zones of Philippine Economic Zone Authority (PEZA), a scheme to help companies develop businesses with government incentives. So far, PEZA has over 300 special zones over the country, including the lower tier cities such as Cebu and Baguio. "The Philippines is the new toast of the town among global investors, performing much better than many emerging markets such as Brazil and South Africa," says Richard Heydarian, political science professor at Manila-based De La Salle University (DLSU). "I think there are concrete reasons for optimism over the outlook." ■

THE PHILIPPINES

Population: 100.1 million

GDP: $272 billion

World Economic Forum's Global Competitiveness Index: 52nd place (out of 144 countries)

World Bank Group's Ease of Doing Business ranking: 95th place (out of 189 countries)

DHL Global Connectedness Index: 58th place (out of 140 countries)

Once, Vietnam was one of Asia's poorest nations, but two historical milestones have helped it grow exponentially in the past decades. The first was in 1986, when the Vietnamese government launched its "Doi Moi" economic reforms to create a socialist-oriented market economy; the second came in 2007 when the country was approved as a member of the World Trade Organization. In recent years the government has been keen to move further up the value chain and shake off Vietnam's image as a nation of only cheap, low-skilled labor. Dang Xuan Quang, deputy director of the Foreign Investment Agency under the Vietnamese Ministry of Planning and Investment, said in October that the country is to boost FDI in four sectors: supporting industries, infrastructure development, human resources and agriculture. That same month, Japan's Fujitsu partnered with Vietnam's top IT company FPT to test Fujitsu's food and agricultural cloud service, Akisai Cloud, in Vietnam; a project that allows Fujitsu to remotely monitor and control conditions of plants in testing areas, and later transfer the work to data centers in Vietnam.

Highly skilled talent is essential to develop such high-tech industries; but according to a World Bank report issued in July, the poor quality of Vietnam's labor force remains a challenge. "Employers continue to report [the lack of] availability of skilled workers as a more severe binding constraint than labor market regulations or taxes," the report noted. Vietnam ranks at number 53 in the *Economist*'s 2015 Global Talent Index out of a total of 60 countries which leaves companies competing for limited high-quality local talent. Chemo Group, the Spanish pharmaceutical company, is one of them. The people they find "have a good level of knowledge and professionalism, thanks partly to the existing student exchange programs between Vietnamese and foreign governments," says Philippe Malecki, general manager of Vietnam, Myanmar and Cambodia at Chemo. As an illustration, Malecki points out that several medical universities in Paris have student exchange programs that are extremely beneficial to pharma companies in Vietnam. However, admits Malecki, "hiring is one thing – keeping them is another. The average turnover in the pharmaceutical industry is 16%."

On the other hand, Vietnam provides a dynamic market for companies like Lazada, a Southeast Asia-focused B2C platform owned by the Berlin-based Internet company, Rocket Internet. "The Vietnam online market consists mostly of young, internet-savvy consumers," says Lazada Vietnam CEO Alexandre Dardy, "and some of our most popular products are technology-related, fashion and lifestyle items." ■ *Frances Wang*

Read more about DHL's view on business in Vietnam at
tinyurl.com/del-vietnam

Photos: Kevin German/Luceo/laif, Romeo Ranoco/Reuters/Corbis

TESTING THE WATERS FOR AUTONOMOUS SHIPPING

The European research project MUNIN investigates whether – and under what circumstances – unmanned and autonomous shipping is feasible.

BRIDGE AUTOMATION

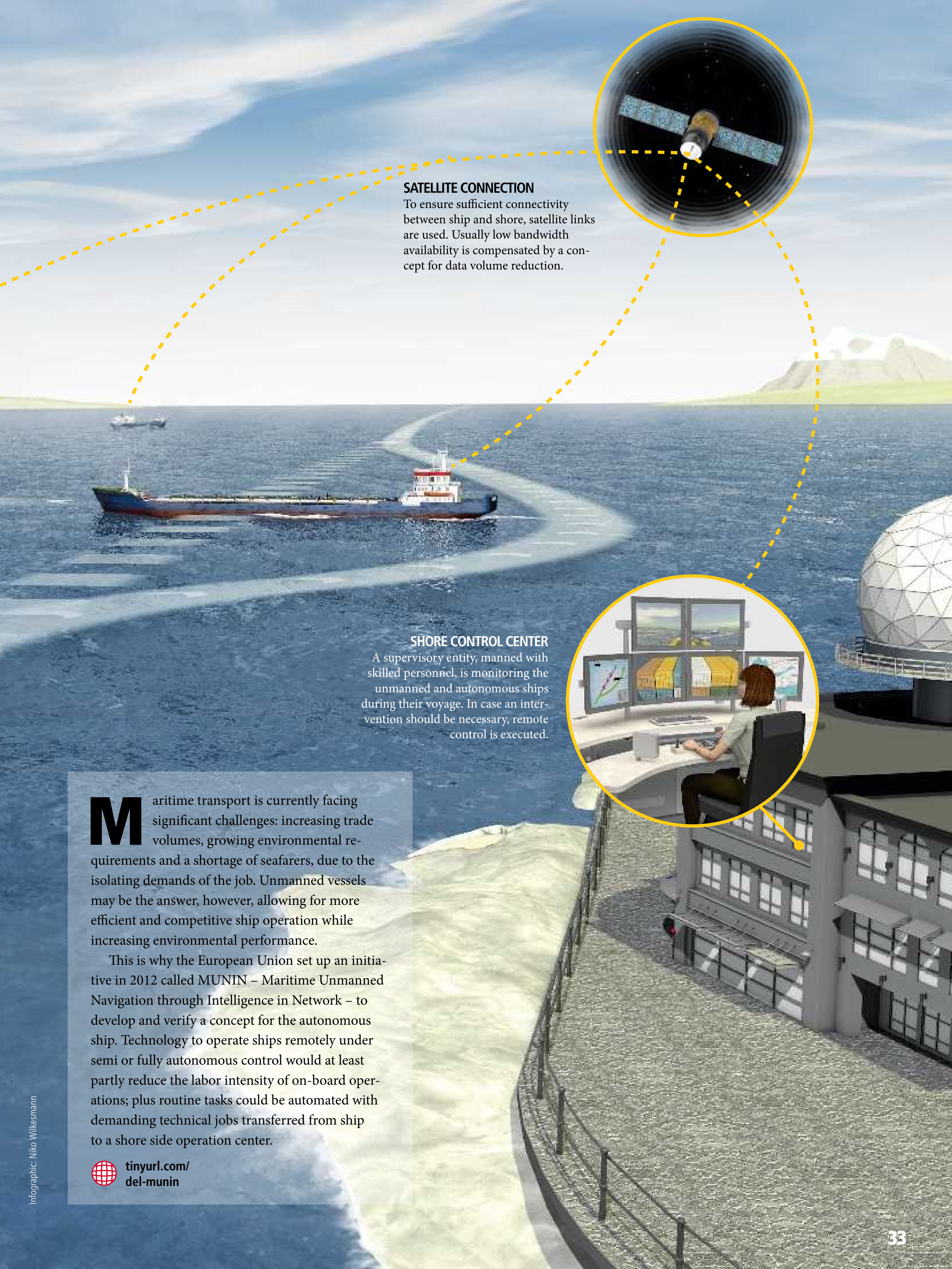
To guide an unmanned and autonomous ship on deep-sea voyages, an advanced navigation system is installed. Based on sensor data, maneuvers for collision avoidance and weather routing are conducted self-reliantly.

ENGINE ROOM AUTOMATION

To enable watch-free operation of the ship's engine room for longer periods of time, a complex monitoring and control system is put in place. Preventive maintenance and energy efficiency optimization ensure highest reliability and sustainability.

SENSOR SYSTEM

To gather information about the present situation in the vicinity of the ship, advanced sensor technology is required. Information about traffic and weather is fused to establish a thorough perception of the local sea area.



Infographic: Niko Wilkesmann

Maritime transport is currently facing significant challenges: increasing trade volumes, growing environmental requirements and a shortage of seafarers, due to the isolating demands of the job. Unmanned vessels may be the answer, however, allowing for more efficient and competitive ship operation while increasing environmental performance.

This is why the European Union set up an initiative in 2012 called MUNIN – Maritime Unmanned Navigation through Intelligence in Network – to develop and verify a concept for the autonomous ship. Technology to operate ships remotely under semi or fully autonomous control would at least partly reduce the labor intensity of on-board operations; plus routine tasks could be automated with demanding technical jobs transferred from ship to a shore side operation center.

tinyurl.com/del-munin

AN EDUCATION FOR EVERYONE

Teach For All is a global network of independent organizations that recruit and develop leaders to teach in their nations' high-need classrooms and to work throughout their lives to increase opportunity for kids. It's making a big difference to young lives, inside and outside of the classroom.

In 2012, 24-year-old Atilio Partulanne stepped across the threshold of a classroom in a school on the outskirts of Buenos Aires, Argentina. He was about to start his first day as teacher to a group of mixed ability youngsters from low-income backgrounds, many of whom had experienced violence and drug use – and he was worried. Yet he was confident in the training he had with Enseña por Argentina, part of the global Teach For All network, which is comprised of organizations that recruit and develop their nations' most promising graduates and professionals to teach for two years in their country's high-need schools and communities. He also believed he could make a difference to the pupils' lives. Even so...

"That first day was scary," admits Atilio. "Many of the students did not want to be there, many had very low self-esteem. I was nervous and wrote my name on the board with permanent marker, so it was there the whole time. At least they did not forget who I was!" One 15-year-old pupil instantly presented him with a challenge: "She told me she did not want to be in my class because she found the subject difficult," he recalls. "I knew I would have to try very hard to convince her

EXPANDED OPPORTUNITY: Students in high-need classrooms around the world – like this one in Jujuy province, Argentina – have gained from the Teach for All network.

Deutsche Post DHL launched its partnership with the global education network Teach For All in 2010. With the Group's support the Teach For All network grew from 11 to currently 35 independent partner organizations. DHL provides support to eight national partner organizations in Argentina, Chile, Ecuador, Germany, India, Peru, the Philippines, and Spain.

that it was worth staying." He pauses. "She completed the course."

To succeed in a high-need community, you need passion, dedication and to make sacrifices. You also need the backing of a good education – an opportunity that is sadly unavailable to millions. Making it available is the raison d'etre of Teach For All national programs.

Not everyone who wants to be a teacher for a Teach For All partner program is successful. For Atilio to be accepted by Enseña por Argentina meant completing a competitive application process while he was studying economics in Buenos Aires. After a month's intensive training, he was sent to Asunción de la Virgen, a school in the suburb of San Fernando, 30 kilometers from the center of the capital. He was interviewed by the principal and given the job of teaching economics and mathematics.

"That first day was scary. Many of the students did not want to be there, many had very low self-esteem. I was nervous and wrote my name on the board with permanent marker, so it was there the whole time. At least they did not forget who I was!"

Atilio Partulanne

Educational experience

The school was a complete contrast to his early educational experience. "I went to a small country school, with no more than 100 students," he says. "Most of them spent the whole week there and returned home only on weekends. Some teachers also returned only on weekends and some others travelled back and forth every day (around 100km). It taught me a lot about sacrifice. It wasn't a top school, but to see that sacrifice really changed my life."

Speaking on his last day at Asunción de la Virgen, Atilio is honest about the highs and lows of working in a city high school. He was responsible for about 60 high school students aged between 14 and 17 and tried to instil in them a curiosity about learning and the importance of grabbing every educational experience. He also coached the higher achievers for interviews to get into university, even accompanying them to classes to boost their confidence.

The first year of teaching was a steep learning experience for Atilio and he admits he made mistakes. To reach those who were reluctant to learn and displayed difficult behavior, Atilio had to be creative. "We played games in lessons and I tried to make learning fun," he says. He also took his students out on visits to businesses, to show them how economics could be put to practical use. One of the trips included a tour of the local DHL office. "They seemed to understand better what business was all about," he says.

Teach For All network teachers are chosen for their outstanding leadership skills. So what does Atilio think they bring to the classroom? "First of all, I think it would be a huge mistake to think that we're better teachers than others," he says honestly. "We're optimistic, realistic and proactive. We think (the students) could have a better future. If you try hard, it doesn't matter where you come from." ■ *Christine Rayner*

A DIFFERENT CLASS

CEO and co-founder of Teach For All Wendy Kopp on why aiming for the highest quality teaching is the key for children's development across the world.

Wendy Kopp was a public policy major at Princeton, in a privileged position, with the world open to her. "I felt the whole world was open to me, that I could do anything I wanted to do, and I was very conscious that this was because I was lucky enough to have been able to access an excellent education," she remembers. "I knew not everyone had such luck, and it simply wasn't fair."

It was then that the softly spoken but gutsy American created her mantra for life: quality education for every child. The "Big Idea" Wendy came up with in her 1989 thesis was a national teacher corps which would recruit top graduates, put them through an intensive training program, and support them through two years of teaching in the country's lowest-income communities. Undeterred by everyone around her who told her to start small, Wendy threw herself at the project 110 percent, managing to raise $2.5 million from philanthropic donors and recruit 500 top graduates to teach. Teach For America – which gave rise to the global Teach For All movement – was born...

You started with 500 graduates in your first year. Does this mean it was easy to set up Teach For America?

No, definitely not. I could never have predicted how hard this journey to expand educational opportunity would be. Before Teach For America was established, most people thought it would not work. We were taking on tough, entrenched issues. The problem is, in the U.S. there is such a big opportunity gap. The country aspires to be a land of equal opportunity, but the reality is very different for children growing up in our most marginalized communities.

Where is the program now?

Teach For America has nearly 11,000 corps members in the midst of their teaching commitment in the nation's most high-need urban and rural areas, as well as tens of thousands of alumni who continue working toward expanding educational opportunity. More than 85 percent of our alumni are working full time in education or working to improve the quality of life in low-income communities, and they're making a meaningful difference.

How did Teach For All develop?

Teach For All was set up in 2007, following discussions with educational entrepreneurs across the world who contacted me and co-founder Brett Wigdortz, wanting to adapt the approaches of Teach For America and Teach First (UK). All were eager to set up similar programs in their own countries. There are now 35 independent organizations in the Teach For All network, with an additional 25 social entrepreneurs pursuing the approach in their own countries.

Why do you think the global network has taken off so quickly?

This is an idea that has magnetized such incredible hearts, minds and souls all over the world. There is so much commitment all around the world to address educational inequity, and there is a growing understanding that there is no one silver bullet solution. Rather, ensuring educational opportunity for all is going to take an immense amount of dedication and leadership from within and outside of education. Teach For All's approach provides a way to act on these beliefs and be part of an effort to make a real difference. Partners like DHL, which was a founding corporate partner, have played a critical role by providing financial support and also mobilizing their own staff to volunteer in classrooms and organizations across the Teach For All network.

Where next for Teach For All?

We're focused on supporting the continued growth of the network and helping the network organizations grow their impact. We've seen there's so much potential to accelerate impact through fostering learning and sharing across borders, and we want to find more and more powerful ways to facilitate this. Ultimately, we envision organizations in nearly every country in the world that are channeling their top talent toward expanding educational opportunity, as part of a global network where we're all learning from each other and thus getting closer and closer to our vision of the day when all children have the opportunity to attain an excellent education. ■ *Christine Rayner*

ABOUT TEACH FOR ALL

Teach For All was set up in 2007 by Wendy Kopp and Brett Wigdortz, the founders of Teach For America in the U.S. and Teach First in the U.K.. More than 65,000 teachers have been trained, reaching more than six million students worldwide. Of those who complete the two-year program, between 50 and 80 percent remain in the teaching profession.

Photo: DHL

WE'RE 2

and we'd like to celebrate
by giving you some gifts!

We'd also like your opinion on how you like *Delivered*. and how we can improve.
So, to share your views and be in with a chance to win one of our birthday gifts, please follow this link:

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THE POWER TO INNOVATE

"There's a way to do it better," said Thomas Edison, inventor of the lightbulb. "Find it." Unfortunately, that's easier said than done because while every business craves innovation, not everyone has the power to be an innovator. So what makes the innovative mind so unique – and what makes an innovative workspace creatively energizing?

THE INNOVATIVE MIND: "THE ULTIMATE BUSINESS WEAPON"

Everyone has a good idea from time to time. Sometimes, however, so-called lightbulb moments cross over into the realms of pure innovation: that is, the generation of a new idea, product or process that, according to Scott Berkun, American motivational speaker and author of the book The Myths of Innovation, creates "significant positive change." For Berkun, a 'significant' innovation means a "30 percent or more improvement in something, like the speed of an engine or the power of a battery."

Think of well-known innovators and you'll doubtless namecheck pioneers such as Thomas Edison and his (literal) lightbulb moment; the Wright brothers, inventors of the airplane; Alexander Graham Bell, father of the telephone. More recently, the roll call of game-changing invention can be expanded to include the late Steve Jobs of Apple; Elon Musk, the entrepreneur behind Tesla Motors; Virgin's Richard Branson and Mark Zuckerberg, co-founder of Facebook. Yet innovation doesn't always come with a famous name or face. Every industry is equipped with innovative people – those with a knack for constantly thinking up and kickstarting pathfinding ideas that trigger positive outcomes for their clients or for their own companies. The outside world might never know about them, but when they affect change for the better, they make a difference to those around them.

So what makes their mind tick? What makes them so different to other people?

"Innovators have no off-switch," says Peter Guterstam, founder of the Stockholm-based Genease consultancy in Sweden and Head of Forensic Tech-

Photos: Toyota Dream Car Contest, Sergey Nivens/Fotolia, DHL(2)

INNOVATIVE VIEWS

WHAT FUTURE INNOVATION WOULD YOU MOST LIKE TO SEE?

"In financial services, the five big banks we've grown up with (in the UK) have had a monopoly over financial services for decades, providing everything from current accounts to international money transfers. I think we're likely to see this model of universal banking change as new technologies carry out services more efficiently and at a lower cost. Financial technology firms are already disrupting the status quo."

Taavet Hinrikus, co-founder of U.K.-based money transfer platform, TransferWise

nology for global security brand, SelectaDNA. "They are always curious, always listening and learning, trying to solve problems. Innovators are relentless in their belief and their need to make a difference to society." For Guterstam, everyone is capable of innovation because, he says, we all have a unique set of competencies and experiences; but only a select few have the in-depth specialist knowledge, good scientific awareness and understanding of what is needed in society to be able to turn their ideas into successful innovations. True innovators are also able to move past fixed ideas and assumptions. When they do, the results can be electric. According to innovation and trends expert Debra Kaye, the ability to think outside of the box is "the ultimate business weapon."

Embracing change

Professor Chris Birch is Director of Enterprise & Innovation at the University of Greenwich Business School in the UK, and creator of the Centre for Innovation, Imagination and Inspiration in London which supports businesses in the development of practical services and solutions. He believes an innovator is someone who can link need, wants and desires with product service or process development; which chimes with the thinking of Joseph Schumpeter, an eminent Austrian-American economist and political scientist (1883–1950), who argued that "anyone seeking profits must innovate."

"A true innovator needs to be able to differentiate between 'enterprise' and 'entrepreneurship'," says Birch. "An innovator comes up with something new that converts into value." And when this happens in a business environment, it can breathe new life into a company by changing or creating more effective processes, products and ideas – resulting in better productivity and performance. Essentially, companies that are constantly creative, innovative and responsive will thrive, says Birch, whereas those that rest on their laurels simply won't be able to. "Innovative providers need not fear the future," he says. "They embrace change and play a leading role in developing and defining the future."

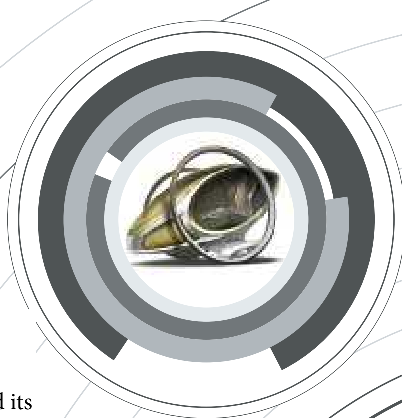
There's one other important thing about the innovative mind. It needs to be fed with new challenges. Birch, for example, admits to having a low boredom threshold and says that – like other innovators – he is constantly looking for solutions to new problems. "With me, there is no line between work and leisure. They overlap because I love what I do. I don't accept boundaries very easily and always believe that things can be done no matter what obstacles are in the way. At the end of the day, innovators have a burning desire to build a legacy and make a difference."

INNOVATIVE VIEWS

WHAT FUTURE INNOVATION WILL REVOLUTIONIZE YOUR INDUSTRY IN THE NEXT 10 YEARS?

"We are developing the next generation of digital healthcare products that is like the fictional Star Trek medical device called the Medical Tricorder which can diagnose various medical conditions with minimal contact to the user. I believe home consumer health diagnostics will become a reality over the next decade, allowing people to take more control over their own health. This will open up more opportunities for companies such as DHL to engage in direct deliveries of medical supplies to patients in their own homes, thanks to the self-diagnosis of their own conditions."

Anil Vaidya, founder of digital health company SCANurse and finalist in the $10 million Qualcomm Tricorder XPRIZE competition, who is designing medical diagnostic technology based on a fictional device from Star Trek.



THE INNOVATIVE SPACE: "SPARKING SERENDIPITY"

Two years ago, the magazine Business Insider named its favorite innovative workplaces – spaces that promote and push the boundaries of innovation. These included the offices of headphone-maker Skullcandy in Zurich, Switzerland, which has desks that can be reconfigured so that employees can work separately or together; the offices of digital marketing agency iProspect in Texas, with a curved conference room meant to stimulate collaboration; and the San Francisco offices of landscape architecture, planning and design firm the SWA Group that features a huge 'culture wall' – a mood board of people, inspiration and work ideas.

Plainly, these spaces were both unusual and highly inspirational. But as Steven Johnson, the science author and media theorist said: "Innovation doesn't come just from giving people incentives. It comes from creating environments where their ideas can connect."

For example, at the offices of award-winning film giant Pixar, Steve Jobs, the genius behind Apple and one of Pixar's founders, had the building designed so that all front doors, stairs and corridors led to a large central atrium where workers could meet each other – either by chance or by design. The Pixar building definitely doesn't stifle mingling. In fact, it actively encourages it. "If a building doesn't encourage that, you'll lose a lot of innovation and magic that's sparked by serendipity," said Jobs.

All these physical spaces owned by successful creative companies have one thing in common: they are designed to energize the innovative mind. It's a concept which fascinates UK-based innovation charity Nesta which, this spring, will be publishing a report on the relationship between the physical design of working

INNOVATIVE VIEWS

WHAT FUTURE INNOVATION WOULD YOU MOST LIKE TO SEE?

"I would like an invention that converts our thoughts into a readily available Google document. Then we can create our very own 'brain search engine' that will store a bank of information on a range of items, from a concept for a new app to birthday ideas for your partner. Creatives around the world will never forget a good idea again; unfortunately, they'll be able to save their bad ones, too!"

Jack Cator, CEO and founder of Privax, provider of online privacy services, who created his first business, Virtual Private Network (VPN) service Hide My Ass!, aged 16.

Photos: Daimler AG, TU Chemnitz/Eckhart, DHL(2) environments and levels of creativity and innovation. The results are still under wraps but will doubtless interest innovators everywhere.

Focused and dedicated

Professor Chris Birch's work environment at the Centre for Innovation, Imagination and Inspiration, is, he admits, fairly anarchic. "There is no hierarchy at the center," he says. "Innovators don't tend to follow rules, but it is a very busy and purposeful place to work. It is a positive and fun environment, too, but also a focused and dedicated space, where our team creates value in new and interesting ways."

Birch says that the center differs from 'normal' work environments because of the way his colleagues dislike standing still, constantly embrace change and are keen to work collaboratively. "It's about ideas, conversations, thinking, refining, reflecting and modifying," he notes. "At some point a formal structure cuts into the creative process and ideas are turned into commercial realities."

Peter Guterstam, who founded his own gene research consultancy in Sweden and is now based at the SelectaDNA HQ in the UK, is working on innovative projects involving forensic DNA technology. With a workshop and production department available onsite, it's a secure environment which allows Guterstam to work in a relaxed but professional atmosphere where everyone is keen to help each other. This, he says, encourages him to contribute his best in terms of being creative, offering "a quick route to decision-making and product development."

The way he works is also important. Brainstorming sessions are held whenever necessary and topics vary widely from product development to problem-solving. "I like working in a creative environment with a challenging but co-operative team," he says. "It's an atmosphere where new ideas can be tested without criticism, whether you are the one coming up with a particular suggestion or whether you are the one questioning someone else's idea."

"A successful working space very much depends on the example set by management. Any manager not willing to make decisions is detrimental to the working environment. Lack of feedback is also unhelpful. In my experience, bigger companies are often slower in the decision-making process and less successful in linking success back to colleagues than smaller organizations."

Innovation can't be forced, but in order for it to succeed, companies – big and small – need to appreciate the importance of an innovative workspace in cultivating imaginative solutions. ■ *Angela Singleton*

BUILDING INNOVATION

This spring, DHL will be relaunching its DHL Innovation Center in Troisdorf, Germany, with a new conceptual design and extended services. The building has been specifically created so that customers as well as business and industry partners can easily meet, connect and exchange ideas with Deutsche Post DHL teams and trend experts.

The heart of the building features a state-of-the-art center piece: a Formula E car showcasing DHL's sustainable logistics solutions, smart mobility and automotive innovations. To keep up with a constantly shifting business and social environment, this exhibit will be changed on a regular basis. The center piece also functions as a link to the other exhibits, which integrate the logistics of today, tomorrow – and the day after tomorrow.

Today's solutions are showcased in the solution box, where visitors can experience the full range of Deutsche Post DHL capabilities, while trend cubes highlight the trends of tomorrow and their applications for the logistics industry.

The day after tomorrow is represented by the vision suite, where visitors can discover inspirational scenarios on what the world of logistics might look like in the year 2050.

In addition, the DHL Innovation Center comprises a dedicated design thinking studio to provide customers with the perfect platform for highly customized workshops, as well as a state-of-the-art area for conferences and events.

All visitors can enjoy several customized tour experiences at the new Innovation Center. One of these is the expert tour, designed to take a deep dive into a specific logistics solutions or topics, delivered by one of our subject matter experts. Another tour is focused on the latest trends, enriched with insights by a DHL Trend Research expert.

Plus, visitors can experience an exclusive virtual warehouse tour through our most innovative DHL supply chain warehousing site, via telepresence technology.

If you are interested in visiting the DHL Innovation Center, please contact your DHL sales representative. For more information, visit:

tinyurl.com/
del-innovation

FORMULA E CAR as the first of the changing center pieces.

VIEWPOINTS

DELIVERED KEEPS AN EYE ON THE BALL WITH...

MANUEL NEUER

The Bayern Munich and German national team goal-keeper on developing a winning mentality.

His list of professional achievements as goal-keeper of FC Bayern Munich is something most players will only ever dream of: two German Bundesliga championships, two wins in the German Cup, and a Champions League title — not to mention his World Cup triumph with the German national team last summer in Brazil.

But success hasn't stopped Manuel Neuer from dreaming. If anything, it's only whetted his appetite. "I never felt that I would just put my feet up and say it was all over," he tells us. "You have to set new goals." For Neuer, that includes making good on Bayern's loss in the 2012 Champions League final in Munich by winning this year in front of a German crowd at the final in Berlin. It also means adding a European Championship title to his accolades with the German national team.

The 28-year-old keeper makes winning look easy, and his bold challenges against opposing strikers well outside the penalty area have become a Manuel Neuer trademark. But the truth is that Neuer works extremely hard at his craft, with an adventurous goalkeeping style that aligns with the bigger team strategy at FC Bayern Munich, set by head coach Pep Guardiola. "I've been a goalie for over 20 years," he says. "I know my position and I know what comes with it. I know that I'm the last man, and that when I make a mistake, a goal is usually the result. But I can live with that. Even though it's on my shoulders, I don't let it drive me crazy, because I love my job."

How can a player keep improving after winning the World Cup?

Everything starts back at zero, that's the nice part about it. Of course, every team wants to beat the World Cup champs, and every team wants to beat Bayern Munich. Nothing comes easy as a player or a team, which is why you have to build everything up once again. Nothing happens on its own.

The idea of lifting the trophy must be a huge motivator before a big game, but what motivates you when you aren't about to play in a final?

The day to day stuff is important, so you even have a chance of reaching the final matches. We can't just say: 'We only want to play in the final.' We have to work for it over the entire season. The games during the season help ensure that you are in your best form for when the finals do come.

122

the amount of saves Manuel made in 2014

1,000 MINUTES

Manuel Neuer's record without conceding a goal for Bayern Munich

Have you always been prepared to take a risk?

For me, taking risks is part of the sport. It's my game: I'm an offensive keeper who tries to clear certain situations before they turn dangerous, like when a striker is on his own and running toward me. There's a certain element of routine for me there. There's no time to really think about it, it's just intuition.

How does a coach get the best performance out of you as a player?

[Pep Guardiola] has the philosophy that we should play for possession, and that I should be part of that. That means instead of ten field players, I play as the 11th. That gives the team the feeling that we're one entity working together, and that I'm not left out. It used to be that you might spend a lot of time working with the goalkeeper coach on keeper-specific training, but now a keeper is becoming more involved in tactical formations in practice. I feel very much a part of this team, and I'm glad that things have developed that way.

How has FC Bayern Munich developed a winning team mentality?

It's developed when you spend time in a training camp together. When you spend a whole season sitting together in the bus, or in team meetings. You speak with each other and communicate, you talk things through and criticize – those are positive things.

How do you keep from being frustrated and critical of yourself when you give up a goal?

You are frustrated and critical of yourself, but I had a sports teacher once who always said 'no matter what the score is, for you as a keeper it always starts back at zero.' Maybe you let in a goal, but you can't start doubting everything. You've got the chance to keep going until the referee blows the final whistle. ■ *Matt Zuvela*

tinyurl.com/del-bayern

THE NEW REALITIES OF GLOBAL MANUFACTURING

Cost-competitiveness is redrawing the manufacturing map

AN ESSAY BY HAROLD L. SIRKIN

Harold L. Sirkin is a senior partner and managing director in the Chicago office of The Boston Consulting Group and the author of GLOBALITY: Competing with Everyone from Everywhere for Everything. With Michael Zinser and Justin R. Rose, he is the co-author of a new Boston Consulting Group report called The Shifting Economics of Global Manufacturing: How Cost Competitiveness is Changing Worldwide.

For the better part of three decades, a rough, bifurcated conception of the world has driven corporate manufacturing investment and sourcing decisions. Latin America, Eastern Europe, and most of Asia have been viewed as low-cost regions. The U.S., Western Europe, and Japan have been viewed as having high costs.

But this world view now appears to be out of date. Years of steady change in wages, productivity, energy costs, currency values, and other factors are quietly but dramatically redrawing the map of global manufacturing cost-competitiveness. The new map increasingly resembles a quilt-work pattern of low-cost economies, high-cost economies, and many that fall in between, spanning all regions.

In some cases, the shifts in relative costs are startling. Who would have thought a decade ago that Brazil would now be one of the highest-cost countries for manufacturing — or that Mexico could be cheaper than China? While London remains one of the priciest places in the world to live and visit, the UK has become the lowest-cost manufacturer in Western Europe. Costs in Russia and much of Eastern Europe have risen to near parity with the U.S.

To understand the shifting economics of global manufacturing, the Boston Consulting Group analyzed manufacturing costs for the world's 25 leading exporting economies along four key dimensions: manufacturing wages, labor productivity, energy costs, and exchange rates. These 25 economies account for nearly 90 percent of global exports of manufactured goods.

The new BCG Global Manufacturing Cost-Competitiveness Index has revealed shifts in relative costs that should drive many companies to rethink decades-old assumptions about sourcing strategies and where to build future production capacity. To identify and compare the shifts in relative costs, we analyzed data in 2004 and 2014. The evaluation is part of a series of findings from our ongoing research into the shifting economics of global manufacturing.

In developing the index, we observed that cost-competitiveness has improved for several countries and become relatively less attractive for others. Within the index, we identified four distinct patterns of change in manufacturing cost-competitiveness. They include the following:

1. Under Pressure

Several economies that traditionally have been regarded as low-cost manufacturing bases appear to be under pressure as a result of a combination of factors that have significantly eroded their cost advantages since 2004. For example, at the factory gate, China's estimated manufacturing-cost advantage over the U.S. has shrunk to less than 5 percent. Brazil is now estimated to be more expensive than much of Western Europe. Poland, the Czech Republic, and Russia have also seen their cost-competitiveness deteriorate on a relative basis. They are now estimated to be at near parity with the U.S. and only a few percentage points cheaper than the UK and Spain.

Illustration: Ini Neumann

2. Losing Ground

Several traditional high-cost countries that were already relatively expensive a decade ago have lost additional ground, resulting in 16 to 30 percent cost gaps relative to the U.S. This is largely because of weak productivity growth and rising energy costs. The countries losing ground include Australia, Belgium, France, Italy, Sweden, and Switzerland.

3. Holding Steady

From 2004 to 2014, the manufacturing cost-competitiveness of a handful of countries held steady relative to the U.S. Rapid productivity growth and depreciating currencies have helped keep costs in check in economies such as India and Indonesia — even as wages have grown quickly. In contrast to the dynamic changes in India and Indonesia, the Netherlands and the UK have seen relative stability across all the cost drivers we examined. The performance of these four countries has positioned them as potential future leaders in each of their respective regions.

4. Rising Global Stars

Cost structures in Mexico and the U.S. improved more than in all of the other 25 largest exporting economies. Because of low wage growth, sustained productivity gains, stable exchange rates, and a big energy-cost advantage, these two nations are the current rising stars of global manufacturing. We estimate that Mexico now has lower average manufacturing costs than China on a unit-cost basis. And except for China and South Korea, the rest of the world's top-10 goods exporters are 10 to 25 percent more expensive than the U.S..

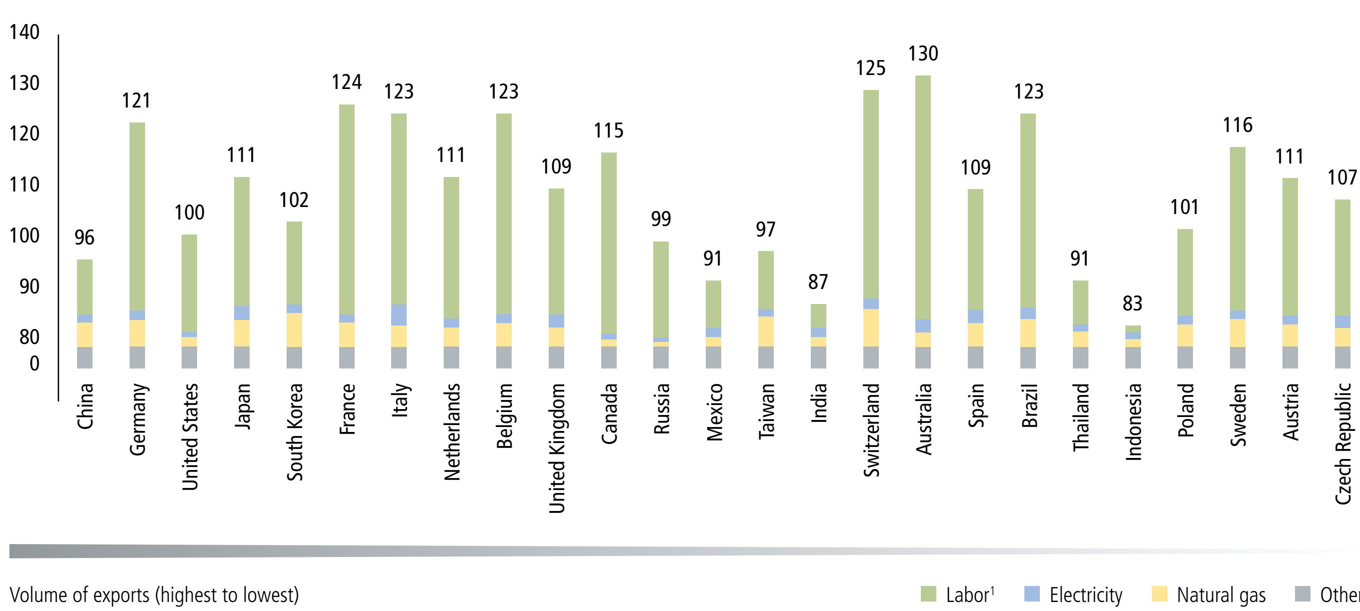
These dramatic changes in relative costs could drive a large shift in the global economy as companies are prompted to reassess their manufacturing footprints. One implication is that global manufacturing could become increasingly regional. Because relatively low-cost manufacturing centers exist in all regions of the world, more goods consumed in Asia, Europe, and the Americas will be made closer to home. These trends also have implications for governments whose leaders increasingly recognize the economic importance of a stable manufacturing base. ■

The Boston Consulting Group report The Shifting Economics of Global Manufacturing: How Cost Competitiveness is Changing Worldwide, by Harold L. Sirkin, Michael Zinser and Justin R. Rose, can be downloaded here:

tinyurl.com/ del-bostonconsultinggroup

COMPARING THE TOP 25 EXPORT ECONOMIES

Manufacturing cost index, 2014 (U.S. = 100)



Sources: U.S. Economic Census; U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; International Labor Organization; Euromonitor International; Economist Intelligence Unit; BCG analysis.
Note: The index covers four direct costs only. No difference is assumed for other costs, such as raw-material input and machine and tool depreciation. Cost structure is calculated as a weighted average across all industries.
[1]Adjusted for productivity.

WHAT´S THE STORY, MR. RUST?

HOLDING THEIR HORSES

Ruediger Rust, Manager Americas Network Control Group DHL Express, explains what it takes to transport highly-valued four-legged passengers by air.

We transport horses by air for a variety of reasons. It can be an occasional journey, such as moving to summer or winter training camps; it can be more frequent travelling to attend shows or events; or it can be to new owners who are adding more horses to their collection. It's our job to get the animals to their destination on time, in comfort and feeling relaxed and ready to compete.

My team looks after the Latin American operation. For example, we recently delivered dressage horses to the Pan American Games in Mexico. Another of our other well-travelled passengers is a famous prize-winning horse who we moved from Panama to San Juan.

We transport the animals using specially designed horse boxes. There's room for up to three grown horses to be transported together in the boxes with the dividing walls in place. If a customer wants more space for their animal, they might ask us to remove the dividers and book the whole space for just one horse. It's vital that transporting a horse by air isn't stressful for either the animal or its owner. It is always a challenge if a horse gets nervous as it is being loaded, but we generally manage this by letting the customer's own horse attendant or groom walk the animal into the horse box and stay with it. That contact is important.

Sometimes a horse will have special travelling needs: we're always happy to allow a mare to travel together with its foal, for instance. Then there's the in-flight catering! Shippers or their agents supply hay for our horses if needed, and absorbing material for waste is placed on the floor.

All the team have special training in how to handle all kind of animals for air transportation, according to IATA (International Air Transport Association) regulations. When you're working with precious and expensive animals you need expert capability – for example, knowledge of different quarantine regulations for each country. You also need to love what you do. Whether we're transporting elite racehorses and breeding stallions or more playful horses such as pet ponies, we enjoy looking after them and ensuring their safe delivery. ■ *Angela Singleton*

HORSE POWER

Ruediger and his team transport 10 horses around Latin America in the average week – but it can be as many a three horses per day.

$8.3 million. the price a one-year-old filly fetched at auction in 2013 – thought to be the most expensive horse in the world.

43.97 mph. the top speed achieved by Winning Brew – named by the Guinness Book of Records as the fastest racehorse in the world.

Photos: DHL(2), SZ Photo

The symbolic end of communism is forever etched in peoples' minds as the dismantling of the Berlin Wall. But the event which first defined that freedom came at a price in this city was the Berlin airlift. Delivering food, clothing, coal and other essentials was a huge undertaking costing 101 lives and, by some estimates, as much as $500 million (about $5 billion today). For 15 months in 1948-49, the United States, Great Britain and other allies supplied Berlin by air after Russia closed all road, rail and sea access to the city.

It was also one of the greatest logistics stories of all time and the start of modern day air freight transportation. Over the period, C-47s and C-54s transported over 2,876,000 tons of material to four West Berlin airports until the Soviet Union reopened access in May 1949.

As a demonstration of the alliances' logistics capability, on one day in April 1949, Berlin airlift operations delivered 12,941 tons of coal in 1,383 flights without a single incident and that month's tonnage flown into the city exceeded that previously brought by rail.

11th March 2015

Global trade is making the world a better place for everyone, everywhere.

It is the engine that drives economic growth across every continent on the planet.

Growth that fuels the wealth necessary for communities in the remotest regions to invest in the education, technology and medicines that will help lift millions of people out of poverty.

I believe that a prosperous world needs more connections.

The more the world opens its borders, the more it improves the free-flow of business and the exchange of ideas, the greater the opportunities for the broader population.

This is the power of global trade.

As the logistics company for the world our continued aim is to partner businesses of all sizes, anywhere in the world, helping them to develop, grow and prosper.

Of course there is still a long way to go, but, as an active and enthusiastic ambassador of global trade, I believe we can continue to boost trade around the world and in so doing, help developing regions invest in their economies and their people to enjoy better lives.

Dr Frank Appel
CEO Deutsche Post DHL Group

dhl.com/globaltrade

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