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THE GLOBAL LOGISTICS MAGAZINE

ISSUE 04/2013

FOCUS

Tanzania. Fueled with optimism

Meet Africa's newest energy player

BUSINESS

Africa's real story

Risky? Corrupt? Inefficient? Think again

VIEWPOINTS

Sheikh Ahmed bin Saeed Al Maktoum

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COVER STORY

THE END OF EASY

The tough challenges of exploiting new energy sources

Dear reader,

The age of the $100 barrel of oil is here to stay, and without doubt we'll reach even higher prices again in future. And yet, the global thirst for energy continues unabated, no matter the cost and the continuing debate about sustainable growth. Fueled by this demand, the oil and gas industry is now looking to exploit new sources, which require more elaborate technical processes and pose intricate logistical challenges, as our "Focus: Energy" story explains.

In "Executive View," Michael Mwanda, Board Chairman of Tanzania Petroleum Development Corporation, shares some fascinating insights into developing new energy sources as his country stands on the brink of enormous progress and change following recent discoveries of vast gas reserves.

Africa is certainly going to become a major energy player. But reducing the continent merely to a provider of resources would be too simplistic. In "Africa moves beyond the myths" our experts challenge some common preconceptions and lay open the Africa opportunity that is most definitely there for those willing to make the first move. The time to invest is now!

As Africa rises, the Gulf region could have a key role in connecting the new East African players with developers and markets in Europe. His Highness Sheikh Ahmed bin Saeed Al Maktoum tells *Delivered.* how Dubai plans to further enhance its status as a key regional logistics hub and connect key markets on all continents.

I hope you find in this issue of *Delivered.* a refreshing look at new markets and old markets undergoing renewal.

Sincerely,

Bill Meahl

Bill Meahl
Chief Commercial Officer, DHL

Cover photo: Alex Telfer/Gallery Stock/laif
Photos on this page: DHL, Sebastian Meyer/Corbis, Hendri Lombard, Francesco Zizola/Noor/laif

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

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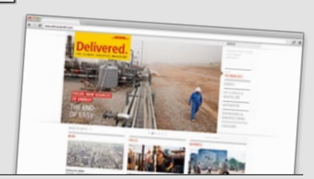


Our cover story, digitally delivered
www.delivered.dhl.com/energy

NEWS

China starts emissions trading

The first of seven carbon emission trading schemes was launched in Shenzhen in June.

The pilot project aimed at curbing pollution by capping the volume of emissions is already being lauded as a step in the right direction, as the world's second-biggest economy works to show it is serious about addressing global warming.
Shenzhen, which is situated across border from Hong Kong, is among the Special Economic Zones (SEZs) of China, housing some 11 million residents. The smallest of the seven schemes, the Shenzhen market will cover 635 companies in 26 sectors, which include water supply, natural gas, manufacturing, industrial, and electricity.
Together, these companies were responsible for one-third of the city's emissions in 2010. The pilot project is said to represent the first step toward what might become a nationwide carbon trading scheme after 2015.
Trading schemes are also to be rolled out in Tianjin, Shanghai, Hubei, Guangdong, Chongqing, and Beijing throughout 2013. Together, the seven schemes are expected to regulate around 800 million to 1 billion tons of emissions by 2015.
In 2012, China, the world's largest carbon emitter, said emissions will keep rising until its per capita GDP is five times the current $5,000 per capita.
2011 saw the country adopt targets to decrease energy consumption per unit of GDP by 16%, reduce CO_2 emissions per unit of GDP by 17%, and raise the proportion of non-fossil fuels in the overall primary energy mix to 11.4%.

1 BILLION TONS
of CO_2 is the amount of emissions China expects to regulate by 2015.

Learn more about China's CO_2 trading scheme at:

tinyurl.com/ChinaCO2

BRAND AMBASSADORS: THE NEW SMARTPHONE ACCESSORY

Increasing brand competition in an already crowded market is driving some mobile device makers to use celebrities to spice up their image.
BlackBerry appointed Alicia Keys Global Creative Director, hoping to give the original smartphone provider a kick among creatives. Sony got Katrina Kaif's endorsement in an attempt to increase sales in the burgeoning Indian market. And HTC has brought Robert Downey Jr. on board. Only time will tell if the public's love affair with these big names will boost sales to match the current smartphone stars.

DEVELOPMENTS IN ASIA-PACIFIC: NEW CONNECTIONS, FASTER DELIVERIES

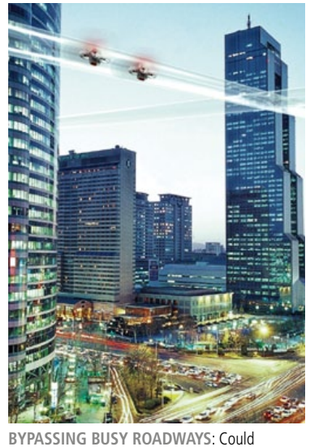
With a 10% annual growth in trade expected between Asia and the Americas by 2020, DHL has enhanced its network between the continents to provide additional routes, improve transit times, and increase capacity on some of the world's busiest trade lanes.
Next-day delivery from Japan to the U.S. will be realized through a daily direct connection between Nagoya and Cincinnati. Return service from Cincinnati to Tokyo will give shippers in the Americas the possibility of two-day Express delivery to all metropolitan areas in Japan. The enhanced capabilities in Japan will also optimize DHL's U.S.–Australia service, with connections between Japan and Australia increasing the number of wide-bodied aircraft flights to Sydney to four times per week. Traffic on the U.S.-Australia trade lane grew at over 13% in 2012, making additional frequencies a must in this flourishing market.
Additional reinforcement in the Asian market comes in the form of a new wide-bodied freighter flight linking the Taiwanese capital Taipei to Incheon, Korea and Nagoya, Japan. Connecting Taiwan and Korea to the Nagoya-Cincinnati service will provide additional capacity for customers shipping to the U.S. from these three leading Asian markets.

NAGOYA: Next-day delivery to the United States via Cincinnati.

Photo: W. Hannes/plainpicture, AFP, Dan MacMedan, 2013 FilmMagic, DHL, Matternet

DRONES: A FUTURE LOGISTICS SOLUTION?

At present known mainly for their use in intelligence-gathering and in theaters of war, drones are able to quickly and safely get to places that would remain inaccessible overland.
For the billions of people living in poverty around the world, these unmanned aerial vehicles could prove life-saving when used to transport medications quickly and efficiently to locations where even the most basic roadway infrastructure is lacking. At least that's the idea behind the Silicon Valley-based start-up Matternet, which hopes to use drones to solve logistics problems by bypassing roadways altogether.



BYPASSING BUSY ROADWAYS: Could networks of unmanned aerial vehicles transform commercial logistics?

The Drone Act, passed by the U.S. Federal Aviation Authority (FAA) in 2012, allows for "the safe integration" of all kinds of drones into American airspace, including those for commercial use, by September 30, 2015. Could the use of drones in commercial logistics be on the cards in the not very distant future?

Learn more about the commercial use of drones and Matternet at:

matternet.us

PARISIAN PREMIERE: The Airbus A350 XWB makes its public debut.

AIRBUS: INTRODUCING THE NEW A350 XWB

Orders worth more than $150 billion were confirmed at the 50th International Paris Air Show, where the A350 XWB was presented just days after taking to the skies for its first test flight. Airbus' answer to the Boeing 787 Dreamliner, the XWB's airframe was designed with over 70% advanced materials combining composites with titanium and advanced aluminum alloys. The design brings added fuel efficiency, lower CO_2 emissions, and operating cost savings in excess of 25%. Though still in the test phase, Airbus anticipates delivery of the new aircraft in the second half of 2014.

FACTS & FIGURES

Fuselage width	Maximum seating	Range
5.96 m	**350 seats**	**15,600 km**

Made in the USA: Motorola's Moto X

CELLPHONE PIONEER MOTOROLA announced that it is opening a manufacturing facility in Fort Worth, Texas to produce its new flagship device, Moto X, the first smartphone ever assembled in the U.S. Joining other electronics companies, including Apple Inc., in bringing assembly jobs back to the U.S., the company is the latest to join the recent trend of reverse offshoring. **More details on page 25.**

Diplomatic duty: Bags for Lithuania

LITHUANIA TOOK OVER THE ROTATING PRESIDENCY OF THE EUROPEAN UNION for six months beginning July 1, 2013. DHL has been entrusted by President Dalia Grybauskaité with delivering vital shipments of diplomatic bags between Vilnius, Brussels, and other European capitals, which are afforded specific legal protections under the Geneva Convention. The use of Time Definite or Next Business Day services and even a special diplomatic courier to accompany the shipments ensures these key documents arrive securely on time.

Pizza to go: World's largest delivery

THOUGH DHL IS NOT NORMALLY IN THE PIZZA DELIVERY BUSINESS, its work with the non-profit Pizzas 4 Patriots program drew the attention of the *Guinness Book of World Records*, which in May 2013 crowned a 23-ton shipment the "world's largest pizza delivery." The Chicago specialty deep dish pies made the 11,000-kilometer trip from Chicago, Illinois to Afghanistan packed in dry ice so they would be fresh for U.S. Independence Day celebrations on July 4, 2012.

RESPONSIBILITY

500

TONS LESS CO_2 PER YEAR

BONN GETS CARBON-FREE DELIVERY

Former German capital Bonn will be the first location in Germany with a comprehensive carbon-free vehicle concept for mail and parcel delivery. The pilot project by DPDHL in cooperation with the city will see about 141 electric vehicles on the roads in and around Bonn by 2016, resulting in decreased CO_2 emissions of over 500 tons per year. Even at the start of the project in the summer of 2013, Bonn was already host to one of the world's largest fleets of electrically powered commercial vehicles for combined delivery. The vehicle fleet includes "Streetscooter," a compact delivery vehicle developed specially by the German electro-mobility startup Street Scooter for DPDHL with a range of up to 120 kilometers. "This pilot project is unique worldwide and can serve as a role model for other cities and regions," said DPDHL CEO Frank Appel.

TIGHTER AIR CARGO SECURITY REGULATIONS IN EFFECT

Enhancements to already stringent security regulations aimed at making the skies above the EU the safest in the world went into effect on April 29, 2013, meaning changes for companies using air freight departing the EU.

AIR CARGO SECURITY: Regulated agents must meet strict EU standards.

When the European Commission set out in 2008 to keep the skies above Europe safe, they created a set of policies not only for passenger transport, but also for air cargo. The two-pillared approach intended to ensure that "all cargo and mail shall be subjected to security controls prior to being loaded on an aircraft" has brought changes for companies shipping air cargo departing the EU. In principle, the policies allow for a secure supply chain that can start with the consignor's processes and premises and the secure control of consignments by a hauler or freight forwarder handling shipments that move throughout the supply chain.

In order to establish a secure supply chain, companies need to take many variables into account. Factories and warehouses need to be secured via closed entry gates and doors. Employees handling goods for air transport need to undergo extensive background checks and highly specialized security training, as do the drivers tasked with bringing deliveries to the air freight terminal.

In fulfilling these requirements, a company can obtain certification as a "known consignor," the official validation by an EU member state that a company has met cargo protection and training requirements that ensure a secure and protected supply chain before the cargo is handed over to the agent. Even though the initial implementation can be costly, as security measures already amount to up to 4% of turnover, compliance is critical as this newly implemented legislation can prove both time- and cost-consuming if not adhered to.

Without certification that a delivery has come from a secure supply chain entity, cargo handed over to freight forwarders and haulers authorized by EU member States as "regulated agents" needs to be screened extensively, adding time to the shipping process. These regulated agents are certified at the country level according to requirements similar to those for known consignors. Employees undergo background checks and are trained extensively in security procedures for verifying cargo.

Unsecured cargo taken on by a regulated agent is required to be physically screened using a number of options, including physical checks such as x-ray, trace detection, and sniffer dogs before being loaded onto an aircraft.. DHL Global Forwarding invested in additional screening capabilities to cope with the recent change in legislation and the slow uptake of known consignors in some markets. Therefore for those customers that do not wish to participate in the known consignor program, the company can take necessary actions itself or with its business partners to secure air cargo.

"We are ready to help customers in understanding the regulations and have provided consultancy on options for a number of companies already," says Stephen Smith, Head of e-Business Airfreight.

tinyurl.com/civil-aviation-security

THE GOGREEN PROGRAM – A FIVE-YEAR SUCCESS STORY

5 years ago, Deutsche Post DHL launched its GoGreen program and became the first logistics company in the world to set a measureable climate protection target. By 2020, the group intends to improve its CO_2 emissions by 30% compared with the 2007 base level. The program also provides customers with a range of environmentally conscious shipment options and energy-efficient consulting opportunities. Demand for green products and services has steadily risen over the years: in 2012, more than 2.4 billion GoGreen shipments were sent and about 180,000 tons of CO_2 were offset for customers – this is about 30% more than 2011 and over three times as much as 2009, when the total was 704 million shipments. "GoGreen is a real success," says Christof Ehrhart, EVP, Corporate Communications and Corporate Responsibility. "Since its beginnings, we have continuously improved our own carbon footprint and are already halfway to meeting our goal of reducing our emissions by 30% by 2020. Environmental protection has a permanent place in our strategy and is reflected in group-wide guidelines regarding such issues as paper, procurement, and investments."

GOGREEN
Environmental protection with DHL

Photos: Bloomberg, DHL (2), Getty Images

FOCUS:
ENERGY

The End of Easy

The Age of Oil is far from over, but the Age of Easy Oil is drawing to a close. The exploitation of new oil and gas sources, made economically viable by rising demand, involves elaborate technical processes and the logistical challenges of supplying some truly remote locations.

MIDDLE EAST: Even here drilling for oil and gas is becoming more challenging.

THE BARNETT SHALE: This major onshore natural gas field, holding at least 71 km² of natural gas, lies partially under Fort Worth, Texas.

How much is the energy business changing? In May, the U.S. Department of Energy approved the construction of a second terminal to export the country's natural gas. The next month, Abu Dhabi announced that it was speeding up steps it is taking to reduce its economic dependence on fossil fuels. And beneath these two disparate data points lies a global shift in the energy business that is driven less by international politics than by new technology.

When the media cover innovation in the energy business, the news usually involves renewable energy sources – think kite-generated wind power or inexpensive, easy-to-install solar panels. These innovations are significant, since they will drive down the cost of sustainable power. So far, however, the technologies that have allowed the U.S. to produce more energy – and played a significant role in driving down global energy prices from their 2008 high – are those that have made it practical to access new sources of oil and natural gas.

Consider shale gas, the direct cause of rising U.S. exports, as well as Abu Dhabi's shift in strategy. It now accounts for more than one-fifth of U.S. natural gas production, up from 1% in 2000. Although natural gas was first extracted from shale formations in 1821, it didn't become an economical energy source until the hydraulic fracturing ("fracking") process was refined in the late 1990s. Hydraulic fracturing and horizontal drilling are also fueling an oil boom in North Dakota that has given the state the lowest unemployment in the U.S. And seismic imaging is allowing energy companies to drill for deep water oil – deposits under more than 1,500 meters of ocean – off the coasts of Brazil and East Africa.

Together, these innovations represent what the energy expert Daniel Yergin calls a "great bubbling of innovation," stimulated by the long-term rise in oil prices as well as the growing demand for energy. Two decades ago, none of these technologies would have been practical, because the prices of oil and gas were too low to justify their cost. Innovation has also been spurred by demand, since energy consumption is expected to rise by about 50% over the next 25 years, mostly due to increasing prosperity in China and the rest of the developing world. Over the long term, renewable energy will play an increasingly important role in helping to meet the world's energy needs, and a variety of efficiency gains could cut energy use in Europe. But most analysts believe that any decline in fossil fuel use there will be offset by non-OECD countries. The Age of Oil will not be over any time soon.

5,335 BILLION

cubic feet of shale gas was produced in the U.S. in 2010. Up from 1,293 in 2007, according to the U.S. Energy Information Administration.

What is ending might be thought of as the Age of Easy Oil. Due to an apparent drop-off at some Middle East oil fields, some experts estimate that oil production from traditional wells is now declining by 5% a year. There is still plenty of oil left in the world. But many of the new sources of oil and natural gas in China and East Africa, as well as the U.S., are either harder to get to or harder to work. "All the easy oil and gas in the world has pretty much been found," an ExxonMobil spokesperson told the *New York Times* in Angola, which is becoming an energy power thanks to deep-water wells. "Now comes the harder work in finding and producing oil from more challenging environments and work areas."

Photos: previous spread: Sebastian Meyer/Corbis; this spread: Jared Moossy/Redux/Redux/laif

FIELDS OF DREAMS

The one thing new sources have in common is complexity. In some cases, that applies to the work itself, such as extracting gas and oil from shale. In others, it has more to do with the location, whether that is western China, East African countries like Mozambique, or the Lula oil field, which lies 250 kilometers off the coast of Brazil. This complexity makes safety and environmental concerns more significant – and oil price volatility makes cost management a priority as well. Given their stratospheric fixed costs, many of these new projects need to run efficiently in order to make a profit.

To operate as efficiently as possible, many energy companies already outsource supply chain services such as shipping, warehousing, and procurement coordination. And as projects get more complex, third party logistics (3PL) companies are moving up the value chain, running maintenance, repair, and operations (MRO), and even helping to plan projects. Employed properly, 3PL companies can not only reduce operating costs but also help design projects and ensure compliance with relevant environmental and safety regulations. The energy business already spends almost a quarter of a trillion dollars a year on logistics, and MRO spending alone is expected to grow by 6% a year over the next half-decade, according to Oliver Wyman.

To understand the growing demand for logistics services in the energy sector, consider the complexity of extracting natural gas from shale. This involves hydraulic fracturing, which requires expensive equipment, a variety of chemicals, and considerable volumes of water. Projects in remote locations are not easy to supply, those closer to populated areas involve extra environmental concerns, and few companies have experience running such projects, or navigating the relevant regulations. Safely disposing of water used in the hydraulic fracturing process presents its own challenge. So does coordinating, supervising, and ensuring the regulatory compliance of all the contractors involved.

Logistics for these projects involves more than delivering the right equipment at the right time. They

"IT'S ABOUT GETTING THERE SAFELY AND BEING ABLE TO RUN A SUPPLY CHAIN THAT CAN SUPPORT EVERY EVENTUALITY IN A REMOTE PLACE."

Steve Harley,
President DHL Energy Sector

TECHNOLOGY IS TURNING THE U.S. AND CANADA INTO **NATURAL GAS POWERHOUSES**

After decades of concern about energy independence, techniques such as hydraulic fracturing and horizontal drilling have sparked something of a U.S. oil and gas boom. In 2012, U.S. traditional energy production grew the fastest in the world, according to BP, thanks largely to shale production. That means the country is less dependent on OPEC imports – welcome news in politics. But the real benefits are economic: natural gas prices have declined sharply, and North Dakota now boasts the nation's hottest economy. In May 2013, the U.S. Department of Energy approved a second export license for natural gas, just two years after issuing its first, with more expected soon. The boom's effects are also being felt in Canada, a traditional energy exporter which may need to find new markets.

TO FRACK OR NOT TO FRACK?
THE PROS AND CONS OF HYDRAULIC FRACTURING

IN SEARCH OF SHALE GAS: A drill sets about the fracking process on a dedicated site.

PRO **Extracting shale gas has become a much debated and controversial topic. Some politicians tend to favor hydraulic fracturing, with varying amounts of oversight and regulation,** because it generates jobs and reduces a country's dependence on imported oil, while economists view it as a way to bring down energy prices. But environmentalists disagree about its effects, weighing the possibility of pollution against the fact that the resulting natural gas produces less greenhouse emissions than oil, and much less than coal. That is why some environmentalists see it as a "bridge fuel" to a clean energy future.

CON **But that bridge could also be "a gangplank to more warming and away from clean energy investments," according to Anthony R. Ingraffea,** a professor of civil and environmental engineering at Cornell University. Natural gas still generates some CO_2, and price declines driven by fracking would make renewable energy more expensive by comparison – as rising oil prices were renewing investor interest. Worse, say some, fracking projects can lead to leaks of methane, which has a far stronger greenhouse-gas effect than CO_2, and they require significant volumes of water, which must be isolated or treated to keep from polluting drinking water.
The debate is complex and multifaceted, with many different viewpoints.

Learn more at the Economist Debate:

tinyurl.com/EcoFrack

involve keeping assets visible, often with a control tower that offers a bird's-eye view of an entire supply chain, and making sure that all contractors can update it when needed. "It's about getting there safely and being able to run a supply chain that can support every eventuality in a remote place," says Steve Harley, President, DHL Energy Sector.

REMOTE CONTROL

Although shale projects in the U.S. and Canada have received the most attention, partly because they were among the first to be exploited effectively, other countries have just as much promise. China has more shale gas reserves than the U.S. and Canada combined, according to the U.S. Energy Information Administration, and China is eager to reduce reliance on oil and coal. But the most promising finds are in western China, where it will be challenging to find the water needed for hydraulic fracturing, as well as the relevant expertise – most of which is now in North America.

"There's very large amounts of water, sand, and other materials that have to be transported in order to make this kind of project work, so there are strong implications for a supply chain," says Harley. For projects like these, many 3PLs offer consulting and other services, and DHL's energy business includes its own innovation team. "We see an increasing amount of testing, preparation, and design before mobilizations because these mobilizations are becoming very expensive. It's not just about logistics, it's about the investment in testing the equipment that's going to be used in places where it has never been used before."

Another area that is seeing an energy boom is East Africa. Tanzania and Mozambique have enough natural gas reserves to become the third-largest source, and oil has been found in Uganda and Kenya. The continent's energy business is more established than some people realize: Africa already supplies China with 30% of its oil. But projects in East Africa present their own challenges – from infrastructure to political instability and, since some are offshore, even high seas piracy.

Some of the infrastructure needed to unlock the potential of East Africa's energy business may already exist – in the Middle East. The energy business has a history there, so some countries already have the warehouse technology and relevant expertise, and many of them also provide the security and legal structure the energy business needs. In 2010, DHL set up a major regional hub in Dubai, where the proximity of the port to the airport makes it inexpensive to coordinate shipping. "Dubai is a place with very strong logistics capabilities," Harley says. "It has the expertise, the technology, and the physical facilities."

UNDER THE SEA

In terms of logistics, no location is more remote than the ocean. And although offshore oil drilling has a long history, energy companies are now extracting more oil farther out to sea, and in deeper water. Brazil's Lula oil field (formerly the Tupi oil field) is 250 kilometers off the coast, under 2,000 meters of ocean and another 5,000 meters of rock. The basic supply-chain problem is obvious: it's not exactly easy to go back to the warehouse for an extra wrench. But solving it raises a series of other questions.

"Brazil is seeing the complications of putting multiple platforms very far out to sea," Harley says. "How do you supply them? Do you set up offshore warehouses – tankers used as storage units for spare parts and equipment? Do you invest in marine transportation? Helicopters become increasingly expensive, so deep water brings a whole new series of challenges to running supply chains."

The stakes are high: the Lula field will change the energy business in the Western hemisphere. The Age of Easy Oil is ending, but the future of the energy business will bring opportunities along with challenges. — ***Robert Levine***

89.2 MILLION

barrels of liquid fuel were consumed globally per day in 2012. Experts expect consumption to increase to 91.3 million barrels per day by 2014.

Photo: Michal Fludra/Demotix, imago/Fotoarena, DHL

THREE QUESTIONS FOR

Steve Harley
PRESIDENT
DHL ENERGY SECTOR

"WE'RE GOING TO SEE A MUCH MORE COMPLEX SUPPLY CHAIN."

What do you think the energy supply chains of the future will look like?
I think they're going to be more like spaghetti. The world is going to rely on multiple energy sources from multiple locations. So we're going to see a much more complex supply chain, with a concentration on everything from moving large windmills around to moving natural gas. It's going to be about moving all kinds of energy around the world and transmitting it across grids and through pipelines, which I think will cover much wider cross-border areas than they do now.

How are the demands for health and safety changing and how is that influencing the energy sector? And how seriously do you take that?
We take this extremely seriously. Without the right standards for health and safety we don't have a ticket to do business in the energy sector. Health, safety, and environmental issues affect everything in this industry, whether it's about finding new locations to work, working with new methods of extracting gas – for example, from underground deposits – or putting up windmills. HSSE is a primary factor in all of these decision-making processes, and we are contracted by our suppliers on the basis of our ability to not only monitor our own health and safety but also monitor and manage the health and safety of our contractors. So this is critical to everything we do.

How do you see the influence and importance of renewable energy in the industry?
I think it's very important to the future of the energy sector. However, I don't believe that renewable energy is going to be the principle driver for the foreseeable future. It may make up between 20% to 30% of our energy supply, and it will increase in importance, but the traditional sources of energy will remain the main ones. We cannot meet global demand without oil and gas.

"WE ARE LOOKING FOR INVESTMENT FROM COMPANIES WHICH CAN BRING IN FINANCIAL RESOURCES AND TECHNOLOGY – AND WE EXPECT THOSE COMPANIES TO TRANSFER THEIR TECHNOLOGIES TO THE TANZANIANS."

Michael Mwanda,
Board Chairman of Tanzania Petroleum Development Corporation

Photo: Hendri Lombard

EXECUTIVE VIEW

FUELED WITH OPTIMISM IN TANZANIA

Vast gas reserves have recently been found in Tanzania. What happens next is the preserve of the state-run Tanzania Petroleum Development Corporation. Its chairman, Michael Mwanda, talks about the energy opportunities, logistical challenges, and optimistic future now facing this expectant nation – and the East Africa region as a whole.

Thanks to a gas boom, Tanzania may be on the brink of a new phase in its history. Recent offshore discoveries in Tanzania and Mozambique's waters have led to predictions that the East Africa region is set to become the world's third-largest exporter of natural gas. Tanzania alone estimates that it has 41.7 trillion cubic feet (tcf) of natural gas reserves, which could more than double to 100 tcf by the year 2015.

So Michael Mwanda is keenly aware that the Tanzanian people are watching the energy industry's next moves with interest – and not a little hope. "We are still graded as a poor country," says Mwanda, who is chairman of the state-run Tanzania Petroleum Development Corporation (TPDC), through which the Ministry of Energy and Minerals implements its petroleum exploration and development policies. "There are various reasons for that. As you might have seen in the media, our people – who mostly depend on agriculture – are expecting a lot from our new gas resources. So I want to see the energy sector run in a more professional manner to satisfy those expectations, and I want to ensure that things go as planned to benefit present and future generations. I feel privileged to be leading this institution at this critical stage in our country's history." To realize his ambitions, Mwanda has assembled an experienced team around him at TPDC, which, he is confident, will deliver.

$3.5 MILLION

were the proceeds from gas sales collected by the Tanzania Petroleum Development Corporation in the fiscal year ending June 30, 2011.

NEW KID ON THE BLOCK

It is tempting to think of Tanzania as a new kid on the oil and gas block, but to get here the country's energy industry has traveled a long, hard road. Oil and gas exploration here began in the 1950s when Shell and BP drilled four wells. Back then, commercial quantities of oil and gas were not forthcoming, but it did prove the existence of a working petroleum system. Exploration efforts were renewed in the 1970s and 1980s, which led to significant gas discoveries at Songo Songo in 1974, 24 kilometers from the mainland and 335 kilometers south of Dar es Salaam, and Mnazi Bay in the southeast in 1982. But there was still no boom.

In 1995, a number of international companies acquired exploration licenses in the coastal basins, and strategies for exploring deep water offshore were established in 1999 after the acquisition of an open grid 2-D seismic survey. The huge gas discoveries made in the last three years, however, have sparked renewed interest in Tanzania. "So it has taken time and planning and it has been a long and painful process to get here," admits Mwanda. "But now we are seeing the results."

LOGISTICAL CHALLENGES

Even so, Tanzania still has three significant logistical challenges to overcome. The first is the lack of competitive goods and services involved in exploration operations, due to the relative infancy of the country's energy industry. This means that all goods and services have to be procured abroad, adding to the cost of operations. "We need to involve the private sector," says Mwanda. "We are looking for investment from companies which can bring in financial resources and technology – and we expect those companies to transfer their technologies to the Tanzanians."

ABOVE
IMPROVING INFRASTRUCTURE: A bridge is constructed in Dar es Salaam, Tanzania, amid a program of expansion and modernization.

LEFT
CHARTING THE FUTURE: Michael Mwanda points to the probability of further gas discoveries.

The second logistical challenge is a lack of professional and skilled labor from the local market. To address this, and to attract students to the oil and gas sector generally, the government is introducing appropriate curriculums at universities and technical colleges and sending its young professionals abroad to acquire industry expertise. "We need to train our own people," admits Mwanda.

The third problem is piracy. "This is a threat which has been posing operational challenges in exploration activities," notes Mwanda. "More resources are to be deployed to counter these threats and there has been success to some extent. As of last year, instances of piracy have gone down substantially." Cooperation with neighbors, particularly Kenya, is vital in this regard. Yet Mwanda is keen to stress that Tanzania itself has a peaceful reputation and a welcoming people; terrorism is not an issue, the government adheres to international business norms, "and whenever there is a hitch there is always room for discussion. Companies should be comfortable coming here."

"COMPANIES SHOULD BE COMFORTABLE COMING HERE."

Michael Mwanda

OPTIMISTIC OUTLOOK

He is optimistic, then, that these issues are solvable and he believes the forecasts are right: East Africa will become an energy-supplying powerhouse. The facts, he says, speak for themselves. "It's good to be optimistic," says Mwanda. "You live longer that way! But look: Kenya and Uganda have made discoveries in excess of eight billion barrels of oil. Mozambique has discovered nearly 200 tcf of gas. In Somalia, offshore reserves are said to contain more than 100 billion barrels of oil. So obviously, on the basis of those facts, the region will be a major exporter of oil and gas." On October 25, 2013, the government through TPDC will offer seven deep-sea blocks and one onshore block for bidding. The bids will be opened in May 2014. "More gas reserves are expected to be discovered and oil may even be discovered as well," says Mwanda. "We are not sure. But, again, we are optimistic."

Looking at how West Africa, the North Sea countries, and Brazil have developed their oil and gas industries is useful, agrees Mwanda. But he sounds a note of caution. "These are mature regions for oil and gas exploration and production and they've accumulated a wealth of experience that we in East Africa stand to benefit from. Tanzania in particular, in developing its own gas policies, has examined a number of countries' experiences and practices. So what we are doing is taking the best of their knowledge, and avoiding their mistakes. But, of course, what works in the North Sea might not be applicable to the Indian Ocean! What works in West Africa might not work in East Africa. The decision for what works best has to be ours."

DESTINATION FOR FOREIGN INVESTMENTS

Also crucial to the future vision of Tanzania as an energy exporter is better industry infrastructure, plus improved rail, ocean, and road transport links. A program of expansion and modernization is underway. Tanzania is also constructing a gas pipeline from Mtwara to Dar es Salaam, ensuring a stable supply of power and establishing industries along its 532-kilometer route. "With that, Tanzania will truly be the destination for foreign investments," says Mwanda. Statoil and BG Group are jointly studying suitable sites for a potential onshore LNG terminal and, in May 2013, Tanzania and China signed a deal to build a new port, special economic zone, and railway network, which, Mwanda forecasts, will open up significant new opportunities for trade with Asia and the Middle East. The new port at Bagamoyo, 72 kilometers northwest of Dar es Salaam, will also relieve pressure on the existing Dar es Salaam port.

Mwanda and his team know that they still have a lot to do, but seem determined to make the most of Tanzania's new opportunities. They're too good to miss. — ***Tony Greenway***

TANZANIA PETROLEUM DEVELOPMENT CORPORATION AT A GLANCE

The Tanzania Petroleum Development Corporation is a state corporation with a manpower strength of around 130. Established in 1969, it began operations in 1973 with a mission to promote and monitor the exploration of oil and gas, safeguard the national supply of petroleum products, and develop quality and safety standards to protect people, property, and the environment. The first national Oil and Gas Conference was held in October 2012 to promote awareness among Tanzanians about oil and gas. On October 23–24, 2013 a second Oil and Gas Conference will be held in Dar es Salaam, followed by the launch of the fourth Tanzania Deep Offshore and North Lake Tanganyika Licensing Round on October 25, 2013. The bid round will close on May 15, 2014. Bids will be evaluated thereafter and winners declared.

41.7
TRILLION CUBIC FEET
Tanzania's estimated natural gas reserves

Learn more about the TPDC at:
www.tpdc-tz.com/tpdc

Photo: Mauritius, Hendri Lombard

WORKING ON THE FRONTIER: Developing new supply chain solutions for a customer in Fort McMurray.

ROPE, SOAP, AND DOPE

Delivering a flawless MRO solution in the Canadian oil sands is not always just about big machinery. Nuts, bolts, and even soft drinks can be essential in keeping an oil producer in business. Getting these non-core items to remote sites just in time is a supply chain challenge that requires integrated solutions and, sometimes, being on call 24/7.

The environment can be ruthless. In winter, temperatures at Fort McMurray, Canada nosedive to minus 40° Celsius for days. Summer sees the mercury shoot up at times to 40 degrees above zero. Spring announces the arrival of floods, followed by occasional fires, which rage through the birch, spruce, and aspen forests. Even if flames do not reach towns, the billowing smoke can bring work to a standstill. Fort Mac, as locals call it, is very much a frontier town, and one devoted to frontier work: wrestling oil from the sand of Canada's remote north.

Oil sand comprises sand, bitumen, clay, and water. Extracting and upgrading the bitumen – a thick black oil, similar in consistency to molasses – into a light, sweet crude oil that can be sent via pipeline to refineries is challenging. Combined with the severe weather conditions and isolated location, it is a situation that calls for solutions to help make the flow of daily business a little easier.

In search of one such solution, a major producer in the Alberta oil sands region required an integrated MRO maintenance, repair and operating supply chain model that also provided for the procurement, delivery and management of its "rope, soap, and dope," as supply chain experts refer to basic inventory items. More than 14,800 different items needed to be delivered and kept in stock, ranging from soft drinks to valves. The answer to these logistics challenges had to somehow combine strategic procurement, tactical purchasing and supply chain solutions in perfect synchrony.

Building on the concept of third-party procurement, through which the resources of procurement experts are combined with logistics know-how and solutions, DHL Supply Chain joined forces with DHL's Global Business Services to do pioneering work of a new kind in Fort Mac: Integrated Logistics and Procurement (ILP).

Learn more about DHL's Energy Solutions:

tinyurl.com/DHL-EnEx

TAKING CARE OF BUSINESS

The entire sourcing process for the MRO was managed through the company's online sourcing tool, Emptoris, with a request for information sent to 42 suppliers, who were then narrowed down to 15 finalists based on their responses, pricing and capabilities.

From there 138 different pricing models were run for 13,000 stock keeping units – from nuts and bolts to safety goggles – to determine the optimal mix of suppliers, pricing, and product coverage for the customer. Ultimately, five suppliers were selected and negotiations resulted in a price reduction of over 15%. This process provided sourcing and modeling transparency to the customer for the first time, and enabled DHL Supply Chain to deliver above customer expectations for sourcing MRO products, even though the contract contained some tough targets – such as 97% of all items ordered needing to be onsite within seven days.

DHL's team was put to the test. With this particular customer, an item requested on Monday, then ordered from a vendor, might reach the cross-docking warehouse in Edmonton on Thursday. There the MRO items head north to Fort Mac, a six-hour drive even on good days. That leaves Friday, Saturday and Sunday to deliver. But naturally not all sites are open seven days a week, or 24 hours a day.

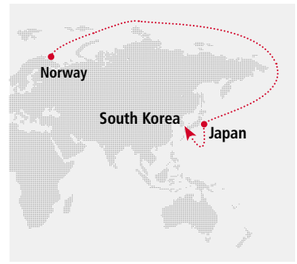
DEALING WITH THE UNEXPECTED

And sometimes true mettle is proven by how well the unexpected is handled. For example, one winter carried on way into April, and as the customer wanted to keep inventories low, they suddenly began running out of hand warmers. Working outside at minus 40° Celsius without them? Impossible! DHL's teams sourced local stores; buyers checked the market farther afield and basically bought up the entire stock of hand warmers in North America. On days like this, the procurement team is on call around the clock to keep the customer's business running.

It is a tough job in a tougher environment, but this has been an excellent learning curve for future ILP offerings. "We learned how to think like the customer," says Gene Beno, Procurement & Operations System Manager at DHL Supply Chain. "We knew what they wanted, how they would react. We're now also working on one of the largest projects in the world for another customer, and find that, with new customers it's a lot of just leveraging what we already know." — ***EW & VS***

Photo: Corbis, Action Press

GOING OVER THE TOP: SHIPPING GAS THROUGH THE ARCTIC



In August 2012, a tanker carrying liquefied natural gas (LNG) from Norway arrived in Yokohama, Japan. This was not unusual in itself – Japan is a major gas importer, Norway a significant exporter – except for the route it took. Instead of traveling across the Mediterranean, through the Suez Canal, and around Asia, the ship became the first LNG tanker to go through the Arctic Circle and over the roof of the world.

Big ships have not been crossing the Arctic for long – the voyage is only possible now, and only with a special ship with an ice-classed hull, or an icebreaker escort, because climate change has reduced the amount of ice there. But the route is expected to grow more important, as it can save tankers that take it about three weeks and as much as $3 million, according to *The Wall Street Journal*. And these savings, along with some other recent shifts in the energy market, could make the Arctic a more important source of oil and gas, as well as an efficient LNG transport route.

Much of the LNG that travels through the Arctic will go to Japan and South Korea. With no major incoming natural gas pipelines, they are two of the world's biggest importers of LNG, which is chilled under pressure for transport. Other factors also make the Arctic route more appealing. A decline in European natural gas prices, spurred by the recent rise in U.S. shale gas production, has made Asia a more profitable market. Demand in Asia is growing, partly because of the earthquake in Japan. And these shifts could last as the U.S. meets more of its own energy needs and Europe takes steps to lessen its dependence on fossil fuels.

A dependable Arctic shipping route will also make the area a more important source of natural gas. Most of the region's gas reserves lie far from shore, difficult to transport by pipeline, giving tankers an advantage. It could further boost gas exports in Norway and Russia, and lead to the development of more export terminals in those countries. It could even call into question the future of pipeline projects, like the one planned for Alaska that would help bring LNG to ports facing Asia. Suddenly, it is easier to go over the top. — ***Robert Levine***

LIQUID NATURAL GAS: Reaching East Asia via an Arctic route along Russia's coast saves time and money.

BUSINESS

BUSINESS IN AFRICA: An educated workforce and entrepreneurial spirit drive economic development on the continent.

Photos: Francesco Zizola/Noor/laif, DHL

Africa moves beyond the myths

Throw out your preconceptions about doing business in Africa. It's currently the world's most exciting development region, and opportunities far outstrip obstacles.

In 1999, when Ebenezer Essoka went to Côte d'Ivoire to expand the business of Standard Chartered Bank, the odds were stacked against him. Days after he arrived, there was a coup d'état. But 18 months later Standard Chartered's business in the Ivory Coast was breaking even.

The case of Côte d'Ivoire exemplifies the paradox of Africa. On the one hand, it was in violent civil war as recently as 2011. On the other, it is a land of great opportunity – in terms of GDP per capita, the world's 15th fastest growing economy. "The myth is not around the reality of political instability in Africa," Essoka says. "The myth is around people saying you cannot operate in a country with such instability."

TAKING A PRACTICAL APPROACH

Preconceptions and myths about Africa have given pause to some global companies looking to expand into new markets. Larger than China, India, the United States, Europe, and Japan combined, Africa's sheer size can be intimidating. And its reputation for poor infrastructure, corruption, unreliable power supplies, instable political systems, and opaque business regulations can seem to make it more trouble than it is worth. But Africa is undoubtedly the world's most exciting developing region right now. Rapid urbanization, a steady shift from agriculture to manufacturing, and service industries as well as the continent's surging population of working-age adults and middle-income earners mean that businesses around the globe cannot afford to ignore it.

The truth is, apparent barriers are not insurmountable. Once businesses understand their actual extent and start taking a practical approach to some of the obstacles, penetrating African markets becomes a reasonable and exciting possibility. "I am not going to be unrealistic and say that political instability is a myth, corruption is a myth, sub-standard infrastructure is a myth. Those are the real issues we need to deal with," says Essoka, now CEO of Standard Chartered Bank in South Africa. "The question is: have they made companies unable to perform on the continent? No. Maybe that's the real myth."

DYNAMIC NEW GENERATION

News from Africa is more likely to cover ethnic clashes or civil wars, but the quiet, steady growth of economic opportunities is the real story. Steven Radelet, a former advisor to Hillary Clinton, argues in his 2010 book *Emerging Africa: How 17 Countries Are Leading the Way* that five factors underpin Africa's promise: expansion of democracy, improved regulatory and tax policies, debt reduction, new technology, and a new generation of young and creative African business leaders. The Ghanaian scholar George Ayittey calls these young Africans "the cheetahs," describing an educated, dynamic, and agile generation looking at challenges and issues in Africa with a different and fresh perspective.

"THE BEST WAY TO KNOW A MARKET IS TAKING A FLIGHT AND GOING THERE AND SPENDING TIME REALLY FEELING THE PULSE OF THE MARKET."

Amadou Diallo,
Chief Executive Officer
DHL Freight

The spread of democracy has fostered the growth of public accountability and favorable business environments. Countries such as Senegal have had democratic traditions for the better part of a century. Mauritius, the continent's highest ranking democracy in 2012 according to the Economist Intelligence Unit, is becoming the Singapore of Africa, a modern hub for import and export.

Ethiopia held a multi-party election in 1994 and is now fighting corruption more aggressively than any place on earth, according to Essoka. African governments have also fought diligently to lower inflation, cut foreign debt, and rein in budget deficits. "In Africa most countries never felt the direct impact of the financial crisis," says Essoka. "Regulations in the banking industry are much more robust, and in some African countries regulators were more proactive and conservative than their peers in Europe and the States." And despite the global economic crisis, GDP in Africa has grown since 2000 at an average of almost 5% a year.

INVESTING IN INFRASTRUCTURE

On the other side, infrastructure in Africa, including electricity and transportation, is still lagging behind but there are plans for substantial increases in investment, forecasted to grow to approximately $200 billion per year by 2020, according to an article by McKinsey's Africa and infrastructure experts for the *New African*. With these investments focusing on transport and utilities in the four largest economies, South Africa, Nigeria, Algeria, and Angola, more clearly needs to be done and investments still have to be deployed at the levels required.

At the same time some countries are already demonstrating how even existing infrastructure can be transformed. For instance, Tanzania's Dar es Salaam port improved its operational efficiency between 2009 and 2011 by 40%, reducing container clearance from 24 to 8 days among other things. Yet, aside from efforts to improve the infrastructure and the

YOUNG AFRICANS:Well educated and ready to take things into their own hands.

DHL IN AFRICA

8 HUBS
40 GATEWAYS
244 DISTRIBUTION CENTERS AND DELIVERY OFFICES
172 WAREHOUSES

4,262 FLIGHTS PER WEEK

1,011,672 SORTING CAPABILITIES PER BUSINESS DAY

increasingly business-friendly environment, there is one source of wealth that will eventually drive more profits than any of the continent's natural resources: the rising generation of educated, technology-savvy, entrepreneurially minded Africans. This class of cheetahs is the future of Africa, reinforced by the young, educated African businessmen and women who are coming back from America or Europe after seeing the financial crises abroad.

SIGNIFICANT OPPORTUNITIES

In addition, by 2030, Africa's labor force is expected to reach 1.1 billion, exceeding India or China and making up almost a quarter of the world's potential workforce. Already about 40% of African workers have at least some form of secondary education, and that figure will rise to 48% by 2020, according to a 2010 report from McKinsey. In tandem with this, consumer spending on the continent is projected to reach $1.4 trillion by 2020 and by then there will be more than 128 million African households with discretionary income, McKinsey predicts. As consumers, Africans are especially interested in the latest technologies, whereas data about consumer needs and behavior are scarce.

Meanwhile, companies from around the world are racing to get into Africa's four main growth industries: agriculture, natural resources, infrastructure, and consumer-facing markets like retail, telecommunications, and banking. But there is plenty of room for more. According to KPMG, "there is a need for personal banking services, small and medium-size business financing, micro-finance, development finance, and opportunities for trade finance houses. The food and drinks sector needs to expand to keep up with the rapid rate of urbanization and the needs of this growing middle class, as does the retail sector. Formal retail penetration is among the lowest in the world throughout most of Africa, providing significant opportunities for the sector."

For those still waiting hesitantly in the wings: first-mover advantages in Africa are not totally gone, but will not last forever. The time for businesses to move is now. "In 2020, if you're not in, you don't need to come because the market will be saturated," Essoka says. "In the next seven years you're going to see a lot going on in the continent." Companies like DHL, which has been in Africa for more than 30 years, are paving the way for other international firms. The only logistics company operating on the continent with its own airline, it has a footprint covering the entire continent, coupled with in-depth local knowledge and the experience of more than 11,000 logistics specialists ready to help customers navigate the perceived complexities of doing business on the continent. The company uses Lagos and Addis Abeba as hubs, landing large shipments there and using smaller aircraft to move goods up and down the coasts."

AFRICA LESS FOREIGN THAN EXPECTED

"We can connect goods from Dubai and Leipzig to any place in Togo or Gabon in 48 to 72 hours," says Senegal-born Amadou Diallo, CEO of DHL Freight. "We have infrastructure that works." Diallo oversaw DHL Freight's business in Asia and Africa for 5 years and as far as he is concerned, the complexities are just that: perceptions. "It's more a lack of knowledge about infrastructure, than an actual lack of infrastructure," he says.

Companies will, according to Diallo, find Africa less foreign than they expect. "You have a French-speaking Africa that works like the French market, but without the strikes. You have English-speaking Africa, with legislation that looks similar to the British system. Then you have a Portuguese-speaking Africa with legislation like you might find in Portugal, and an Arabic-speaking Africa in the north," he says. "So if you can work in the Middle East and you can work in Europe, there is no place in Africa too exotic to communicate or understand the legislation."

While DHL's network can provide logistical support, Diallo argues there is no better experience for players looking to expand their supply chains into Africa than visiting the continent first-hand. "The best way to know a market is taking a flight and going there and spending time really feeling its pulse." In Africa's case, that heartbeat is strong, and getting stronger. — ***Zeke Turner***

ABOUT EBENEZER N. ESSOKA

Ebenezer Essoka brings more than 29 years of banking experience to his work as the Chief Executive Officer, South Africa and Area General Manager Southern Africa Standard Chartered Bank. A self-described "myth buster," Essoka was the first African national to be made a CEO at Standard Chartered.

standardchartered.com

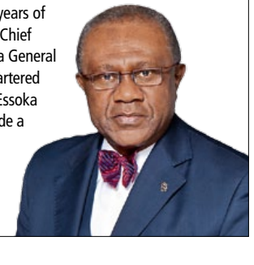


Photo: Per-Anders Pettersson/Getty Images, DHL

COULD THE EU MODEL WORK IN AFRICA? THE AFRICAN UNION THINKS IT CAN

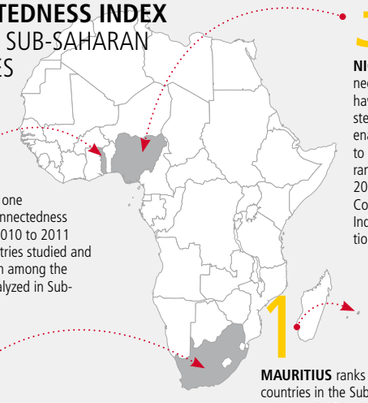
A half century ago, in Addis Ababa, Kwame Nkrumah gave a speech calling for a "union of African states." Nkrumah, the first leader of independent Ghana, came to Ethiopia for the founding of the Organization of African Unity (OAU), which brought together 32 countries to oppose colonialism and promote their economic interests. Nkrumah envisioned an even more united continent that could pursue collective foreign and economic policies, much as the European Union does today.

Back then, parts of Africa were still under colonial rule, and the OAU played an important role in fighting apartheid regimes like South Africa, which it helped isolate economically. It was far less effective against dictatorships of African origin, like Idi Amin's Uganda. Its resistance to outside interference in African affairs, so vital as countries achieved independence, enabled its own tyrants.

Gradually, the OAU became more ambitious, reinventing itself in 2002 as the African Union (AU), with bylaws that play down state sovereignty in favor of democracy. It also began to focus more on economic development. The AU, which includes every country on the continent but Morocco, now runs the African Investment Bank, to foster growth; the African Monetary Fund, to stabilize member states; and the African Central Bank, which works toward an African monetary policy. Regional free trade areas are even starting to come together as the African Free Trade Zone.

On May 25, African leaders met in Addis Ababa to celebrate the OAU's 50th anniversary and declare 2013 the year of Pan-Africanism and the African Renaissance. The continent is not nearly as united as Nkrumah would have wanted, but his vision no longer seems quite so far-fetched. — ***Robert Levine***

DHL GLOBAL CONNECTEDNESS INDEX
TOP FOUR SUB-SAHARAN COUNTRIES



3 **NIGERIA'S** connectedness scores have been growing steadily since 2007, enabling Nigeria to rise to the 49th rank globally on the 2012 DHL Global Connectedness Index, up four positions from 2011.

4 **TOGO** achieved one of the largest connectedness increases from 2010 to 2011 among the countries studied and now ranks fourth among the 29 countries analyzed in Sub-Saharan Africa.

1 **MAURITIUS** ranks first out of the 29 countries in the Sub-Saharan Africa region and 46th globally on the 2012 DHL Global Connectedness Index. High depth scores on portfolio equity investment and services trade reflect the importance of the financial services and tourism industries to Mauritius' economy.

2 **SOUTH AFRICA** ranks 48th worldwide on the DHL Global Connectedness Index and second within the Sub-Saharan Africa region. South Africa has significantly higher breadth than depth, as only 7% of its imports and 16% of its exports are intra-regional.

WHY TRANSATLANTIC FREE TRADE IS THE RIGHT STEP TO TAKE

The United States and Europe have discussed various kinds of free trade area for decades. With stagnant economies and a changing global environment, this time they need to seize the opportunity.

July marked the official launch of negotiations between the European Union and United States for a Transatlantic Trade and Investment Partnership – an agreement that would considerably boost trade and investment flows across the Atlantic.

Why is this so important? A deep and more integrated relationship between the EU and U.S. – still the world's two largest economies – offers considerable potential benefits to consumers and companies alike. Goods will be cheaper and firms will be able to more effectively invest their capital once we remove remaining tariffs and streamline regulatory barriers. Many hundreds of thousands of jobs will be created in export sectors and in the logistics companies needed to effectively transport these traded materials. It is a critical step forward since both regions are facing elevated unemployment and slow growth.

ABOUT GARRETT WORKMAN

Garrett Workman is Associate Director Atlantic Council's Global Business and Economics Program. He posts regular TTIP alerts via Twitter @TTIPAction and runs an email newsletter from ttip@acus.org

IMPROVING COMPETITIVENESS

A reinvigorated transatlantic economy will vastly improve the international competitiveness of both regions. And together they could set combined standards for the world to aspire to in environmental policy, product safety, pharmaceuticals, and any number of other industries. Exporters hoping to sell goods in either market will have just one set of rules to play by. An integrated transatlantic market would be a powerful trendsetter indeed. It would represent some 50% of global GDP.

While the benefits are fairly evident, we have to clear some significant hurdles. Traditional disputes over genetically modified food and government procurement are as evident as ever. Additionally, both U.S. and European regulators will be hard-pressed to give up the powers they have acquired in order to develop a more predictable and transparent transatlantic rulemaking process. Strong leadership from President Obama and his counterparts in Europe will therefore be vital.

The United States and Europe have discussed a transatlantic free trade area in various guises for decades. However, as negotiations for TTIP begin, this time truly seems different. Both sides recognize the need to stimulate their stagnant economies in the aftermath of the financial and Eurozone crises. Moreover, in an age of austerity, a deepened trade relationship marks a path forward that does not add to national debt levels.

TTIP is important not only because of the size of the U.S. and European economies, but because of the fast-changing global economic environment. The balance of power is shifting to the BRICS, and fast. Importantly, these are countries that often have vastly different viewpoints on democracy, the rule of law, and other areas. While this shift in power is somewhat inevitable given the sheer size of China, India, and others, the U.S. and Europe can and should do what they can to ensure their future economic competitiveness.

KEEPING AN EYE ON THE BIGGER PICTURE

Business interests, consumer groups, and civil society leaders promoting transatlantic values all have important roles to play. Politicians should keep their eyes on the bigger picture and the economic imperative to restart sustainable economic growth. A focus on the narrow differences that make up just 2% of transatlantic trade by value according to the European Commission could stop the negotiations in their tracks. That would be a missed opportunity neither the United States nor Europe can afford. — ***Garrett Workman***

Learn more about the EU's trade policy:

tinyurl.com/US-EU-Trade

THE PREDICTED BENEFITS OF FREE TRADE OVER A PERIOD OF 10 TO 20 YEARS

	U.S.	EU
Exports	+94%	+73%
GDP per capita (real)	+2.2%	+1.7%

Note: Scenario based on Ifo predictions after the reduction of all effective trade barriers to the average level seen in other free trade agreements.

Source: Ifo

Handshake designed by Jake Nelsen from The Noun Project

THE END OF OFFSHORING?

The decades-long shift of production from industrialized to emerging economies is now being reconsidered. Low wages are increasingly being offset by costs resulting from offshoring-related issues such as quality, logistics, and brand capital along with the cost of oil.

Until recently, deciding where and how to manufacture products was simple: just look for the lowest total landed cost. With low labor costs in emerging economies, producing overseas has been the most profitable path for most large western companies. But with supply chain planners facing constantly evolving economic and competitive pressures, this decision has grown more complex. Now accessibility to emerging markets, accelerating innovation, and the necessity of creating an agile supply chain have become crucial in order to stay ahead of the game.

In addressing these concerns, one strategy is regionalization. According to SCM World, "global supply chain strategy may have seen its day. The realities of distance, politics, and culture work against the idea that the whole world can be satisfactorily served from one big plant. Three mega-regions (Americas, EMEA, APAC) are beginning to define manufacturing strategy for most. Reshoring is one part of this strategy."

RESHORING CLOSER TO HOME

There are also the difficulties of managing at a distance. "Painful experiences around quality, factory and labor conditions, intellectual property theft, environmental violations, and other problems have made companies think twice about their offshoring decisions," says Bill McBeath, Chief Research Officer at ChainLink Research.

Some companies are reacting to such difficulties by relocating production, for example from Asia to low-wage countries such as Romania and Poland for goods intended for European consumption.

American companies are following suit. With wages rising at about 17% per year in Asian economies and the increasing value of the yuan, Boston Consulting Group predicts that net labor costs for manufacturing in China and the U.S. will converge by 2015. When this happens, production costs in China will only be 10 to 15% cheaper than in the U.S., and after shipping and inventory costs, the total advantage will drop to a single digit or simply vanish.

Results from an Alix Partners survey indicate that 60% of U.S. companies thinking of reshoring to the Americas are looking at Mexico, but some are even considering the United States. Motorola Mobility has announced plans to assemble its new smartphone, Moto X, in Texas – bringing home work that may have previously been outsourced to China. By moving manufacturing closer to headquarters, U.S. companies can benefit from increased accessibility to a highly trained workforce, lower freight costs, improved speed to market, and better communication.

NEW SHORES: Mexico is becoming the location of choice for many companies producing for the U.S. market.

Photo: Getty Images

Learn more about alternatives to lowest total landed costs from the experts at SCM World:

tinyurl.com/SCM-World

STAYING PRESENT IN CHINA

Still, factories in Asia will not be abandoned. Labor-intensive goods produced in high volumes – textiles, microchips, TVs – will likely continue to be made there. Most components for the Moto X smartphone will be made overseas before being shipped to Texas for assembly.

"It is not about making a choice between China and a company's home market, but about being present in both," says Michael Wiedemann, Global Head Solution Delivery & Service Management at DHL. "Supply chain consultancy is something we are constantly asked for and our highly experienced global supply chain consulting teams help customers to identify the best logistics and supply chain solutions, be it in China, Russia, Mexico, or any other part of the world." — ***Tong-Jin Smith***

NETWORK. LIKE IT OR NOT.

Contrary to popular belief, networking is about a lot more than just working a room. Devora Zack, author of *Networking for People Who Hate Networking*, shares some thoughts on what networking really means, why it is essential, and how best to go about it.

Illustration: Sabrina Tibourtine; photo: private

In my experience, those who proclaim to hate networking simultaneously believe they are not good at it. This is not the case. The real problem stems from attempting to follow networking rules that do not work for you. Standard networking advice fails most of us, so we assume we fail at networking. Plus we can't stand it. Who has time to network, anyway? Let alone keep in touch with legions of virtual strangers!

Consider a pressing and important professional goal. How do you want to develop your business? Do you want to increase revenue, identify new partnerships, diversify offerings, build contacts, develop an overseas product, expand your client base, or identify top-notch employees?

Networking will further your aim. Personal contacts are what make businesses grow and leaders succeed. A study of 40 corporations by Hay-McBer found that building strong personal relationships is twice as important as intellect or technical expertise for those in senior leadership positions. From my own experience as an executive coach, I have never met a leader who did not benefit tremendously from learning how to network.

LEVERAGE YOUR NATURAL STRENGTHS

What is networking, really? Meaningful networking is about connecting. Real networking is the art of building and maintaining mutually beneficial connections for shared positive outcomes. Notice what is not in the above definition – nothing about being artificial or shallow. That is because inauthentic behavior makes networking backfire, causing you to blow out faster than a 16-wheeler on hot summer asphalt.

The only way to network successfully is by leveraging your natural strengths and style. Allow yourself to work with – rather than fight against – your innate temperament. Like to listen, not talk? Do it. Prefer one-on-one conversations? Arrange it. Desire downtime to recharge? Go for it. The more authentic you are, the more resilient and valuable networks you create. Life is a networking event. Anywhere you go, anyone you meet, in any context, could potentially lead to a spectacular networking opportunity. That said, many executives regularly find themselves at conferences, off-sites, industry expos, conventions, and related networking venues. So let us focus there, with some specific tips for successful outcomes at corporate functions.

Cognitive scientists say it can take up to 200 times the amount of information to undo a first impression as it takes to make one. Who has that kind of spare time? Not you! Show up with the best version of you, every time. Be positive and gracious. All too often we are distracted by sizing up others rather than focusing on making the best possible impression yourself. The more senior you are, the more scrutiny you are under; the more making a positive impression matters.

Many executives lament that they simply do not have enough time to keep in touch with networking contacts. Believe me, I get it. The key here is to prioritize. Rather than fruitlessly attempting to maintain connections with 30 people you fleetingly met, decide to keep in contact with one or two people per conference – at most. Connect don't collect. Spend quality time connecting with a handful of people rather than collecting a slew of business cards and empty promises of future encounters.

ASK, DON'T TELL

Ever sense your remarks just shoot off a cliff and crash to the ground? Who needs that kind of pressure? Instead, arrive at events armed with several interesting questions. Focus on others by asking thoughtful questions and really listen to their answers. Bonus? You never need to scrounge around for conversation starters again.

One of the questions I am asked the most often is how to end a conversation gracefully while networking. It is so simple! Remind yourself that people attend networking functions to circulate, not to monopolize your air time for hours on end. Here are a few stellar "see ya" closures. Remember that a positive tone and pleasant facial expression are pivotal.

- May I have your card? It was great meeting you.
- Have you met [colleague passing by]?
- I've enjoyed our conversation! Thank you.
- I promised myself I'd circulate – I better walk around.
- I'm sure you want to talk with others; I won't hold you up.

And if you claim to be headed somewhere, really go.

FOLLOW UP OR FORGET IT

If you are not following up, you are not networking! We forget half of what we hear within 48 hours. Write a personalized follow-up within two days or risk having your brilliant remarks erased permanently from the minds of those you wowed over crudités. — ***Devora Zack***

ABOUT DEVORA ZACK

Devora Zack, CEO Only Connect Consulting, Inc., is the author of *Managing for People Who Hate Managing* (Berrett-Koehler, 2012) and *Networking for People Who Hate Networking* (Berrett-Koehler, 2010). Her books have been translated into 14 languages, and she is an international keynote speaker and consultant.

myonlyconnect.com

SOLUTIONS

Chicken or beef?

The meal on your airline tray table is the result of a complex global supply chain and twelve months of planning.

It's a challenging matter, managing the flow of millions of airline meals from kitchen to plane in a highly complex and regulated environment. Because flight catering is 80% logistics and 20% catering, DHL applies its supply chain and business transformational expertise to the global airline services market through its Airline Business Solutions team. As such, booking flight QF107 from Sydney to Los Angeles is just the beginning of a global supply chain catering to the needs of each passenger.

1 | DHL PLANNERS: FORECASTING

Twelve months before departure, DHL planners are forecasting the demand for flight QF107, using the Oracle Advanced Supply Chain Planning solution. The demand plan uses information from future flight schedules, special world events, and historical trends. With this information, Qantas can aggregate product demand for the year with manufacturing suppliers and create blanket purchase orders. At the same time DHL can plan land, sea, and air transportation for delivering these items into the hubs.

2 | MANUFACTURING SCHEDULE

The blanket purchase orders are sent electronically to suppliers around the world for the year ahead, allowing them to plan their own manufacturing and procurement schedules in order to ensure on-time availability across all the different products. Suppliers and DHL keep in close contact, providing real-time updates to the plan as they occur.

3 | PURCHASE ORDERS

Based on the forecasted demand, call-off purchase orders are created and sent to the suppliers. These purchase orders are firm requirements which the manufacturing suppliers are expected to fulfill. The suppliers use the call-off requirements to plan their manufacturing.

4 | MANUFACTURING IN CHINA

Having ensured that they have the raw materials available by using the blanket order to procure them, a Chinese manufacturer of crockery and cutlery manufactures the goods to Qantas' high standards of quality, ready for dispatch against each specific call-off order from DHL.

5 | DELIVERING INTO THE DHL HUB

The Chinese supplier, along with many other suppliers in China transports the finished product to be consolidated at the DHL hub, at Yantian, south China. This hub uses the Manhattan SCALE Warehouse Management System to manage goods in and out of the warehouse. DHL organise and manage bonded storage for all product's entry into Australia and final destinations.

6 | WAREHOUSING IN THE QANTAS GLOBAL DISTRIBUTION CENTER

DHL transports goods to the Global Distribution Center in Sydney, or directly to outstations across the world (Los Angeles, Heathrow, Brisbane, etc). Here, the WM500i WMS is used to manage all aspects of warehousing activity, and once the orders have been verified, stock is deconsolidated/reconsolidated and ready to be shipped on to outstations and catering centers for final assembly into meal trays. Once the stock has been delivered and matched, DHL closes the loop on purchase orders through financial reconciliation.

7 | DHL CUSTOMER PORTAL

Using the Oracle Distribution Requirements Planning system, DHL creates distribution orders for the outstations and catering centers. Stock is replenished into the centers in the most efficient way, by taking into account the demand plan and existing stock levels in the name of optimization. Qantas has visibility of shipments and milestones via DHL's customer portal and has the ability to refine orders up or down depending on actual consumption. This system straddles both the DHL hub in China and Qantas' Global Distribution Center and allows DHL to change delivery plans as order refinements are made.

8 | PICKING FOR FLIGHT QF107

At Qantas HQ, the order of trays and other items required is being confirmed. Qantas sends orders electronically to DHL's WM500i WMS. DHL Link is the gateway between customer systems and DHL, and it translates messages from customers into orders, which can be understood by WMS.

9 | ASSEMBLING READY TO DISPATCH

In the Consolidation Center in Sydney, run by DHL, the correct numbers of product for flight QF107 have been picked and are ready for assembly. Transport to the aircraft is scheduled and planned using DHL transport management systems. These planned shipments are based on volume, delivery schedules, and routes to ensure goods arrive at the airport catering center for final assembly and loading onto the aircraft.

CONSTANT QUALITY CHECK

Every step of the process is subject to Qantas' strict standards of quality and hygiene control.

Infographic: Niko Wilkesmann

THE SHAPE OF THE FUTURE?

3-D printing offers incredible new opportunities to companies and consumers, and will have a profound effect on our lives, say experts. Just maybe not in the way that most of us think. To find out what we can expect in the future, we talk to three people at the cutting edge of this exciting new technology.

Every now and then, a technological innovation comes along that has the potential to change our lives: the internet and mobile communications, for instance.

Currently, the next big thing – the one that everyone is talking about – is 3-D printing. In March of this year, *Harvard Business Review* ran an article headlined "3-D Printing Will Change the World" and noted that the technology is ushering in a new era. When you then hear that Dutch architect Janjaap Ruijssenaars plans to build a 3-D-printed house in 2014, Harvard's claim doesn't seem so outlandish.

NO TOOLING NEEDED

But that is next year. Right now, 3-D printing is being used to make everything from car parts to consumer electronics. In the biomedical sector, the technology is creating bespoke hearing aid shells and dental applications, among other devices. In the world of aerospace, Survey Copter, the remote control systems manufacturer, is successfully using technology developed by 3D printing company Stratasys to produce prototype and short-run component parts for drones.

Even NASA has recently used an advanced 3-D printing process called Selective Laser Melting to make an exhaust port cover for an engine, and is now looking at the viability of using 3-D printers in space to create tools for astronauts.

Back on planet earth, 3-D printing is generally the preserve of industry and mainly used in the manufacture of prototypes rather than end-use products. It is a technology that allows companies to quickly validate designs, save costs, and shorten development times.

"I think of 3-D printing as something you do in a home environment," says Shawn O'Grady, Digital Fabrication Specialist at the 3-D Lab at the University of Michigan in the U.S. "But whatever you call the technology – 3-D printing or rapid prototyping or additive manufacturing – it's very significant. I think it will change people's lives, but not in the way that the internet or mobile devices have. The big change will be in the manufacturing process with companies bringing this technology in-house and using it to make themselves more competitive by getting their products to market faster."

"I THINK OF 3-D PRINTING AS SOMETHING YOU DO IN A HOME ENVIRONMENT. BUT WHATEVER YOU CALL THE TECHNOLOGY IT'S VERY SIGNIFICANT."

Shawn O'Grady, Digital Fabrication Specialist at the 3-D Lab at the University of Michigan

Dr. Martin Baumers is Centre Research Coordinator at the EPSRC Centre for Innovative Manufacturing in Additive Manufacturing at the University of Nottingham in the U.K., a world-leading research group investigating industrial-grade 3-D printing processes to enable next-generation products demanded by key industries. He puts it simply: to be able to design something on your computer and then have it the next day as an object in front of you is, at the very least, exciting. "I think many people share that excitement," he says. "That's part of the appeal of 3-D. The machines have a little window so you can see your own idea coming into existence. That's pretty cool! When you think of all the things you could make, it's a bit sad that there are people out there who have made guns with the process and stolen the headlines."

The big plus with 3-D is that it requires no dedicated tooling: no molds, forging dies, or cutting implements are needed. Instead, you simply send a file to a piece of hardware and convert it from pure data into a real-world object. "The absence of tooling offers various benefits," says Baumers. "In high-value manufacturing it gives you freedom of geometry, because you can make really complicated, irregular shapes which may have uneven surfaces, intricate details, overhangs, undercuts, or a particular weight distribution. You can do so much more than you can with traditional processes, such as injection molding or machining."

The other benefit of 3-D is that it can efficiently make very few units of customized parts whereas, of course, in traditional manufacturing, large quantities are needed to drive down costs. Lastly, there is real value to be found in 3-D's single-process step. "You can generate a lot of functionality because everything can be concentrated and compacted," says Baumers. "And because industrial 3-D printing machinery itself is relatively small, at least compared to traditional manufacturing lines, you can relocate your manufacturing facility very easily and place it where there is demand, effectively eliminating your distribution. 3-D is a responsive way of making things. You can have manufacturing here and now."

Of course, there are significant drawbacks. The range of materials available to use is limited and the surface quality and mechanical properties of 3-D parts can be questionable. But Baumers believes the main obstacle to widespread use is cost, particularly in everyday applications where lots of parts are required.

So is 3-D really revolutionary? From a scientific point of view, Baumers believes it is, although inadequate international research investment means there is still a lot of study to be done. "But once productivity increases when the machines work faster, 3-D will make a huge impact," he says. "It's a question of when not if. But will it be the kind of innovation that current hype suggests? Possibly not."

And that hype is considerable. The way the media have been reporting it, supply chains will soon be a thing of the past. After all, 3-D printers costing merely hundreds of dollars are now available for the home. So soon we will simply buy downloadable files from suppliers and print goods ourselves, from mattresses to microwave ovens.

NEW SUPPLY CHAINS

If this sounds like science fiction, says Nick Allen, that's because it is. Allen has his own London-based 3-D printing company – 3DPrintUK – and has worked on projects for the BBC, Bugatti, Adidas, and the London 2012 Olympics, among others. He says that people expect the world from 3-D printing, and wants us all to step back and take a breath. While the technology will open up lots of possibilities – and has greatly inspired people to realize new inventions – he thinks it is over-hyped.

"I think that's because it's called 3-D printing," he says. "If it was called 3-D manufacturing no-one would be as interested. I began my company in the honeymoon stage of 3-D when I thought it was going to change the world. Now I've got through that period, I can compare it, rationally, as a manufacturing technique, and it's slower and more expensive.

Photo: Jake Evill, PR, EPSRC Centre for Innovative Manufacturing in Additive Manufacturing (2), University of Michigan

SHAPES OF THE FUTURE: The top image shows a laser-sintered component with organic part geometry. The image in the center shows demonstration parts with embedded functionality generated with multi-material additive manufacturing. The bottom image shows the spacer used to help a baby in Ohio to breathe.

Learn more about the potential of 3-D printing at:

www.3dp-research.com

"It does have massive, massive potential in lots of areas. But in mass manufacture and the consumer market, I think it's limited. If you were to mass manufacture plates using 3-D techniques, each one would cost about $150 at present. Plus, as a mass manufacturer, you want to make one every second – not one every day."

Allen also says that, despite their availability, it's unlikely that everyone will have a 3-D printer in the near or even distant future. Currently, domestic 3-D printers only print in plastic, so their output is limited; mixing materials is not possible at present; and machines that print in metal use a powdered material in a contained chamber, heated by lasers. "Powdered material in a contained chamber is, effectively, dynamite," says Allen. "So it's unlikely that we'll see them in the home."Still, you can see why companies are eyeing up 3-D as the magic bullet to solve their supply chain challenges. Resources could be conserved and there would be no need for packaging, warehousing, or transportation of goods.

"You'd think 3-D would help with supply chain issues," says Allen. "But the quality of 3-D parts isn't as good as those made by traditional manufacturing processes. It would be like a company that delivers exquisite meals to people saying, 'Hang on, let's just give them ready meals instead, but charge them the same.' Customers would soon lose interest."

Naturally, it's doubtful that the logistics landscape as we know it will change overnight – or that supply chains will suddenly cease to exist. Even if there was significant uptake in 3-D and printers might be located near points of demand to save on distribution, there would still be a need to transport, store, and deliver the raw materials for the printing process, not to mention transportation of the machines themselves.

Maybe the true excitement of 3-D printing lies in the medical sector, where patients in the here and now are benefiting from devices that have been custom-made for them. Shawn O'Grady points to 3-D-printed bespoke prosthetics made for children, and also to the University of Michigan's Otolaryngology Associate Professor Glenn Green, M.D., and Biomedical

Engineering Professor Scott Hollister, Ph.D., who 3-D-fabricated a spacer for a baby in Ohio suffering from a collapsed bronchial tube. "The spacer kept the airways open so that the child could breathe and, what's more amazing, in a few years, when the device has done its job, the body will dissolve it and there will be nothing left," says O'Grady. "So 3-D printing is a life-saving technology – one that will have a huge impact on all of us."

It's early days, but – revolution or not – one thing is certain about 3-D printing: we are going to be hearing much more about it in the years to come. — ***Tony Greenway***

VIEWPOINTS

DELIVERED. SCALES NEW HEIGHTS WITH…

HH Sheikh Ahmed bin Saeed Al Maktoum

Photos: PR

Sheikh Ahmed bin Saeed Al Maktoum oversees Dubai's soaring aviation industry and has helped establish the emirate as an award-winning logistics hub. Recently, he was named the second most powerful Arab in the world.

By now, Sheikh Ahmed bin Saeed Al Maktoum – who has been tirelessly flying the flag for Dubai over the past 25 years – must be well-used to receiving awards. Over the years he's won armfuls of them, including the Legion of Honor, the highest French civilian award, and Ernst & Young's 2011 Entrepreneur of the Year Award for the UAE.

Of course, this is what happens when you've been credited with helping to establish an entire emirate as an essential business and logistics hub, while spearheading the successful expansion of its aviation and tourism industries. Dubai's continued development has been a powerful motivating force for Sheikh Ahmed who, in March, was named the second most powerful Arab in the world by *Gulf Business Magazine*. Looking at his long and distinguished CV, it's not hard to understand why.

The son of a former ruler of Dubai and the uncle of the current ruler, he is a graduate of the University of Denver in the U.S. His career in aviation began in 1985 when he was appointed President of the Dubai Civil Aviation Authority (DCAA). In the same year, Emirates, the national carrier, was launched with Sheikh Ahmed as its chairman – and it is currently one of the world's fastest growing airlines. Now, along with his role as Chairman of Dubai Airports, he holds a number of government positions, is instrumental in leading the emirate's finance and energy sectors, and is patron to many charitable organizations. He has more to squeeze into his day than most but, he says, he's lucky. He is "inspired" by the positions he holds and the work he does.

Meanwhile, Dubai's growth continues – and the accolades keep coming. In May, he was presented with an honorary doctorate degree from City University London in recognition of "the remarkable contribution (he) has made to the development of both the region and the global economy." Sheikh Ahmed, it seems, is only just getting started…

If you had to describe Dubai to someone who has never been – what would you say?
Dubai is a vibrant, multicultural city of the future. It is a true friend to business, a globally recognized tourist destination, a superb location for conferences, and an increasingly popular venue for events and cultural activities. Many spectacular projects such as the Palm Jumeirah, Burj Khalifa, the Dubai Metro, the new Terminal 3 at Dubai International Airport, and the passenger and logistics facilities at Dubai World Central affirm that Dubai is a city with the vision and the drive to further establish itself as a leading international hub.

Dubai was named Logistics Hub of the Year at the SCATA Awards in April. What are the facilities and infrastructure that set Dubai apart as a logistics hub?
Dubai has rapidly established a name for itself as a top logistics hub. The opening this year of Dubai International's Concourse A, the world's first purpose-built Airbus A380 concourse, is the latest in a long line of infrastructural achievements that serve to further boost Dubai's connectivity. The Jebel Ali Port, located in Jebel Ali Free Zone, one of the world's largest and fastest growing free zones, is Dubai Port (DP) World's flagship port and is among the world's largest man-made harbors. Developed, in 1979, as a complement to the well-established Port Rashid, it is the largest container port between Asia and Europe and geographically positioned as the center where east meets west, and north meets south. Dubai World Central, the world's first purpose-built aerotropolis is also among our recent developments set to strengthen Dubai's role as a key logistics hub.

What changes do you see the development of Dubai World Central bringing?
Dubai World Central includes six clustered zones: Dubai Logistics City (DLC), Commercial City, Residential City, Aviation City, and Golf City, with what will one day be the world's largest airport – Al Maktoum International – at its heart. The 140-square-kilometer km development will not only house the world's largest airport, but will also be home to the region's first integrated, multi-modal transportation platform connecting air, sea, and land. It will maintain Dubai's position as a world hub in the Middle East for trade and commerce – and tourism.

In particular, what impact will Al Maktoum International Airport have on Dubai's logistics hub and aviation goals?
The impact of Al Maktoum International is having local, regional, and global impact. While cargo flights have been operating from the facility since 2010, a major milestone will be the start of scheduled passenger services in October this year. First in are the low cost European carrier Wizz Air and Saudi's Nas Air, marking the beginning of an exciting new chapter in the country's history. DWC is part of the Dubai government's long-term vision to create a significant enough aviation hub that will serve the needs of the emirate

48 KM²

The area covered by Jebel Ali Free Zone (JAFZA), located 35 kilometers south of Dubai. Established in 1985, JAFZA is home to over 6,400 companies and its utilities include standard warehouses, build-to-suit warehouses (customized as per the customer's specifications), light industrial units, offices, and land on long-term lease. Over the last four years, JAFZA has accounted for more than 50% of Dubai's total exports, 25% of all container throughputs through Jebel Ali Port, and 12% of all air freight at Dubai International Airport. As such, it has become a leading driver of the UAE economy.

200 KM²

The area covered by the Dubai Logistics Corridor linking sea, land, and air between Jebel Ali Port, Jebel Ali Free Zone (JAFZA), and Dubai World Central (DWC). The corridor improves the flow of sea-to-air cargo by eliminating the processes of exit and entry from one zone to another, while aligning various organizations, people, processes, services, standards, and systems to create the region's largest logistics hub.

for 50 years ahead. A 2011 report by Oxford Economics found the aviation sector directly and indirectly supports over 250,000 jobs and contributes over $22 billion to Dubai's GDP. This represents around 19% of total employment in Dubai, and 28% of Dubai's GDP. DWC will catapult these figures once fully operational. For the first time, the Dubai Air Show will be held at DWC this November – interestingly around the period when Dubai will find out if it has been successful in its bid to host Expo 2020.

How do you view the achievements of Dubai Logistics City since its opening?

Dubai Logistics City (DLC), part of Dubai World Central, is the world's first multi-modal integrated logistics platform. DLC incorporates more than 25 square kilometers of free zone and serves every transport mode, logistics need, and value-adding operation in the supply chain, including manufacturing and assembly.

Since 2006, the zone has gone from strength to strength with a host of companies setting up a presence. With a capacity to turn over 12 million tons of air cargo annually, DLC is strategically located alongside the world's biggest airport, the new Al Maktoum International Airport, and adjacent to one of the world's largest container handlers, Jebel Ali Port and Free Zone.

With the recent large gas and oil discoveries and the on-going exploration in East Africa, do you see Dubai acting as a material hub for the East Africa region? If so, what are the factors that will make this happen?

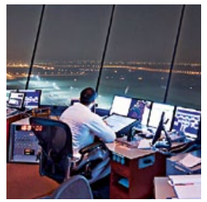
Dubai is highly responsive to changes in global trends and, as a true commercial center and trading hub, the authorities will seek to develop the areas that make sense for the city and the country, while keeping Dubai accessible and business friendly.

The recent global economic crisis also affected Dubai – do you believe the emirate is now back on top?

The indications are that the emirate is firmly restoring its financial and economic stability – and with that there is a renewed confidence throughout the city. You have to remember that Dubai was not alone in its problems and many places have suffered to a far greater extent and continue to do so. Dubai has a level of prominence which makes any challenges more visible. But this is part of being successful and a rising player on the international stage.

What are the specific challenges you see facing Dubai in the coming years?

Like any rapidly growing city, Dubai faces a number of challenges in the field of infrastructure, resources, and the environment. However, the foundations have been laid for a city of the future. That said, we must not be complacent. Dubai has to remain dynamic, pioneering, visionary, open to new opportunities and new markets and continue to build on the progress made so far. The world is moving too quickly to just stand still. We are extremely optimistic about the future.



READY FOR TAKE-OFF: Dubai World Central will catapult the forward-looking emirate's already vital aviation sector 50 years into the future.

Urban mobility is also a big topic in Dubai, especially with population increase in recent years. Do you see Dubai Metro as a success?

The Dubai Metro has been a tremendous success – not just with the speed of the construction, but the way millions have embraced the system since its opening. Around 350,000 people use the 75-kilometer system each day. Four new lines are currently under construction, while the existing lines already in service will be increased.

What other solutions are being considered to tackle the urban mobility issue?

Dubai's public transport system is gradually developing and now more than a million people use the Roads and Transport Authority (RTA) forms of transport daily. Meanwhile, each week, new highways, intersections, and underpasses are being rolled out to help accommodate the one-million-plus Dubai registered vehicles.

Looking further ahead, the RTA is planning to massively extend the Dubai Metro and has a three-phased plan developed to meet the city's needs through 2030 with the eventual development of 421 kilometers of track and 197 stations.

A link connecting Dubai to Abu Dhabi by rail, as well as the introduction of a tram and canal system, are also planned. Meanwhile the RTA supervises over 10,000 taxis and a network of water taxis along the coast and into Dubai Creek.

Do you still find time to take time out and relax, and how?

I am in the fortunate situation of being inspired by the positions I hold. In my down time, just like everyone, I enjoy spending time with my family and friends.

As Chairman of Emirates you have traveled the world. Is there one place that is more special to you than others? Where is it – and why is it so personally appealing?

Emirates flies to 134 destinations, the latest being Tokyo Haneda, which began June 3. I obviously travel a lot, both as Chairman and Chief Executive of the Emirates group, as well as while wearing my other hats, and I enjoy seeing and learning about the world. But I suppose, like many people would say, you can't beat home and for me, that's Dubai and the United Arab Emirates. — ***Tony Greenway***

140 KM²

The area covered by Dubai World Central (DWC) is almost twice the size of Hong Kong Island. Located 40 kilometers south of Dubai city center, DWC is home to Dubai Logistics City (DLC) and Al Maktoum International Airport. The airport launched its cargo operations in June 2013 and now has 36 freight operators signed up and operating. Upon completion in the mid-2020s, it will have a cargo capacity of 12 million tons per annum. DLC, meanwhile, has direct access to the UAE's main trans-emirates highways, the future Etihad Rail network, Al Maktoum International Airport, and Jebel Ali Port.

Take a closer look at Al Maktoum International Airport:

www.dwc.ae

REVIVING THE SILK ROUTE

Legendary trading routes are reawakening as multimodal rail services follow the paths of the ancient Silk Route.

The path between Europe and Asia is one well-trod by traders and merchants. Even before the beginning of the Gregorian calendar, silk and spices made their way out of southern Asia and into the Mediterranean Basin as hard-worn travelers traversed the Silk Route. The series of interlinking trails spread for 6,437 kilometers through diverse terrain, wrapping around the Himalayas and crossing vast desert plateaus as they opened up isolated communities to trade. Tales of faraway places inspired many of the world's great explorers, including Venetian merchant Marco Polo, who in the late thirteenth century made his way both overland and via sea from Italy to Mongolia.

Though the geopolitical landscape has changed somewhat in the past few hundred years, the route between China and Europe has been gaining in vitality as trade between the two continents grows exponentially. Taking a cue from Marco Polo's overland travels, over a decade of work has gone into reopening the cross-continental trade lane to rail freight.

MARCO POLO

Born in Venice ca. 1254, Marco Polo was a merchant traveler whose pioneering 24-year, 24,000-kilometer journey through Asia, and the account of it he subsequently wrote, inspired Christopher Columbus and other explorers.

Photo: PR, Hulton Archive

The task has not been simple, as rail gauges vary between countries, but after nearly a decade of planning, the old trade route has been revived in the shape of two new cross-continental rail services. DHL Global Forwarding and Freight's latest service – part of the company's intermodal offering – runs every week from the economic powerhouse of Chengdu in southwestern China all the way to Małaszewicze in Poland, which serves as the freight gateway to Europe. Faster than in Polo's day, the western corridor's route can cut up to 21 days off a shipment that may have otherwise traveled first to port, then via sea. Chengdu is landlocked, and the rail line dramatically eases the transportation of electronics, machinery, pharmaceuticals, and chemicals out of this Chinese hub, where exports exceeded $30 billion in 2012.

Shanghai has also been newly connected to Europe via a second rail line tracing the northern corridor of China. A daily service run by DHL Global Forwarding and Freight between the Chinese port city and Małaszewicze is giving Shanghai manufacturers a more efficient means of bringing their goods to market, with the added bonus of saving up to 14 days of shipping time, as well as reduced costs and CO_2 emissions. — ***Courtney Tenz***

THE TEMPLE OF SUPPLY CHAIN RESILIENCE

AN ESSAY BY RICHARD WILDING

Richard Wilding OBE is Professor of Supply Chain Strategy at Cranfield School of Management, U.K. He was appointed Officer of the Most Excellent Order of the British Empire for services to business by Queen Elizabeth II, and specializes in supply chain strategy, resilience, and techniques for aligning supply chains to maximize customer value and reduce cost.

It is critical for organizations to minimize the effects of supply chain risk. Organizations often have little understanding as to how decisions made at a strategic, tactical, or operational level impact on the risk profile of supply chains. For example, the greater adoption of lean practices changes the risk profile of supply chains. The focus on waste elimination and the application of just-in-time practices may at times result in increased responsiveness in normal market conditions and reduce risk but when a major disruption to the supply chains such as an earthquake occurs, systems can rapidly break down, creating significant impact on an organization's ability to operate effectively. Research by Singhal and Hendricks in 2005 showed that a business could expect a reduction in shareholder value of up to 25% if supply chain disruptions were not managed effectively.

The Temple of Supply Chain Resilience is a framework that organizations can utilize to improve supply chain resilience. The foundation of the temple is built on effective supply chain strategy, which can be summarized as the operational execution of the business mission. Managers need a clear understanding of the business mission, the corporate strategy, and the competitive strategy within the markets the business operates. Supply chain managers must liaise and discuss with the marketing and sales functions of the business, enabling segmentation of customers and products so that an individual supply chain can be developed to create maximum value at the lowest possible cost for each of these groups. For a supply chain strategy to really be effective, four areas are designed: supply chain processes, supply chain infrastructure, supply chain information systems, and the supply chain organization.

Be careful not to design "risk" into your products! The floor of the temple requires product design teams to be involved. Reflect on what materials are used and consider designing the product so alternative materials or components could be utilized.

INCREASING RESILIENCE

Designing the product to enable postponement of the final customization is also critical to supply chain resilience. By allowing the final configuration of the product as late in the supply chain as possible, it means vanilla products can be sourced globally with the final configuration taking place just before shipping to the customer in the final market place.

By applying such principles and asking questions during the design stage, often simple modifications in the product design can greatly increase the resilience of the supply chain for that product.

Illustration: Bernd Schifferdecker; infographics: Professor Richard Wilding

To create a truly resilient supply chain structure relationships are critical. Organizations therefore need to dedicate resource to the management of relationships, as often firms overlook the investment required to manage relationships both internally and externally with the extended supply chain. When analyzing organizations which have survived major disruptions to their supply chain, a major element contributing to their resilience is the nature of relationships with external organizations and how relationships are managed internally.

Supply chain risk management needs to be integrated in the design of the supply chain. Certain design principles need to be applied, including the choosing of strategies that keep alternative options for sourcing available and application of efficiency vs. redundancy trade-off, i.e. should I carry more suppliers' inventory as a buffer to disruption? The supply base strategy which defines the way in which a company sources is another key component: single sourcing or multiple sourcing and the criteria used to select sourcing partners. The final element is having an understanding of the network that connects the business to its suppliers and their suppliers and to its downstream customers. Mapping the supply chain is a starting point for obtaining that understanding.

For effective supply chain risk management, everyone needs to recognize how their decisions impact on the risk profile of the supply chain. Will a decision make the business more vulnerable to disruptions or will it make the business better able to cope with disruptions?

REDUCING RISK

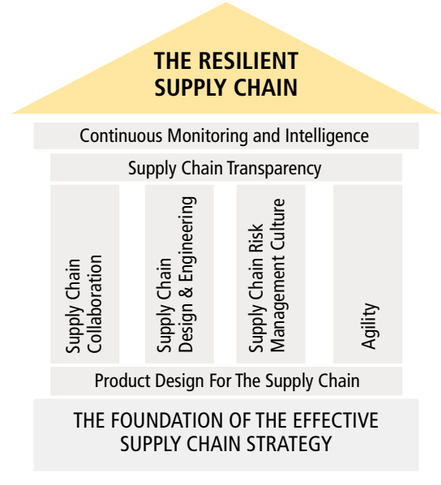
Senior management needs to start and manage any cultural change that is required. Supply chain continuity teams should also be created. These teams may have day-to-day responsibility for reviewing how company policies and practices could impact on the risk profile of the supply chain. When a major disruption occurs, the teams can also take action to minimize the impact.

To reduce the overall risk of a supply chain, the creation of supply chain agility is critical. The ability of the supply chain to be agile needs to be considered in the design of processes, infrastructure, information systems, and organization. Agile supply chains not only need to be network-based, but also market-sensitive, with highly integrated virtual and critical processes. They also need to synchronize both supply and demand if they are to respond in ever shorter timeframes to both volume and variety changes. The agile supply chain needs to be able to adjust output quickly to match market demand and switch rapidly from one variant to another.

Transparency of what is happening within the supply chain system is critical to risk mitigation. When everyone knows what is going to happen, confidence is built and trust develops between all the players in the supply chain. If there is no transparency, people will often place additional resources within the supply chain, e.g. holding inventory just in case it is needed. Transparency can be gained by simple mapping techniques and the application of technologies such as GPS to enable real time monitoring.

Building on supply chain transparency, gaining "intelligence" from both suppliers and customers on issues that may influence the risk profile of supply chains should not happen by accident. The organization needs effective processes to monitor both local and world events. If a natural disaster makes the news, ask the question "How will this impact on my supply chain?" Intelligence needs to be gathered and an effective process put in place so management can act quickly on this intelligence to mitigate supply chain risk. Collaboration with all stakeholders is critical to ensure intelligence on events that could possibly impact the supply chain's performance are shared and mitigated against.

Remember – competition is no longer between individual companies but between supply chains. It is in every organization's interest to help build the Temple of Supply Chain Resilience to ensure a sustained competitive advantage into the future.



Learn more about Richard Wilding's work at:

richardwilding.info

WHAT'S THE STORY, MR. MELO?

"TODAY I CAN TALK WITH ANYONE"

GoTeach: Young people learn about business life from professionals

Work: Jonathan has a job at DHL and goes to school in the evenings

Learn more about GoTeach and how Teach for All fellows help young people worldwide:

tinyurl.com/DHL-ChEdu

PRECIOUS CHANCE TO PREPARE

Jonathan Silva Novães Melo, 17, from an SOS Children's Village in São Paulo, is one step closer to realizing his dream after taking part in a GoTeach program which prepares disadvantaged young people for business life.

"For the last three years I've lived with my two younger brothers in Rio Bonito, an SOS Children's Village (where disadvantaged children are supported, protected, and cared for until they reach adulthood).

In 2011, I took part in the very first GoTeach program, which is run by DHL volunteers and designed to prepare young people for employment. It wasn't easy to get in – to be accepted applicants had to pass a really hard test and only a few of us did. Once we were in the program, though, GoTeach was great. While I was there I learned a lot about computer science, administration and logistics, how you work with Excel, and how you write a resume to apply for a job, which I wouldn't have had any idea about normally. They don't teach you those things in school.

I thought the best thing about GoTeach was the relationship between the trainers and the participants because we shared things with one another and learned from one another. I've never had contact with people from such a large company before, everyone was incredibly nice to us and taught us so much. Before I simply couldn't meet people. I was very shy – so overcoming that was an important step for me and today I can talk with anyone. At GoTeach I even had the chance to talk about astronomy, which is a big hobby of mine. In fact, I'd like to become an astronomer because I love physics and mechanics… and I love the stars! I know all the zodiac constellations and I love to read and learn about them – and next year, when I graduate from school, I want to study physics.

After the GoTeach program, I accepted a training position at DHL and, at the moment, I work in shipping. I go to school in the evenings after work and hope I can continue to work at DHL to finance my studies. It's good that I took part in GoTeach – what I learned has been really beneficial to me."

SENDING OUT AN SOS

SOS Children's Villages is an international, non-governmental development organization, active in 133 countries. For more than 60 years, SOS Children's Villages has worked with partners in each community either to help families care for their children or to provide family-based villages for orphaned and abandoned children, for whom the love of a carer is essential.

3 YEARS ago Deutsche Post DHL and SOS Children's Villages started their global **GoTeach** partnership as a pilot in Brazil, Madagascar, South Africa, and Vietnam.

14 COUNTRIES have so far **joined the global GoTeach partnership.** All partnership activities are designed locally to empower young people on their way to independence and employment.

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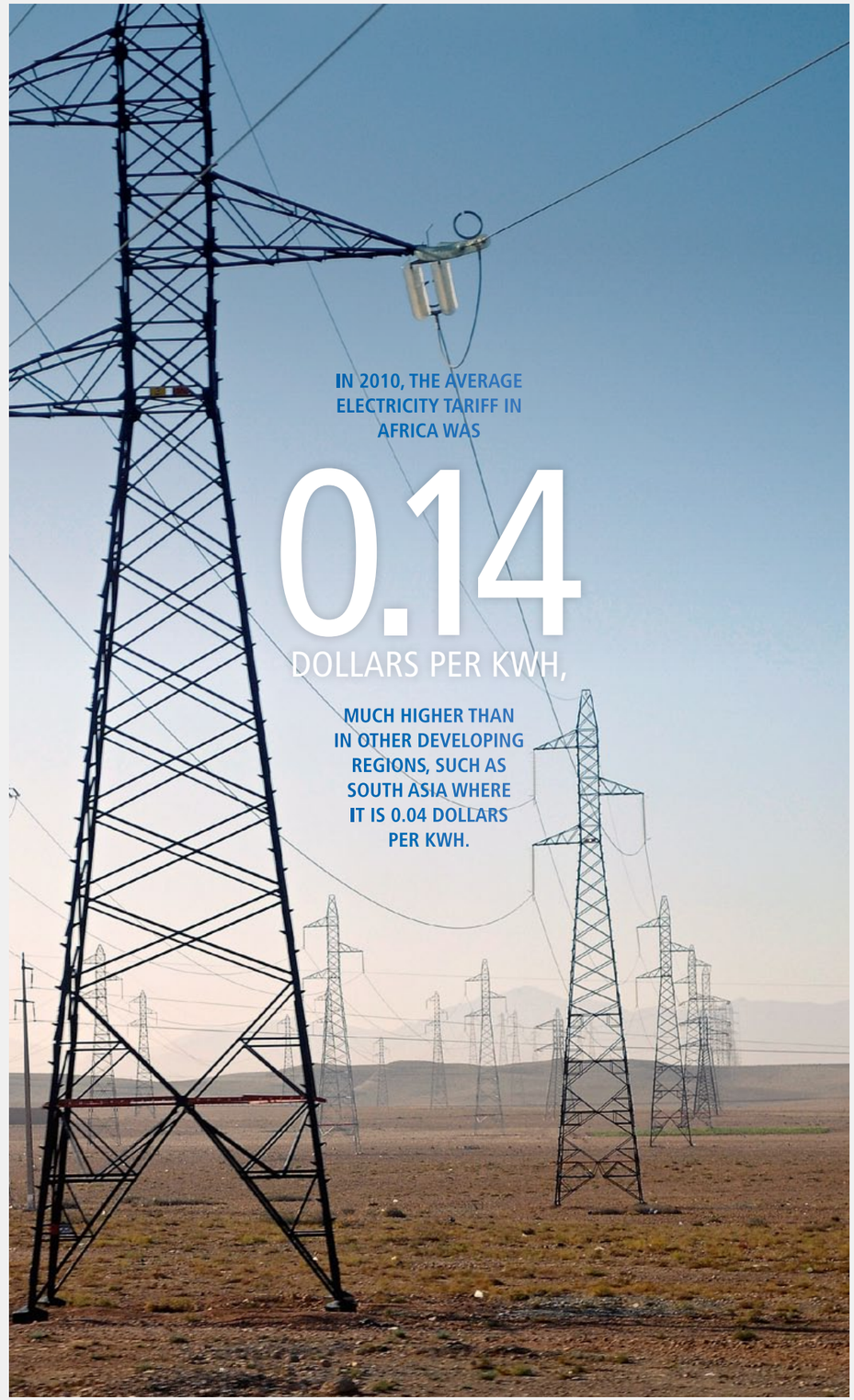

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