



BUSINESS LEADER OF THE MONTH: LEE YOUNG-SOOK

**INTERVIEW
NAM SANG-GUN**
MULTIS HYDRO

**SELF NATURE
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EXERCISE**

**INTERVIEW
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SEOUL INDUSTRIAL ELECTRIC

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**POWERING CHINA
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OF WIND**

**COLLABORATIONS
BETWEEN LUXURY
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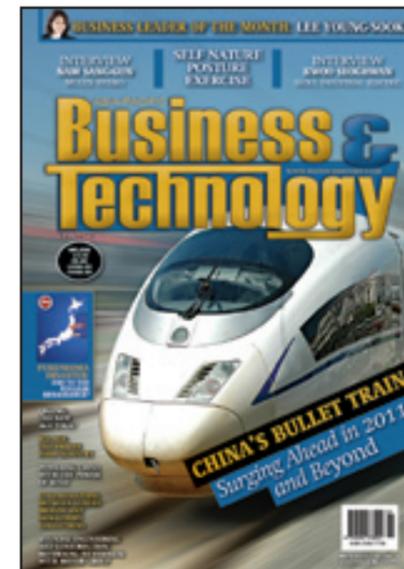


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China's Bullet Train Surging Ahead in 2011 and Beyond

BY LYNETTE WU

One of the most amazing things visitors to China can see and experience is its staggering high-speed rail system that is already in full operation, with a network that covers more than 8,000 kilometers.

Although not all of China's most well-known cities are linked by this bullet-train network, plans have already been set in motion to expand this already enormous system to an even bigger reach this year.

The idea for building the high-speed rail system had been in planning from the 1990s. Initiated by China's Ministry of Railway, the proposal to build this network was China's answer to address the overcrowding in its existing railway network at that time. Although there were some concerns raised, particularly on the cost, viability and profitability of such high-speed rail ways, taking their cue from what other countries experienced, the State Council proceeded with pursuing this project, and it was included in the 9th Five-Year Plan from 1996 to 2000.

What is also so amazing about China's high-speed rail system is that while countries at present continue to debate internally on the merits of building such high-speed networks, China had already made the go-ahead decision years ago, and has now turned the concept into reality. It was a simple engineering decision to build the network, in that the potential of boosting future economic growth and solving the country's transportation woes was foreseen—a great decision that will catapult the nation to even greater economic heights in 2011 and beyond.

Train Travel in China: A Beginner's Perspective

China's high-speed rail network is undoubtedly the longest in the world, stretching across a network spanning 8,358 kilometers, or 5,193 miles, as of January of 2011. Aside from that, this is the first and only commercial train network that utilizes conventional rail lines while reaching speeds of up to 350 km per hour, or roughly 217 miles per hour.

China's train network now links almost all the towns and cities in the country and is probably the busiest rail network in the world now with the volume of commuters traveling to and from various destinations across the land. From a beginner's perspective, riding one of China's high-speed trains is a totally new and exciting experience in itself—a safe and comfortable way to travel.

Once experienced, travelers will know and compare the differ-

ence between travelling in these trains and traveling cross-country via internal flights, which are not only physically uncomfortable but environmentally unfriendly as well. With China's trains, travelers can have their pick of traveling in any of the four usual classes normally offered - namely: soft sleeper, hard sleeper, soft seat and hard seat.

For beginners, it would be important to familiarize oneself with the different categories of trains available for travelers, which are usually designated with letters. A better train category means the trains are faster and with better accommodations but with higher fare charges. These categories include the following which are listed from the least to the best category:

- **K-Trains** – Trains with a “K” in the train number are those classified as “fast”
- **T-Trains** – Trains with a “T” in the train number are those classified as “extra-fast”
- **Z-Trains** – These trains have very modern air-conditioned coaches and are classified as “high-quality express sleeper trains”
- **C, D and G-Trains** – These are the high-quality high-speed daytime and sleeper trains with ultra-modern air-conditioned coaches capable of reaching speeds between 200–300 kilometers per hour

Unveiling the World's Fastest Bullet Train

China recently unveiled the world's fastest bullet train used in full operation, the Chinese-made CRH380 train manufactured by China's CSR Sifang Co Ltd., which has an average speed of 220 miles per hour and can reach maximum speeds of up to 262 miles per hour. This high speed train can cover a distance of over 126 miles (such as Shanghai's Hongqiao suburb and the city of Hangzhou) in almost half the time it would take using normal train traveling modes. Beijing is approximately 824 miles away from Shanghai and it would take standard trains more than 10 hours of travel time. With this high-speed bullet train, travel time can be cut by half down to only 5 hours.

Not all people, however, are in favor of the introduction of high-speed trains that will replace older and much slower rail lines. Some passengers are reluctant to pay higher fares for such train travel, particular on shorter routes. Yet passengers will surely see a big difference in such systems, as they compare not only the speeds and reduced travel time, but also the cleanliness, facilities and attentive service offered in these high-speed rail networks.

Now, China has made announcements that it will continue expansion of its ultra high-speed rail network with a goal of reaching 13,000 kilometers, or roughly 10,000 miles, and interconnect all major towns and cities in China. On top of that, plans are also underway which will further improve China's bullet trains and enable them to reach even higher speeds of over 500 kilometers per hour.

Major Economic Benefits from China's Bullet Train Network

This year, China is set to maximize its bullet train network and be able to interconnect across the full expanse of the country. This will be supported by an unprecedented infrastructure development that will have major economic and beneficial implications that will catapult into further rapid progression. Such benefits include:

- The reduction in time travel will cater to the needs of China's highly mobile population that will eventually spur further developments of Tier 2 and 3 regions in China. Individuals can now seek jobs within a larger prospect base and be employed in these jobs without the necessity of physically moving closer to the new job location.
- China's educated talent can benefit much from the reduced

What is also so amazing about China's high-speed rail system is that while countries at present continue to debate internally on the merits of building such high-speed networks, China had already made the go-ahead decision years ago, and has now turned the concept into reality.



travel-hours as they travel to and from work. Aside from that, instead of wasting precious time in unproductive driving, these people can spend productive hours on the train that are not only comfortable but are equipped with wireless internet access – features that are not available or are too expensive to have on flights.

- Slow passenger trains that the bullet trains will replace can be re-allocated and used as additional capacity for freight networks, which are currently experiencing severe bottlenecks. Shipping costs can now be reduced considerably, attracting new opportunities for further economic and business growth.
- Interconnecting people with Chinese markets can open up new opportunities as businesses in major cities can tap into the human resources of other regions, which can be as short as a 30-minute high-speed ride away. Workers can also be shifted easily to and from factories by using the additional freight capacities
- Chinese long holidays that usually last for more than a week (to give ample time for workers to travel) can now be reconfigured and shortened due to reduced travel times. This will increase overall productivity and reduce significant costs
- Chinese businesses with enormous amounts of goods and products can reach a much wider customer base to market their products, creating more business opportunities for

Continued on Page 17

Korea to Pay Tribute to Nobel Laureate Rabindranath Tagore on 150th Birthday Anniversary

BY PROFESSOR M.M. GOEL

The citizens of the global village of today are joining hands together to celebrate the life and contributions of world poet Nobel Laureate Rabindranath Tagore- an institution in himself on the occasion of his 150th birthday anniversary.



To pay homage to him, the Indian Government is organizing many functions with the support of Tagore lovers from all over the globe. National and international celebrations of the 150th birthday anniversary of Tagore will commence from May 7, 2011 (his birthday). Important events will be held in several countries in Europe, America and Asia. An international award with prize money of US\$250,000 is being instituted for promoting values of Universal Brotherhood in the memory of this widely loved and celebrated Nobel Laureate.

During his lifetime, Tagore visited many countries and proved to be a true ambassador of globalization with his creed for 'Vasudhaiva kutumbakam' (the whole world is one family) without discrimination. This worldview is most relevant in the present context of the WTO's globalization efforts, which is the internationalization of Indianization for one and all in India. He is one of the only two Indians (the other being Mahatma Gandhi) known over the whole modern world of today. Tagore had met with many world-renowned stalwarts of his time including Einstein, GB Shaw, Stalin and Mao, etc.

In South Korea celebrations are also being planned in a big way. A statue of Tagore will be unveiled in May 2011 at Daehangro, in downtown Seoul. A high profile delegation from India is also expected to visit Korea to join the celebrations.

Korea has a very close and historical connection with Tagore. He became the focus of Korean interest during the Korean struggle against Japanese colonial rule. His receipt of the Nobel prize provided great encouragement to Koreans, since he shared their cultural background as well as their experiences of living under colonial domination. The four-line English

poem Tagore wrote in honor of Korea in 1929 helped inspire Koreans to regain their national pride and fight for their independence. Though Tagore could not accept the invitation of the Donge Ilbo (East Asian Daily) to visit Korea, his small poem in honor of Korea fired the whole nation with pride and honor.

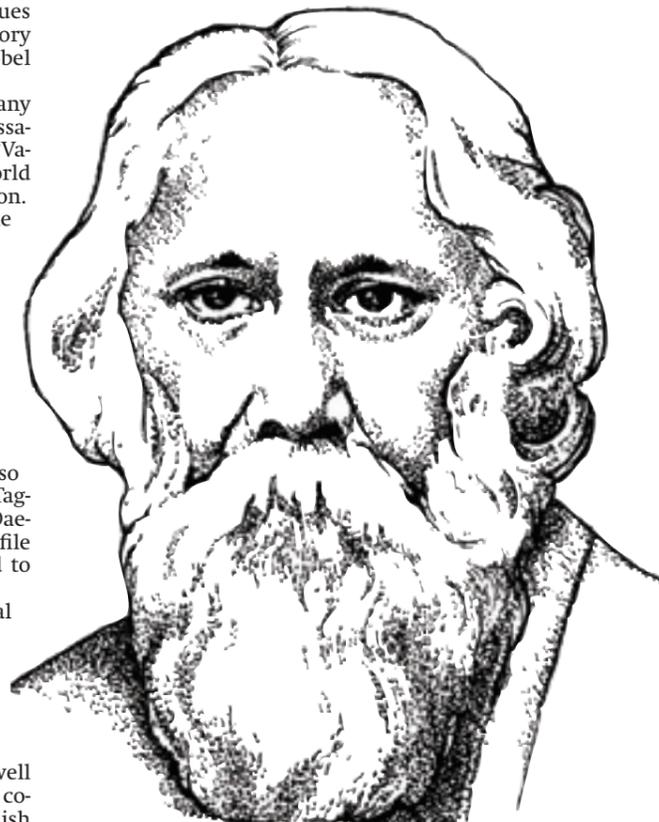
Back then when Korea was going through one of the darkest phases in its history, he wrote:

In the golden age of Asia, Korea was one of its lamp-bearers. And that lamp is waiting to be lighted once again. For the illumination in the East.

To this day, Koreans sing this song whenever there is talk about Korea's future and its place under the sun.

A grateful nation pays tributes to this great of Son the East. ^{A-P}

**The writer is first ICCR Chair Professor of Indian Economics in South Korea at Graduate School of International & Area Studies, Hankuk University of Foreign Studies, Seoul.*



During his lifetime, Tagore visited many countries and proved to be a true ambassador of globalization with his creed for 'Vasudhaiva kutumbakam' (the whole world is one family) without discrimination.

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Business Leader of the Month: Lee Young-sook

BY STAFF REPORTER

Mrs. Lee Young-sook, president and CEO of Youngwoo Textile, the leading company in the Korean textile market, is a woman pioneer in the Korean textile industry. With a very practical and pragmatic approach to industry leadership and a bright and vivacious personal style, she has come to the forefront both in her work and life. Despite her extremely busy schedule, the Asia-Pacific Business and Technology Report was able to sit down and speak with her this month in her office in downtown Seoul. We asked her what it takes for a female business leader to lead her company and to become the top textile company in Korea in such a short span of time, all in a traditional Korean society where the corporate world is still dominated by men.

Below are excerpts of this exclusive interview she had with Asia Pacific Business & Technology Report.

Market Leader Never Looks Back



Can you tell us about the history of Youngwoo and your own background in textile manufacturing?

I was born in Namwon, Jeolla-do and was raised in a family of 8 brothers and sisters in a strict and conservative environment. When I was young I developed an interest in clothes and textiles, and as I got older I started to become sensitive to the artistic beauty found in Hanbok and the Korean culture. As far as I'm concerned, I believe that true beauty lies within human beings, and it is only that people miss this fact due to humans easily succumbing to temptation. Not only foreigners but also Koreans themselves sometimes neglect the true value behind the beauty and aesthetics of han-bok. My motivation for this company was stimulated from the acknowledgement and study of the value behind han-bok. Clothes are things that cannot be separated from our everyday life, and such a fact naturally led me to take interest in han-bok and make clothes a part of my life, as well as making me a part of today's Youngwoo.

Why did you go into the textile business?

I wasn't originally dedicated to the textile industry, which has led to my current standing. I was enjoying what I had interest in and at some point I reached where I am today. Because I have a strong self-faith, I never considered competing or having a rivalry with someone else. People usually say that I have a different way of living or thinking. While traveling abroad I realized that other countries, like Korea, also don't have distinctive aestheticism in everyday life. However, when Koreans themselves realize the true value behind Korean culture, they become amazed. While other countries have an aestheticism of their own, I would like to spread the true aestheticism of Korea globally.

What position does Youngwoo occupy within the Korean textile industry?

There are many providers of textiles, and many great textile companies in Korea. But actually every company has many risks and unexpected problems. I do not fear becoming a pioneer in the market, because I am fond of designing and developing something new. For example, when I first started to import textiles such as metal and memory fabrics from Europe to Korea, I had to go through much trial and error. But I was up for such a challenge because I believe we are the top of the top.



Instead of a pull strategy I have strongly adhered to a push strategy of providing a finished product to the designer. In the same way that Apple played the leading role in the market with its iPad and iPhone, I also wanted to be innovative and challenging.

What sets your company apart from the other textile manufacturing companies in Korea? What are your main strengths?

It was hard at first to try something new based on old technology. It is easy when you know the answer to the question. To lower the risk, most companies take the safe strategy, but when you take the road not yet taken you will start to see something that others cannot see. Instead of a pull strategy I have strongly adhered to a push strategy of providing a finished product to the designer. In the same way that Apple played the leading role in the market with its iPad and iPhone, I also wanted to be innovative and challenging. Even though the risk may be high, through the process of understanding customer needs and pursuing customer relationship management, our company was able to become a customer-led and customer-centered company. It was because of such efforts that our company was given a Gratitude Award by SK. To return the favor to the customer, I always think about what we could provide to our loyal customers. Moreover, our company was able to further develop through a word of mouth strategy from designer to designer. For our export sectors, we have never made a single promotion strategy or exhibition; our marketing was done solely through word of mouth about our company and

products. I believe that when performing business, one must make a clear distinction between official and private matters. Thus, I do not engage in any lobbying and pursue transparency through strongly sticking to my business ethics.

The Textile industry has undergone many changes since you established your company two decades ago. How has your company adapted to these changes?

I continue to do my work the same way as I have done from the first day I joined the company. Time and changes have failed to dampen my spirit to work hard. Today Youngwoo has become the only company to distribute union clothes under the supervision of international organizations. I have firm confidence about our company's technology. Youngwoo places importance on business ethics and is also renowned for high credibility.

How has Youngwoo answered heightened competition from the textile industries of countries like China?

We do not consider our counterparts in the market as rivals or competitors. Instead of mimicking other products, we first try to prioritize the need of our customers through research and develop-

ment. Even though the Chinese market has potential, from our stance we believe that the Korean market has its own advantages compared to China, specifically in solving delicate and difficult technological problems. It is because of such reasons that there are times when buyers come back to the Korean market from China.

Does Youngwoo plan on expanding into any other Asian markets? Can you please let us know more on the strategy of expanding into these markets?

Yes, we have plans to expand to other Asian markets. Our products are distributed through chain stores which act as intermediaries to our end customers. By developing high-end textile products through the process of red-labeling, our company is planning to expand our business both domestically and internationally. Korea has all the colors for textiles, even unique ones that do not exist in other countries. In Germany it is normal to put a point on a basic color. But in Korea we use a variety of colors. We do not make colors simply to make colors, we make colors for wearing, and we do so by accumulating a color database of Korean culture and our everyday living, and turn that into a catalog. Currently at Youngwoo, we use our T&F color book to provide customers with a clear description



about products and brand image. We believe that through Youngwoo's color book code, people will some day easily be able to find which textile company handles which colors.

Who are your major foreign rivals?

I do not have a particular company to pinpoint as a rival. I would appreciate it if people would just watch me do the work that I like and do as best I can.

These days, environment concerns are getting worldwide attention from the corporate world. What is your take on this?

As we all know humans are made up of water and soil. When something touches your skin and does not irritate you then it is harmless to humans. Today we find sources of textiles from the environment. For instance, I have personally raised silkworms. If there is too much food for the silkworms, it becomes a problem. But silkworms producing and consuming the appropriate amount of food won't cause any problems. So harmony between man and nature is very important.

Can you please tell us more about the research and development activities done by your company?

Yes, our company does many research and development related activities. Currently, other than woman's wear, we are developing outdoor and sportswear textiles through our research institutions. Youngwoo has 15 people working in Daegu - there we have a special research team which has worked on textile development projects for 30 years.

How has your religious faith

Today we find sources of textiles from the environment. For instance, I have personally raised silkworms. If there is too much food for the silkworms, it becomes a problem. But silkworms producing and consuming the appropriate amount of food won't cause any problems. So harmony between man and nature is very important.

helped you in coping with the daily pressure of running a company like Youngwoo?

The company's name, Youngwoo, originated from our CEO. One day someone told our CEO that Youngwoo will one day become eternally prominent. Thus whatever Youngwoo pursues as a business it wants to become a role model for other companies. Strong business ethics and standards are guiding principles of our company.

Customers are the backbone of any business. How do you manage your relations with your customers?

I'm always thankful. It does not matter if the customer is big or small, I'm always thankful for the customers who visit us. And I want to do something favorable to show such gratitude.

What are your short-term and long-term plans for the company?

Under the mission of spreading the aestheticism of Korea, we are expanding our company to other countries including India via chain stores. Personally, I would like to share what Youngwoo has with those who pursue the same mission. Currently we are seeking potential importers of our products to the wider Asian region, including India.

Is there any other information you would like to share with our readers?

Please evaluate Youngwoo with a long-term perspective. If customers can provide us with information on their requirements, we would be happy to provide our customers with satisfying products and services. **A-P**

Collaborations Between Luxury Brands and Non-Luxury Collections

BY NICOLAS LEE

8:00 am, Nov 24, 2010, in front of the H&M store in Myongdong, Seoul.

There are several hundred people waiting in line for the opening of the new H&M store. Some of them arrived here at 2:00 AM, and some of them passed a whole night in front of the store. Some of them just arrived and are worried about being late even though the shop opens at 10:00 AM.

It was the launching day of the LANVIN X H&M collaboration collection, which, thanks to a worldwide advertising blitz, built to a boiling hot issue in only a few months. H&M launched this collection on the same day all around the world.

For those fashion victims who can't afford actual LANVIN collection items (this would be most of us), this release was marked as a 'must-attend' event on their calendars, and they counted the days to this opening.

At 10:00 AM, the door opened. Everyone rushed into the store and tried to grab one or more items on the hangers.

10:30 AM, men's collections all sold out, while 2/3rds of women's collections were sold out.

H&M has famously teamed up with a host of the world's most respected designers in the past, including Stella McCartney, Karl Lagerfeld and, most recently, by iconic French luxury label Lanvin.

However, given that the market segment served by H&M is comprised largely of younger buyers, the question arises as to whether the average H&M shopper had ever heard of Lanvin before H&M collaborated with them. While H&M benefited from the cachet of partnering with a revered name, the brands 'partner with' schemes are strategic for those revered names as well, since they have become aspiring to a new generation of consumers who wish to share some of the glamour with the luxury consumers of the principle label.

These days, there have been many co-branding activities between luxury brands and other industries with similar market segmentations. British designer Edwald Boateng redesigned the charge card of Coutts Bank, while Alexander McQueen created a new version of the American Express Centurion exclusive credit card as part of its fifth anniversary in 2004. Giorgio Armani designed a limited edition CLK for Mercedes-Benz in 2003 and Emilio Pucci linked up with champagne and fine wines brand Veuve Cliquot in the summer of 2004 to create a limited edition packaging design for Cliquot's La Grande Dame 1996 vintage



wine. Also in 2004, LVMH-owned Moët & Chandon teamed up with Swarovski to design an edition of a champagne bottle decorated with Swarovski crystals. Versace also recently collaborated with private charter airline TAG Aviation to redesign the interiors of its airplanes. Dolce & Gabbana designed a limited edition version of the Motorola V3i Gold in 2006. In addition, designers Christian Lacroix, Philippe Starck and Nicole Farhi collaborated with Danish pedal bin company Vipp between 2005 and 2006 to design a special collection of bins, which were auctioned for charity.

What is the strategic objective behind these collaborations? According to Uché Okonkwo the author of "Luxury Fashion Branding", co-branding is a new phenomenon that indicates the departure of luxury brands from the core single-brand strategy.

This co-branding strategy was previously termed 'controversial and risky' and was generally unacceptable until this decade. It was viewed as having a potentially negative impact on the 'luxury' and 'exclusive' image attributes of luxury brands. However, the changing luxury market environment and democratization of luxury are factors that co-branding addresses in addition to providing competitive leverage for the brands.

It could also generate more brand visibility through the mass brand's worldwide networking while helping to attract a more diverse range of consumers, especially with regard to young future clients. This kind of co-branding should be executed with a close inspection of market segments and brand images for alignment. Uché Okonkwo shows us very good strategic approaches

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ICE Age: The Frozen Food Industry

BY SHAMILA JANAKIRAMAN

Food is a basic necessity of life and it is the endeavour of most governments in the world to make it their top priority to feed every mouth in their land.

But with short supplies in some regions, this is not an easy task. Resources are often unevenly distributed, with some food products available in abundance in some countries and not so in others. Seasonal variations also affect the availability of certain fruits and vegetables.

In the absence of facilities to preserve, process and export food products, there is bound to be over-supply and food spoilage in some regions while people in other regions will not have access to certain food products. A thriving food industry across the world is now tackling this problem.

According to recent studies, the frozen food industry has been witnessing phenomenal growth during the present economic downturn, as consumers are looking for cheaper alternatives to fresh fruits, vegetables, and meats. Even the military depends on frozen food to a great extent, especially in camps located in remote areas.

Japan had conquered most of Southeast Asia during World War II, effectively cutting off America's supply of tin canned goods. Canned foods were required by the military, which suffered as a result. In came frozen food to replace canned food. Spinach was the first frozen vegetable to be sold.

Most vegetables and fruits are picked, packaged and frozen within 6 hours of being harvested, and hence contain more of certain vitamins than the fresh ones we buy from the market. These may have been harvested five or more days before they are actually cooked, since they typically spend more time in refrigerators at home as well.

Indian Frozen Foods

India is a large producer of food and is offering different opportunities and business propositions in food and food processing technologies, skills and equipment. The food-based industries encompass canning, dairy and food processing, specialty processing, packaging, frozen food/refrigeration and thermo-processing.

Products which come under the frozen food industry are fruits, vegetables, fisheries, milk products, meat, poultry and other packaged and convenience foods. Although it is a huge producer of food products, India still has immense untapped potential in the frozen food export industry. The demand for Indian recipes from the Indian Diaspora settled across the globe has served as an impetus to development of the frozen food industry in recent years. Vegetables like drum



sticks and okra and prepared food like cha-pattis and paratas are nowadays available in frozen form in neat packets all over the world.

Organizations like Ari Freeze Foods in India are engaged in food processing and exporting. Freeze dried fruits, vegetables, dairy products, mushrooms, fish etc., are packaged specially for export in high quality economical packaging to maintain quality standards, which makes business sense in a fast growing industry.

Agri Freeze Foods uses a single process that enables food products with small particulates to be packed optimally, resulting in long shelf-life and high quality.

Frozen Food Industry in Malaysia

The entry of more manufacturers in the frozen food industry in Malaysia and their aggressive advertisement campaigns aired in television and other media have spawned a highly competitive market in the country.

The increased urbanization has further boosted the food industry, with a growing consumer base interested in trying out newer food types from other parts of the world. In 2009 Malaysia witnessed a remarkable growth in frozen processed food sales, which grew by two percent along with growth in sales of chilled processed food and dried processed food.

Although most Malaysian companies are medium or small sized, there are also large ones such as Yeo Hiap Seng, Nestle and F&N. The country imports more frozen food than it exports, as the industry suffers from a shortage of raw materials, insufficient technology development and research.

The younger generation has much influence on the consumption of food products and they seem to be inclined towards pre-

prepared convenience meals or frozen food, which may be considered unhealthy by the older populace. Breakfast cereals are gradually replacing traditional cakes and bread in most households, indicating changing food habits. Although fresh food is preferred, the presence of microwave ovens and fridges has encouraged households with women working in offices to go for frozen pre-prepared food and frozen products.

The Malaysian market for processed foods has reached the mature phase, hindering high sales growth. However, it is possible to achieve further sales growth by launching new products to leverage the huge market potential and a varied population.

Frozen pastries, vegetables, meat, sausages and other derivatives form a significant part of the Malaysian processed food industry. In the 1990s many international retailers like Carrefour, Tesco, Dairy Farm International and Jusco entered the Malaysian market. Most of the hyper and super markets sell imported frozen food.

The ASEAN Australian New Zealand Free Trade Agreement implemented in January 2010 reduced import tariff restriction on goods, thereby reducing food tariffs. Several restrictions with respect to frozen food packaging and labeling regulations have been stipulated by the government, with strict guidelines according to religious sentiments to control the import industry.

Many companies like Lucky Frozen Sdn Bhd have grown remarkably, keeping in step with demand while striving to maintain freshness, quality, competitive pricing and excellent customer service. They supply imported chilled frozen beef, lamb, poultry, venison and seafood, besides frozen vegetables, chilled and frozen dairies that are guaranteed for freshness and quality.

Lucky Frozen also owns cold storage facilities, enabling it to control product quality,

costs and delivery logistics, thereby ensuring customer satisfaction. It operates from branches located in Kuala Lumpur, Penang and Langkawi. To further augment the frozen food business, Lucky launched a frozen confectionary line created to cater to Malaysian consumers' tastes and preferences.

Thailand in Deep Freeze Business

Frozen foods form a significant part of the Thai food export industry, which has long been well-known for its Thailand Frozen Fish. Fish and cooked fish products are favorite frozen foods exported from the country besides frozen meat and fruit products.

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these Chinese enterprises.

- The high-speed rail system is a convenient alternative to air travel that can link China physically with its other Asian neighbors, further increasing the flow of tourism between China and these countries, as well as opening up new channels for commerce that both countries can benefit from
- The development of high-speed bullet trains is a source of national pride and significance for the country and can be likened with the country's own space program.

What the Future Holds for China's Bullet Train Network

As China continues to invest heavily in infrastructure developments that other world economies are unwilling or practically unable to make, the future prospects for

Factoids

- Most vegetables and fruits are picked, packaged and frozen within 6 hours of being harvested, and hence contain more of certain vitamins than the fresh ones we buy from markets.

Thai frozen meals cooked in Thailand, quick-frozen and exported, are in great demand. Supermarkets, consumers and catering companies prefer ready-cooked Thai delicacies as they are ready to eat after defrosting and heating. In a fast-paced modern world with so many time restrictions, ready-to-eat meals are in and if they are delicious Thai food, the attraction is great indeed. The shelf-life of such products is increasing, and strict quality control ensures their safe consumption even for health-conscious people.

Such a lucrative market is being leveraged by Thailand-based companies which are launching ready-to-cook products like frozen shrimp and fish fillets, along with ready-to-eat foods like different menus of rice boxes.

CP Ready Meal is a large contender in the Thai market which distributes its frozen food products comprised of snacks and meals in its own convenience stores. It also supplies Chinese and Japanese foods. Japanese menus sold include teriyaki grilled salmon and rice, and Japanese yellow pork curry and rice, while the Chinese menu features a noodles section with wonton soup and seasoned noodles.

The "CP Ready Meal" products were launched based on periodic and continuous research on consumer behavior based on the company's strategy of perpetual product development.

S&P, another contender in the frozen food industry in Thailand, has leveraged its popularity in the restaurant business to enter the new frozen ready-to-eat food market. The "Easy Meal" brand is another brand from Suraphon Foods, a production and export company for frozen seafood.

China's bullet train network can go beyond the physical borders of the nation. Plans are now underway for China to interconnect with other countries in Asia and even all the way to Europe and London through this high-speed rail network.

To do this, China is currently negotiating with at least 17 nations to get them involved in this very ambitious project that is targeting realization by 2020. China will shoulder the costs for the infrastructure that will provide these smaller economies to open up their doors to the global economic community via a high-tech and high-speed travel network. In return, the nations will allow China to trade for the natural resources that it will need such as minerals, gas, oil, timber and other resources.

Three lines are initially planned. The first one will connect London's King's Cross Station directly to Beijing and would take travelers only 2 days of comfortable travel via high-speed train to traverse from station to station. The second line will be directed towards the ASEAN nations, connecting

Easy Meal from Suraphon Foods comes in three types, encompassing rice, snacks and frozen ready-to-eat meals for kids (which gets special focus). The main ingredient for all products is seafood, as the company is essentially a seafood exporter.

"Tuppy" Rice Box from P.F.P. is yet another frozen menu provider. The company produces and distributes processed food from frozen fish and meats in various product styles, chiefly for export. The company caters as well with greater emphasis to the domestic market, as demand is set to grow further.

Prantalay, another company, makes new innovative frozen ready-to-cook and ready-to-eat foods. In 2010 the company unveiled a project called "Good Health, Good Brain Nationwide with Prantalay 2010" to build their brand.

The new frozen ready-to-eat food market is developing fast and it is in the hands of manufacturers to study consumer preferences and satisfy their wants, while at the same time ensuring product quality by following strict guidelines. As food is an obviously important part of everyday life, it does not make sense to try to make quick profits by compromising on quality when the supplier can readily be wiped out of the market due to 'false promises.'

With evolving tastes and preferences owing to the intermingling of populations and increased travel to foreign lands, menus need to be updated continually to make a brand successful. Products and their launches need intense media coverage in the form of advertisements, point-of-sale promotions, small quantity packaging and sample tasting promotions in order to enter consumer kitchens.

The market being large and varied, it gives immense opportunities for manufacturers to cater to consumer palates with frozen food of both ready-to-cook and ready-to-eat types. Also these packs save time and money spent on restaurant visits. This business is sure to become popular in the Asia-Pacific region just as it did in the American and European markets. The frozen food industry is well worth investing in. **A-P**

China to countries such as Vietnam, Thailand, Malaysia and the Philippines. The third line proposed will provide a direct link from China crossing Siberia and all the way to Germany and Russia. The project is ambitious but feasible and will create favorable economic implications for the nations involved – in an ultra high-speed way. **A-P**

FURTHER READING:

- Smart Planet
www.smartplanet.com
- Seat61
www.seat61.com
- Associated Press
- www.ap.org

COMPANY MENTIONED IN THIS ARTICLE:

- CSR Sifang Co Ltd.
www.csrgc.com



Michael Rubin | Dreamstime.com

Hyundai Engineering & Construction:

Returning to Hyundai with Motor Group

BY DON KIRK

Hundai Engineering and Construction, the original company of the mighty Hyundai empire, is about to enter a new phase of its history as Korea's biggest builder, both at home and abroad.

It is now emerging from under the grip of the creditor banks that took it over after the 1997-1998 financial crisis, and returning to the Hyundai fold.

This time around, however, Hyundai Construction, as it's widely known, will not be part of the original "core" group that wanted to get it back. Rather, it's going to the Hyundai Motor Group, the biggest and probably most successful arm of the empire that was founded by the legendary Chung Ju-yung. Already Korea's second largest

chaebol, or conglomerate, after Samsung, Hyundai Motor in the midst of the 1997-1998 financial crisis acquired Kia Motor and in recent years has built a steel plant and formed the country's biggest logistics firm. In addition, the group has companies building railway cars and aircraft parts, among other products.

Korean bureaucrats had opposed the foray into steel as an expansionary move that concentrates too much power in one group and provides unwanted competition for the government-invested Pohang Iron and Steel, a showpiece of Korea's global industrial power. They did not raise serious objections, though, when the group in late March agreed to buy 35 percent of Hyundai Construction for US\$4.4 billion after the core Hyundai group was unable to show it had the resources to pay what had been its original winning bid.

The takeover of Hyundai Construction by Hyundai Motor is more than just a business deal. With the acquisition of Hyundai Construction, Hyundai Motor is realizing the dream of Chung Ju-yung, who had to suffer through the troubles of the company before his death in March 2001. Chung carefully divided up his empire among his sons and heirs but never planned on losing the construction unit to creditors. It was from Hyundai Construction, after all, that he drew many of his top executives. The company for many years had powers over financing and interlocking ownership of other Hyundai companies.

Hyundai Construction will not regain its historic role over the entire Hyundai empire, but its return to Hyundai corpo-

rate control marks a poignant moment in the history of an extended family whose often competing heirs have perpetuated the Hyundai name and legacy with varying degrees of success. Chung Mong-koo, oldest of six surviving brothers, controls Hyundai Motor with an iron hand. His next brother has Hyundai Department Store, a glittering up-scale national chain. Sixth brother Chung Mong-joon, a member of the National Assembly, controls Hyundai Heavy Industries, the world's largest shipbuilder, thanks to ownership of 11 percent of the shares, the biggest single block.

The family, however, has endured terrible tragedies, including the suicide in August 2003 of fifth brother Chung Mong-hun, who leapt from his office in the headquarters of the core group in the midst of a scandal of global proportions. Prosecutors had implicated him in the movement of US\$500 million that was transferred illegally from state banks through Hyundai Asan, the core group company responsible for business dealings with North Korea, to bring about the June 2000 summit between South Korea's President Kim Dae-jung and North Korea's leader Kim Jong-il. The transfer, revealed in an investigation three years after the summit, was a bribe that ultimately helped to finance North Korea's nuclear and missile programs.

Since Chung Mong-hun's death, his widow, Hyun Jung-eun, has had to struggle to hold the group together with a steely will that some said was engendered by her desire for vengeance against his greedy brother and an uncle, Chung Ju-yung's youngest brother, who sought to wrest her

companies away from her by purchasing large blocks of shares. Throughout, she's had to deal with the troubles besetting Hyundai Asan, which has invested and lost more than a US\$1.5 billion in building up the Mount Kumgang tourist zone in North Korea and another US\$1 billion or so on the Kaesong Economic Complex, in North Korea near the Panmunjom "truce village" 40 miles north of Seoul.

North Korea in recent months has taken over the Kumgang zone, above the North-South line on the eastern coast. Now North Korea is sponsoring tours to the zone, mostly for visitors from China, after South Korea cut off tours from its side of the North-South line in the aftermath of the killing in 2008 of a South Korean woman by a North Korean soldier who shot her when she strayed outside the zone to gaze upon the sunrise. Losses suffered by Hyundai Asan had much to do with the core group's inability to bring Construction back under its wing.

Hyun Jung-eun had actually beat out Hyundai Motor for recovery of Hyundai Construction until finally it was revealed that her core group simply did not have the funds to back up its bid. The core group's failure to recover Hyundai Construction was a bitter blow to the dreams of a woman who can take comfort in the success of Hyundai Securities and shipping companies but who had seen Hyundai Construction as the pillar of her chaebol, once the centerpiece of the entire Hyundai empire. For Hyundai Construction, meanwhile, ownership by Hyundai Motor is sure to presage a new era in the history of a company that emerged on the international stage with projects throughout the Middle East, including port facilities, hospitals, highways and apartment blocks in every country in the region. While Iran and Iraq were fighting each other for eight years in the 1980s, Hyundai Construction had enormous projects in both countries.

The deal also had the blessing of President Lee Myung-bak. Let it not be forgotten that Lee rose to president and then chairman of Hyundai Construction after having helped to establish it as a global force. Lee was hired by Hyundai Construction fresh out of Korea University in 1965 after having ranked at the top of the first competitive written examination for job applicants. After rising at meteoric speed to the post of chairman while still in his 30s, he fought to keep Construction's interest alive in Iraq through the Persian Gulf War of late 1990 and early 1991 that finally forced all Hyundai staffers to leave. More than a decade earlier, Hyundai workers had also had to flee Iran after the fall of the Shah in 1979.

By historical irony, Hyundai Motor was in the process of acquiring Hyundai Construction during another round of Middle Eastern violence that was definitely a distraction in the midst of much larger corporate concerns. Civil strife and rioting in Libya exposed foreign firms to violence and looting not only there but in other North African and Middle Eastern projects as the mayhem spread around a region caught between the conflicting forces of autocratic dictatorship, democratic yearnings and radical Islam.

South Korea, one of the biggest investors in construction projects in the Middle East

for more than 40 years and a major importer of the oil needed to fuel its economy, had more to fear than most. Nowhere was the danger more acute than in attacks on giant Korean projects, notably those of Hyundai Construction. As the rioting hit construction sites in Benghazi, the port city to the east of the Libyan capital of Tripoli, and then to Derna, a small port east of Benghazi, protesters from poverty-stricken regions blasted foreign companies as oppressors ripe for looting. Driven by a level of poverty that is lowest among tribal groupings in the east, looters stole or wrecked vehicles and set fire to buildings.

The evacuation forced a halt to construction of major power plants by Hyundai as well as Daewoo Engineering and Construction, the two biggest among 37 Korean companies involved in projects in Libya. All told, an analyst at the Federation of Korean Industries told me, upwards of 7,000 Korean companies do business in the Middle East, most of them medium, small and tiny

allels to mass protests that ended military rule and led to elections in South Korea in 1987. Yes, he acknowledged, "The fear is very high." All countries with stakes in the oil-rich Libyan economy issued urgent travel warnings. Thousands of foreign workers, from executives to laborers, fled as Libyan leader Moammar Gadhafi clung to power and loyalist forces battled for control. Park Hyun-do, senior researcher in the Middle East Institute of Myongji University in Seoul, feared surging emotions might also turn against Israel, always a target of Arab wrath. "I worry about another possible Arab-Israeli conflict," he told me.

Aside from the danger facing construction projects, Japan and South Korea as huge oil importing economies faced the effect on oil prices. Both countries rely almost totally on oil imports, 85 percent of it from the Middle East. "We are a major oil importer and a large investor," observed economic adviser Lee Jong-wha. "Developments in the Middle East do have a large

Hyundai Motor is realizing the dream of Chung Ju-yung, who had to suffer through the troubles of the company before his death in March 2001.

subcontractors for 100 or so major Korean firms working on 130 projects.

Against this background, Hyundai Construction people were confident that the evacuation of 100 Hyundai workers, from Korea and other countries, would bring only a temporary halt to a wide range of projects. With Hyundai Motor behind them, Construction expected a return to the good old days. Whoever finally wins the power struggle in Libya, said Yoon Young-keun, a Hyundai Construction manager in Seoul, "They need contractors."

The fear, however, was that rioting would escalate into attacks on foreign companies all over the region. Before special planes and ferries were dispatched to extricate workers from Tripoli and Benghazi, rioters had injured at least three South Korean workers and a number of others from elsewhere in Asia.

"Events in the Middle East have come out of the blue," said Lee Jong-hwa, senior economic adviser to President Lee. "The situation is a lot worse than expected." Dr. Lee cited oil prices rising above US\$100 dollars a barrel as well as rioting and looting of foreign companies as reasons for concern about an upheaval that some analysts compared to the fall of communist rule in the Soviet Union and eastern Europe more than 20 years ago. The rising price of oil was the top topic at an emergency meeting at the Blue House, the center of presidential power.

"There is risk," said Lee of the chances of violence against foreign interests erupting in other Arab countries caught up in a democracy movement that also bears par-

impact on the Korean economy. There could be expansion of tensions. If oil prices increase by 10 to 20 percent, that has a significant impact."

Korean officials did not have to go into emergency reserves, however, while the Korean economy was predicted to grow by five percent this year. Korea gets 40 percent of its oil from Saudi Arabia and much of the rest from Persian Gulf states while importing five percent from Libya. Still, "We wonder about what's going on after the democracy movement," said Song Dae-sung, president of the Sejong Institute, an influential Korean think tank. "Liberal democracy is so difficult. I worry so much about the consequences."

As for fears that Islamic radicals might rise to power, however, Hyundai Construction and its Korean rivals could be optimistic about the need for their services. The sense was that new regimes would follow in the same pattern in countries whose dictatorial leaders had welcomed Hyundai Construction in return for payoffs and favors, public and secret. Yoon Young-keun, at Hyundai Construction, expressed the corporate attitude toward dealing with new leaders. "We can go with them too," he said.

While revolutions convulse the region, Koreans, looking back on past successes, have reason to hope the good times were far from over for Hyundai Construction as well as its many Korean rivals. "The Middle East has been the golden land for Korea," said Park Hyun-do at the Middle East Institute of Myongji University, balancing confidence and concerns. "It's been the land of opportunity since the 1970s." **A-P**

Designomics: The Futuristic Business Tool

BY SHAMILA JANAKIRAMAN

Most products and services follow stipulated rules of design, whether making a box for biscuits or a container for body lotion.

In the former case, the shape and sturdiness of a box matters as it has to transport the contents without breakage while at the same time ensuring the freshness and crispiness of the biscuits. In the latter case, the shape and size of a pump design are needed along with aesthetic attractiveness to promote the product. If aesthetics is combined with economics, then we arrive at 'designomics'. Simply put, designomics combines design and economics, and the continuing development of this 'field' has the potential to contribute to substantial further global economic growth and prosperity.

Designomics has been familiar to administrators in Korea for a very long period of time. Experts believe that it was practiced by Koreans as far back as four centuries ago. The 'Korean Pottery Wars,' which happened in the late 16th century, centered around the economic value of the design and design technology of pottery created by Korean artisans. This was designomics in its oldest form, which offered a competitive advantage for the country even then. Foreign powers then waged war in order to capture and kidnap Korean potters away from their homeland.

Now designomics is being adopted to foster design-based economic growth. The growth of Korean major market players like Samsung and LG in the global consumer electronics market

is a clear indication of a designomics-based approach to business. Korean auto companies have also followed suit and have become major brands to reckon alongside global brands in the US, Europe, Latin America and Japan, while going head-to-head with new Chinese, Indian and Brazilian brands.

The new Creative Director of the city of Seoul has taken designomics a step further in incorporating this technique for economic revival. Oh Sae-hoon, the mayor of Seoul, announced a comprehensive budget plan of about US\$100 million in 2009 to improve the design capabilities of small to mid-size enterprises. Infrastructure design services, custom-made design information to reeducate mid-career designers working in companies, design consulting firms and other design projects to help the poor, the disabled, and the elderly all fall under the gambit of this remarkable project.

Strategic design is considered the new USP by major organizations in India, which are striving to stand apart in a crowded and highly competitive marketplace within and outside boundaries. In

India where business has suddenly expanded globally on all fronts, value creation through design has given companies a competitive advantage. Mahindra and Mahindra, for example, which specializes in farm tractors, saw a market need for smaller tractors to serve farmers with less land. Larger tractor models were both cost-prohibitive and too big to serve their purposes. The company designed and launched smaller tractors which were priced suitably to cater to this segment, thereby realizing substantial profits.

The emerging economy of China is also moving more towards a 'design thinking'-based economy from its manufacturing base. With millions of students

studying design in universities, managers are being created to incorporate design-thinking into Chinese characteristics. Tsinghua University in Beijing is leading the way in promoting innovation, design and management. In Hunan University of south central China, research-based design is being taught with a focus on human-centered design and design strategy. The Hong Kong

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Designomics has been familiar to administrators in Korea for a very long period of time. Experts believe that it was practiced by Koreans as far back as four centuries ago.

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for such co-brandings.

- There must be a strategic purpose behind the co-branding activity. In other words, brands shouldn't team up without a concrete and significant reason. When H&M collaborated with Karl Lagerfeld and Stella McCartney, it was to address the consumer's changing needs and expose them to luxury fashion in anticipation of "trading up."
- The co-branding should be a win-win situation for the brands involved. Again, the H&M venture had the advantages of endearing mass fashion consumers to luxury designs and embracing mass fashion brands as complementary brands of luxury brands rather than being viewed as competitors.
- The collaboration should be controlled through a limited edition or a one-off collection. Karl Lagerfeld's design for H&M was a thirty-piece one-off collection. This retains the luxury aura of Lagerfeld, which

extends to his own brand and the luxury brands he designs for. It also ensures that H&M is not misinterpreted by the consumer as a luxury brand, which is not the company's objective.

We see this in other industries, as well, with stereo systems in automobiles, branded carpets in new homes and condominiums, hotels with designer themes, etc. Most recently, I noted a "Starck-inspired" item in an airline catalog for, among other things, furniture. Further, there was '24 Hours: The Starck Mix,' a free app tied to Wallpaper's Philippe Starck-edited October 2009 issue. The application provides a live stream of a 24-hour soundtrack, selected, arranged, composed and mixed by Soundwalk — a new media company known for their cutting-edge audio tours.

"According to me, sound is more important than music, it is a sort of physiological need," Starck has said. "Soundwalk's creations are extremely rich and sophisticated. They have the beauty and elegance of life. I listen to these tapes that take me far away, to a place where I want to go, because one

should never forget that music is a territory."

So what exactly does the app do? The starting point of the 24-hour mix is determined by what time it is in your time zone when you launch it. You can scroll forward or backward in the mix by changing time zones. Shaking your iPhone will cause the app to randomly play another section.

This is all getting to be a bit much for me, as evidenced by the 'according to me' quote from Starck himself. This reminds us that luxury co-branding can be stretched to a limit, and then tear, as with Pierre Cardin, which has lent his name to just about everything, at the expense, say some, of much of his credibility. Cardin is known all over the world for stamping his name on everything from golf clubs and frying pans to binoculars and orthopedic mattresses. While most designers content themselves with fragrance, accessories and underwear, Cardin has amassed more than 800 licenses around the globe, and earns royalties on Pierre Cardin luggage, ceramics and cookware.

Starck seems to be well on his way, as well, "according to me." **A-P**



Japan Crisis Impacts Korean Supply Chain Severely

BY EUN YOUNG CHOUGH

As the far-reaching effects of the 9.0-magnitude earthquake in Japan have become more apparent, damages to Korean companies are also surfacing.

The earthquake and massive tsunami hit Japan's supply chains, which provide key parts for car manufacturing and electronics. As a result, Korea's automobile industry and high-tech industry are facing price increases in production and delays.

According to Moody's Analytics, a subsidiary of Moody's corporation, the global economy will not be negatively affected by the incident in Japan; the impact on global growth will be minimal since Japan compromises less than 0.5 percent of the global economy. However, for Asian countries such as South Korea and Thailand, which depend on importing manufacturing parts from Japan, it will be difficult to avoid severe, short-term damage from the

earthquake's aftermath.

On March 31, South Korea's Financial Supervisory Service announced that five small and medium-sized businesses hurt by Japan's supply chain damages received loans totaling 7.5 billion won from national banks. The Busan Chamber of Commerce & Industry also released figures that 11 percent of 80 business suffered actual damages after the earthquake. These businesses included electrical and electronics manufacturers, chemical businesses, steel producers, and carmakers. Most of the businesses were related to disruptions in obtaining supply parts. The figures are likely to grow after mid-April.

Last year, South Korea imported more than US\$1.5 billion worth of key parts used in car manufacturing from Japan, which contributed 32.3 percent of the total amount used in imports of car manufacturing parts. The shortfall of supply parts has hit Korea's car manufacturers, including Renault Samsung Motors and General Motors Korea Co. Renault Samsung, GM Korea, and SsangYong Motor Co. import engine parts and transmissions from Japan. GM Korea, which imports 4 percent of its auto parts from Japan, also announced that it will limit overtime at its manufacturing plants, but started its normal operation after the supply situation showed improvement.

After the earthquake, Renault Samsung Motors also announced on March 30 that it would cut production by 20 percent as a result of a shortfall of component supplies. The strategic alliance between Renault and Nissan also contributes to Renault Samsung's high dependency on compo-

nents from Japan. The damaged factories in Japan are showing progress in recovery; however, it is critical to handle the crisis of key part supply factories near the Fukushima No. 1 nuclear power plant.

Along with the automobile industry, electronics manufacturers face shortages of key parts as well. Bismaleimide triazine (BT), a resin critical for smart phones and smart pads, is manufactured by Mitsubishi Gas Chemical, which supplies approximately 80 percent of all BT worldwide. Whether Mitsubishi Gas Chemical's factory in Fukushima will operate again will be critical to the future manufacturing of smart phones and smart pads.

Graphic cards and main boards also are expecting price increases due to their use of Japanese-sourced key parts. According to several reports, once Japanese key parts are out of stock in April, price increases will be inevitable for goods using Japanese components. More increases are expected in May. Korean analysts say that, in addition to the shortage of key materials in Japan, increases in raw materials will also affect price increases in consumer electronics.

Reports by the Korea Institute for International Economic Policy (KIEP) have stressed that the earthquake will bring more damage to businesses in South Korea in terms of imports from Japan than exports. Since little weight is given to exporting goods to Japan, and as the yen will be strong for quite some period, exports to Japan will improve. However, companies relying on components supplied from Japan "will run into operation difficulties for the next few months." **A-P**



Japanese 7-Eleven's Battle Typifies Post-Tsunami Struggle

BY DON KIRK

For Seven & i Holdings Co., the first priority after the earthquake and tsunami of March 11 devastated much of the coastal region of northeastern Japan was to see what happened to several hundred of its 7-Eleven stores in hard-hit towns and villages and to look for survivors among staff members and customers.

In the first days after the tsunami, the company estimated that 40 stores were entirely or half-destroyed and that perhaps 16 owners of 7-Eleven franchises were dead or missing.

One week after the tsunami, 350 of 7-Eleven's 13,219 stores in Japan were still closed, including about 100 that had to be evacuated due to their proximity to the beleaguered Fukushima Dai-ichi nuclear power plant. In the rush among people from the region to stock up on bottled water, tissue and other items, however, total sales in that period actually rose by 20 percent. A subsidiary chain of grocery stores, York-Benimaru, may have suffered more, evacuating 19 stores located near the plant. All told, York-Benimaru had to close 68 of its 170 stores.

The troubles afflicting the 7-Eleven and York-Benimaru stores were shared by thousands of companies, including motor vehicles and electronics plants operating in areas affected by the earthquake and tsunami and then by fear of radiation. With only 80 percent of the normal power supply

available in greater Tokyo and the northern prefectures, manufacturers had to suspend or reduce operations and scale down supply networks while waiting for power to resume and repair facilities. Jun Saito, director-general of economic analysis for the cabinet, estimated recovery from the disaster would take at least three years. He said it was uncertain when the government could "relax constraints" on power supply and how much it would cost to repair damages estimated at more than US\$300 billion. The good news, he said, was that the reconstruction effort could help to make up for the losses.

The response of Seven & i Holdings typified that of companies large and small as they coped with the terrible reality of disaster. At the Seven & i headquarters in Tokyo, Miyaji Nobuyuki, a public relations director, told me that five or six of the ten centers that produce fast-food items for the region were inundated by the tsunami. In their place, centers in other prefectures were producing more items to make up the difference. Deliveries initially were impeded by lack of gasoline and closed roads, and the small trucks that carry the daily deliveries of spiced rice balls, sandwiches, boxed cold meals called "obento" and other items could not get into difficult areas, but soon roads opened and gasoline became more available. The heaviest damage was in Sendai City, where about 100 7-Eleven stores were damaged. Most of the workers and customers got out in time to beat the tsunami. "When the earthquake hit, they walked into high buildings," said Nobuyuki.

"In regard to items that are especially important to daily life, we are supplying more than usual," said a company statement. "However, demand is concentrated on stores in certain regions, and as a result there are

still locations where supply of these items is inadequate." The company also said it was cutting electricity consumption and "taking a variety of steps to save electricity as a member of local communities." The share price of Seven & i Holdings was down from ¥2,300 before the tsunami to ¥2,000 a share when I saw him ten days later.

Much was left to the individual franchise owners and managers. "The group's stores are closely linked to the daily lives of customers in each region," said another statement provided by Nobuyuki, "and the group is working to maintain operations and to rapidly reopen stores that have closed." However, said the statement, "to respond to electricity shortages as a member of the local community, each store is implementing a variety of measures to reduce electricity consumption." Seven & i Holdings was also sending emergency supplies to centers housing refugees forced to flee their homes.

Just as all appeared "under control" at the Fukushima Dai-ichi power plant, however, new shocks confounded scores of engineers and technicians attempting to cool down the reactors before meltdown could shoot radioactive ashes and gases into the atmosphere. Officials and ordinary citizens alike came to expect the unexpected. An uncomfortable feeling swept the country when the International Atomic Energy Agency reported radiation levels picked up in a town 20 kilometers from the plant. That's right on the edge of the danger zone within which authorities were telling people to leave or at least stay inside, wash carefully and wear protective clothing.

On top of that came unsettling word that traces of radiation had spread to the same waters that had inundated the region on March 11. Vapors from the plant and water running off the soil might affect sea life on which thousands made a living and millions dined in a society accustomed to eating raw seafood. Seawater samples reportedly showed levels of radiation 126.7 times higher than the legal limit. The ministry of Health, Labor and Welfare reported "radioactive contaminants," including high levels of cesium and a trace of cobalt-58 in sea water collected from a drain near the plant. The ministry ordered two prefectures to extend monitoring plans for examining seafood. Officials persisted in saying a person would have to dine out on seafood and veggies from around the plant for a year before suffering ill effects.

Nobody seemed totally confident after a sample of water from a treatment plant in Tokyo showed radiation sufficiently high to be unsafe for infants below the age of one. Rain clouds drifting over metropolitan Tokyo were blamed for carrying radioactive substances. Mothers, on hearing the news, scurried at once to supermarkets and convenience stores. "All the bottled water was gone immediately," said Azusa Imamura after a quick shopping trip in her crowded neighborhood. "Nobody is sure of anything." Least confident were mothers with infants as they wondered whether to feed them with bottled or breast milk. "We are confused," said one young woman with a baby. "We hear there's radiation in milk, but if you breast-feed a baby, maybe the water in your system will also get into the milk." The deepest fear was that of thyroid

cancer, to which children and infants are far more susceptible than adults.

As the anxiety level heightened, Chief Cabinet Secretary Yukio Edano said authorities had put out notices of increased radiation in vegetables as well as water in metropolitan Tokyo as merely a precaution. He assured the nation, on television, that Japan adhered to "strict safety standards" – more so than those of other nations. He had the support of Dr. Robert Peter Gale, formerly with the University of California in Los Angeles, now a visiting professor at Imperial College, London, with widespread experience in studying nuclear disasters. People in the Fukushima area "need guidance regarding risks," he said in a visit to Tokyo. "People are starting to be more comfortable in dealing with radiation." Radioactive iodine-131 has a "half life" of eight days, he said, and within 80 days all the radioactivity would disappear.

Concerns ratcheted up again, however, as black smoke suddenly burst from the troublesome number three unit at the Fukushima plant, forcing evacuation of workers attempting to bring the reactor to what is called a "cold shutdown" by pumping water onto the reactor and the cooling pond for spent fuel rods. "We did not see fire," said Hidehiko Nishiyama, deputy director-general of the nuclear safety agency. "The smoke is now being subdued. We are not sure of the cause." An hour later, workers were able to return after confirming the level of radioactivity. Incredibly, however, many hours after the smoke had dissipated, he still did not know what it was that was smoking or why.

The news got worse when two workers had to be hospitalized with skin burns suffered when water with radioactivity 10,000 times the normal level leaked into their boots as they were wading in the basement of the turbine building of the number three unit. Prime Minister Naoto Kan said the outcome of efforts to shut down the reactors at Fukushima was "very unpredictable" while the number of dead and missing from the earthquake and tsunami neared 30,000 and 250,000 people remained homeless. Many of those were consigned to ill-heated shelters, existing on handouts of rice and instant noodles.

An aura of mystery hung over the results of the massive operation to close the plant and seal the leaks. While "keeping the situation from turning worse," said Edano, whose role as cabinet secretary made him the chief government spokesman, "we still cannot be optimistic." No happy ending was in sight as engineers and technicians battled to run whatever was left of the original equipment or whatever they had to replace it. As if the earthquake and tsunami were not enough, they had to cope with far more damage created by explosions that ripped through the roof and walls of the plant. Firemen pumped thousands of tons of sea water onto the reactors and cooling systems to stop a meltdown from sending radioactive clouds far and wide.

The Tokyo Electric Power Company, under fire for having failed to make certain all back-up equipment was working well before March 11, was heavily criticized for failing to carry out inspections, to cooperate fully with the government – or even to provide adequate protective gear for everyone

entering the facility. Nishiyama at the nuclear safety agency noted "problems in the way work was conducted," and Edano urged TEPCO "to provide information to the government more promptly." Nonetheless, as sole operator of the plant, TEPCO remained at the forefront of the complex operation to revive, repair or replace equipment needed to shut down the reactors.

Of more immediate importance for average citizens was the safety of all they had to eat and drink. Prime Minister Kan stoked concerns by ordering the governor of Fukushima to apply "measures not to distribute and/or consume" a wide range of leafy vegetables. Food business operators in a neighboring prefecture were also ordered "not to distribute any fresh raw milk and parsley."

The fear was that experts would never figure out all that was wrong, much less come up with permanent solutions for avoiding disaster "next time." Just ask Masahige Sugiyama, who as a small boy was staying with family friends outside Hiroshima when his mother and father were irradiated in the atomic bombing of the city on August 6, 1945. "I never saw them again," he told me when I stopped off with a volunteer worker at the tent where he lives in a small city park populated by scores of aged, indigent people, the flotsam of one of the world's richest economies. "I never knew them."

Beneath an outward appearance of calm, lack of confidence in anyone's ability to deal with the nuclear crisis rose even as officials claimed limited success in cooling down the reactors with sea water and restoring power to the coolant facilities. "Why," asked a waitress in a coffee shop, "is the American government saying people within 60 kilometers of the plant should leave and our own government is saying only people within 30 kilometers should leave." Unaccustomed though Japanese are to accepting the American over the Japanese version in most matters, she said this time she believed the Americans were probably right. "The Japanese government cannot tell the truth. They are afraid if they do people will get panicked."

Azusa Imamura, accompanying me among the narrow streets and alleys of the historically poor district by the Sumida River, on the northern edge of the city, was even more skeptical about government assurances. Why, she wanted to know, were reports carried by the government's NHK network so different from what she was seeing on CNN and BBC. "NHK is for ordinary people with no news from foreign networks," she said. "BBC and CNN say the news is more serious. Our government is afraid many people will panic. Then it will be hard to calm them down. I don't like the way the government is acting. I'm afraid the contamination will get worse."

The greatest immediate concern was for the workers inside the power plant, risking immediate and long-term effects as they struggled to bring power to the systems needed to cool down the reactors. How impervious their white radiation-proof garb was is an open question after a number of them were reported injured. "The people working inside the plant must be very brave," said Imamura. "I'm very thankful for them but very worried."

Along the banks of the Sumida River, in

a vinyl-roofed hut that he had set up while eking out a living selling empty soft-drink and beer cans to recycling companies, Fumiyo Higuchi had another fear – that of a tsunami capable of washing away all his worldly possessions. On March 11, the day the tsunami flooded cities and villages 250 kilometers northeast of Tokyo, the Sumida River rose above its banks three times. Standing on a walkway well above the river, Higuchi watched as his makeshift quarters were flooded. "I could see the river bottom as the water drained out," he said. "Then suddenly the water came up. Now we're worried about radiation."

The fear level at the Fukushima plant increased after a grey cloud of smoke wafted from the damaged facilities into which fire trucks and helicopters had pumped thousands of tons of water to stop the number three reactor from completely melting down. Workers had to flee the site, the Tokyo Electric Power Company reported, for fear of radioactivity – and possibly an explosion similar to the blast that blew off the roof and a portion of the walls surrounding the reactor. In the face of official pronouncements of carefully qualified optimism, the industry minister, Banri Kaieda, found it "difficult to say that things are showing progress."

Always, however, the bureaucracy looked for a silver lining in the clouds, mingling cautious optimism with realism. "We have come to a situation that is close to getting the situation under control," said Tsuburo Fukuyama, deputy chief cabinet secretary. "However, we have repeatedly faced a situation that was not predicted. We must remain attentive in dealing with the situation."

Careful avoidance of any declaration of success in containing the threat of radiation portended a long struggle to which there was no certain ending. Radiation might spread over a much wider area if the reactors that presented the worst problems did not cool down soon enough to stop radioactive substances from escaping into the high atmosphere and drifting in rain and wind currents over much wider swaths of territory, including the densely populated capital region and possibly much further afield.

Although far from panicked, many people preferred to buy foodstuffs from other regions after Prime Minister Kan ordered the governors of the four hardest hit prefectures to restrict shipments of milk and all varieties of vegetables in which samples had been "detected to exceed the limit" of radioactive material. Jeffrey Tudor, who worked for many years for a large Japanese company, said that he and his wife were no longer buying spinach from the entire region. "The Japanese are very careful about labeling," he said. "We get vegetables from Shikoku," the large island off the coast well south of here.

The mysterious smoke rising from the number three reactor showed how uncertain was the recovery. Always, the answer to questions about what would happen next remained painfully unclear. "We consider the cooling is the most important matter we have to deal with," said Fukuyama. No, "It would not be appropriate to say how long it will be." A-P



Nam Sang-gun

BY YANG DABIN

"You always have to be prepared, and if not, you cannot grab at a chance. This is a motto of our company. Opportunity comes and goes like a wind. People say that three big opportunities come in one's life, but I don't agree with them. They actually come dozens of times, but most people don't recognize most chances. They just let them blow away because they're just like a wind. If you always watch around yourself and prepare well, you can see a chance coming and get it. That's the

most important virtue when it comes to running your own business," said Mr Nam Sang-gun, C.E.O. of Multis Hydro, a subcontractor of POSCO which makes more than 90 percent of the products POSCO is using, in an exclusive interview with Asia Pacific Business and Technology Report.

Here's an excerpt from the interview.

"Opportunity Comes and Goes like a Wind"

Can you explain to us the products your company produces and their significance in the industry?

We mainly produce components of rotary machines for stopping leakage. Our key products are mechanical seals, rotary joints, swivel joints, loading arms, and bearing isolators, among others.

Rotary joints and mechanical seals seem to be Multis Hydro's key products. Can you explain to us what these products are and their usage?

Simply put, submarines can be a good example. We've seen submarines rotating a big propeller and disappearing in movies. There's a shaft that rotates a propeller, where the seawater can possibly go into the submarine through the crack. And what stops this from happening is a mechanical seal. We actually repaired the mechanical seal of Jangbogo-ham, a Korean submarine. A rotary joint is a part that connects to the pipe when supplying cooling water, high-temperature steam, or hydraulic oil inside the roller. This component needs a high degree of credibility.

What are the key philosophies that Multis Hydro pursues in the manufacturing field?

Truthfulness and customer satisfaction are our key philosophies. We've been producing many products with our constant efforts and creativity. Machines don't allow for falsification. Striving for the best quality is the utmost efforts. I think to get customer's satisfaction is how we survive in manufacturing field.

I'd also like to add that I teach technologies to employees that I'd learned from my teacher, Osamu Araki. He's Japanese and he was among the very first members of the mechanical seal engineering community throughout the world in the middle 1940s.

Another thing I would like to say is that you don't know what will happen to you tomorrow. So I try to train my employees as best as I can. We shouldn't disclose our own technologies to the outside world and we should train our workers with our best knowledge and technologies. That's what I always emphasize to my employees.

In planning for the future, nurturing and training the employees are very important things. We have to reinforce our weaknesses. If we cannot benefit our cli-



ents we would not survive. It's not like we're okay because we make a big profit from our products. The important thing is that we maintain our quality for our clients.

When did you start your own business?

It was 20 years ago. At that time I had almost nothing in my hands but my technologies. I started my business with just US\$3000. I was trained for three years to do basic planning. Actually I was a design engineer. And I started learning it from 1980. After doing business for a long time I have come to certain foresights. We hope for our sales figures to be US\$100 million by the year of 2020. And we know that it's doable.

Multis Hydro is known for producing 'top quality' products in the industry. Can you explain to us what Multis Hydro is doing to achieve such a goal?

Honestly speaking, there's a shortage of human resources and financing for small-and-medium businesses to get quality development. We are under partnership contract with POSCO. POSCO is running education and supporting programs like 6 Sigma for its subcontractors, and we are taking advantage from them for capacity building of our employees. And we're also developing products by selecting the new tasks with universities and state-sponsored research institutes. We signed an agreement with KIMM (Korea Institute of Machinery & Materials) and are doing lifespan testing to guarantee the lifespan

of rotary joints for oil pressure that have been running for three years nonstop. In the contract there's a clause that we shall give notice about the result of this constant test if we find any leakage.

What is the competitive advantage that Multis Hydro has that differentiates it from other competitors?

It's all about quality. Our market has been open as a key market of world-renowned brands for 30 years now and we cannot survive unless we are in a dominant position in quality. That means it's impossible to survive if you make quasi-quality products by imitating, like in many cases in China. We are supplying a large percentage of products that POSCO uses in our field. The possible reason for this is that we've tried to figure out what the problems are by tracking the products that we have supplied and we've provided new models with extended lifespan. Through these efforts our products can now guarantee much longer lifespan than was possible earlier. Due to these efforts now POSCO is able to reduce its operating costs by US\$10 million annually. Our strategy is that we make our best efforts to satisfy our customers through excellent quality, even if they require only a single piece of product.

R&D is one of the most important investments that manufacturing companies must make to stay competitive in the market. How much is Multis Hydro investing in the R&D department and were there any significant findings in this department recently?

The world has been changing rapidly since 2002. Companies are immersing themselves in cost reduction and developing productivity to survive. Machines are getting faster and more automated. We have to foresee the future market and change ourselves accordingly. We've invested in products that are used in automated machines and semiconductor facilities for more than 10 years now. Now the results have begun coming into our sights, and they will account for 30 percent of our sales in 2012. Our goal is to increase sales 50 percent annually and this could certainly be the result of R&D investment.



MECHANICAL SEAL

ROTARY JOINT

SWIVEL JOINT

Domestically, Multis Hydro has been cooperating with companies such as POSCO, PSTECH, Cheonnam techno-park, etc. What are the future plans for Multis Hydro domestically?

The Korean steel industry has been growing rapidly recently. Hyundai Steel Company has been born and Dongkuk Steel and Dongbu Steel have largely invested in equipment that we have supplied a great deal of. Of course our market has been expanded but we've also paid attention to the new markets like automobiles and semiconductors. We're ready with R&D investment and hope to see a tangible achievement from this year.

Internationally, Multis Hydro has been cooperating with Japan and some countries in Europe. What are the future plans for Multis Hydro internationally?

Our products are very sensitive. Production of major companies could be stopped if there is any problem in production lines. Internationally our reliability has been proven and established for a long time now. Lately we have supplied many products to JFE Steel in Japan after due verification. We are also supplying to the U.S. and Canada through Hydro, our partner, and since we've just begun in the European market, there hasn't been a big achievement yet. But I think we have a very good reputation and credibility with quality because we've been working on projects with world-

We aim for 50 percent of sales growth this year and an increase in sales by 50 percent annually in the coming years. The economic recession is actually a chance for us. Our buyers are wanting to cut costs. Multis Hydro is a company that's prepared to satisfy the clients all the time on the basis of competitive price and world-best technology.

renowned engineering companies such as Voest Alpine, Con cast(SMS) and DANIELI. Our top performance in supplying to the main production line of POSCO will be especially helpful for tapping new markets. We expect to accomplish a great deal in a short period in new emerging foreign markets.

Even though the world economy has been stumbling as a whole, Multis Hydro has continually expanded and made profits every year. What were some of the strategies of Multis Hydro?

In 1997 the Korean economy took a direct hit from the IMF. But it was an opportunity and it became a driving force for our company to develop faster. We aim for 50 percent of sales growth this year and an increase in sales by 50 percent annually in the coming years. The economic recession is actually a chance for us. Our buyers are wanting to cut costs. Multis Hydro is a company that's prepared to satisfy the clients all the time on the basis of competitive price and world-best technology. 'If you're same with others, you cannot surpass them.' That's my belief. In Korea competition is cut-throat because we lack in natural resources. Under this intense competition we've made cost reductions and secured the best technology through a lot of research and experience. This could be what clients want. The future of Multis Hydro is very bright and there can never be a recession for us.





And actually the economic recession is really a great chance that may never come in my life again. Our factory is running at full capacity and that's why we're going to build a new factory which is about five times greater in size. People were not very interested in products made in Korea in the past, but they have begun to use our products. They now give us a chance because when it comes to recessions, people try to find products that are reasonable and have high quality.

For the past few years Multis Hhydro has been working closely with POSCO. What were some of the accomplishments that Multis hydro made while working with POSCO?

We've been constantly working on figuring out the problems of the products used in POSCO and extending the lifespan of products. For example, they used to use rotary joints for continuous casting m/c (segment), but the lifespan was only about 6 months. After thinking hard for some time, they decided the structure had to be changed, and we made a totally newly-structured model. We're now supplying a product that doesn't leak even after two years of use, which is the lifespan of a roller. With the extension of lifespan of rotary joints, purchases of rollers and bearings went down by 50 percent, and there's now no more overtime work in the repairing department. That's how POSCO could cut cost by US\$10 million on an annual basis. The volume of purchase of our products now is only 15 percent compared to the past.

The degree of reliability of our company grew substantially, and now in new and replaced facilities of POSCO, 100 percent products are from our production lines. Currently, approximately 20,000 sets of products are installed and used in these

production facilities.

What are your plans for newly emerging marketing such as India?

We'd like to enter the Indian market and we hope to find a partner. We don't know yet if we're just going to have a business or build a factory there by collaborating with partners. I know the Tata group is doing great work by helping their people. In India, companies give their money to the people as part of their social responsibility. We are a really big fan of the strong Indian business culture, and we hope we can have a chance to spread our roots in India.

What are some other future plans for Multis Hydro?

Besides the products we are currently producing, we are investing heavily in loading arm and we aim to install it in all the bases of the Korean navy in three years. Multis Hydro is hoping to enter the big 5 brands in the world by 2020. Though we expect a lot of hardships but we're not afraid.

Is there anything you want to say to our readers?

We're going to continue providing the best technology and services to our esteemed clients. Now we're small but you will see how rapidly we're going to grow and how reliable our company is. We want the readers to remember Multis Hydro and to support us. Thank you very much. A-P



MULTIS HYDRO

ROTARY JOINTS



2004. Design ver. 1.0



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Smart Grid:

A Green Solution for a Better Tomorrow

BY SHAMILA JANAKIRAMAN

In this age of digital control over everything from entertainment to utilities, the Smart Grid has gained immense popularity in many countries in the West.

It helps control appliances at the consumer point, thus saving energy and increasing reliability while being cost effective. The smart grid enables digital communication between suppliers of electricity and consumers. Yet it is nothing but an electricity network working on digital technology.

The grid will be comprised of an information and net metering system with smart meters and is expected to offer energy independence and check global warming. Even domestic consumers will be able to adjust their power consumption based on the grid condition. Like utility grids, the smart grid has an intelligent monitoring system to check on the flow of electricity in the system.

It can also incorporate alternative sources of energy like solar power and wind power. It enables consumers to use appliances selectively in order to reduce demand, depending on peak times and other factors.

Across the world smart grids are making waves, and are now becoming popular in the Asia-Pacific region. Australia, New Zealand, South Korea, Japan and Singapore have been fast adopters of this technology, with more countries soon to follow suit. This is underlined by the fact that the 2nd Electricity Innovation Smart Grid 2011 conference is scheduled to take place in Seoul, South Korea between April 12th and

13th, 2011. Transformational forces that can bring winds of change in countries desirous to implement smart grids will be examined during the event.

The reasons for smart grid deployment include electrification of the transport sector and the ready availability of real time information about energy creation, storage and use. The conference is expected to discuss such factors and share technological knowledge, along with studying the efficacy of existing projects as well, said conference sources.

In March, 2011 IBM announced that two new utilities - TEPCO from Japan and KEPCO from Korea- have joined the Global Intelligent Utility Network Coalition comprised of utility companies that are promoting the adoption of smarter energy grids. TEPCO serves around 28 million customers in the Tokyo area.

As Korea's sole electric power company, KEPCO owns a comprehensive smart grid test bed in Jeju Island, which applies smart technologies in the areas of generation, power grid, electrical service, buildings and transportation. Kim Woo-kyum, Executive VP and COO of KEPCO, said, "By joining the Global IUN Coalition, we expect to actively collaborate and make exchanges with international electric companies. Through this group we can participate in new projects and smart grid business opportunities worldwide."

The coalition member companies like NDPL of India offer the perspective of providing power to an emerging market. India offers a scenario where reliability and full access to electricity for the entire population is in the developmental stage. Using inputs given by the coalition, Essential Energy created a smart grid demonstration center in Queanbeyan, Australia.

Pike Research published a report entitled "Smart Meters in Asia Pacific" which

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Power Demand Goes Slower as China Gets Renewable Energy Boost

BY DING DING

As the world's biggest consumer of energy, China has also been tagged as the primary source for harmful greenhouse gases known to cause climate change.

Although the country has been very sensitive as the recipient of this title and has always maintained that pollution is the price to pay for industrialization, the government still pledged to adopt measures to curb these harmful emissions.

China's electrical demand rose 1.46 percent in 2010 despite the global economic crisis. To address this rise, China is accelerating its use of alternative energy resources that will reduce its reliance on fossil fuels such as coal-fueled power plants that comprise over 80 percent of the country's electrical resources. Non-fossil fuels such as solar energy, wind power and hydropower will take on more importance as the country is heading towards a stronger but greener growth.

As such, the country is expected to reduce its power demand to only a 9 percent growth in 2011, which is equivalent to an overall consumption of 4.5 trillion kilowatt hours for the year. Cleaner energy resources will eventually bring about this balance as the nation aims to increase nuclear capacity to 11.74 GW, solar power capacity by 500 megawatts, and 14 GW more of wind energy capacity.

China's Power Consumption

The U.S. Energy Information Administration made an earlier forecast that China will overtake America in energy consumption by the year 2015. However, in a report released by the International Energy Agency, China has already surpassed the United States years ahead of this forecast. Although the United States, if seen from a per capita perspective, still consumes more oil and energy, China has registered the fastest consumption rate increase among all other nations.

China's fossil fuel energy consumption in 2000 was 1.107 billion tons but this rate has more than doubled in less than 10 years. This is due to the country's high economic growth rate, as the rest of the world has been reeling from the effects of the global economic crisis. This can also be attributed to China's ever-growing population, which is slowly shifting from the rural farming subsistence to a more urban, energy-hungry, modern lifestyle of cars, gadgets and appliances.

Environmentalists however, are slightly optimistic about China's energy status. They

acknowledged China's role in leading global research and development into alternative energy resources. Even economists from IEA point to China as the global leader for solar and wind power. With China right in the center of its five-year development plan of reducing carbon emissions, the country is now on its way to reaching its energy consumption goals.

China's Renewable Energy Initiatives

China is targeting a 15 percent renewable energy capacity for its overall power generation, and is expecting to exceed this; it may even reach levels of up to 18 to 20 percent of its total energy consumption. Coal-fired power plants still account for more than 700 gigawatts of power capacity, but the country is optimistic in its renewable energy development plans, which are expected to grow faster than their standard fossil-fueled power plants.

China's major players in the power market are spearheading the nation's cause for generating clean electricity, and are all keen on raising clean energy capacities from 15 to 30 percent. Wind energy has the greatest potential, with China leading the world in this particular industry development as the country continuous to build enormous wind farms in regions suitable for wind power as well as offshore wind resources.

Ernst & Young recently ranked China as the topmost nation in which to invest in renewable energy, replacing the U.S. Environmentalist organizations such as the World Wildlife Fund (WWF) are hopeful of what China's green initiatives can do for the global community, as it sets a high energy-efficient and low-carbon economy example. [A-P](#)

FURTHER READING:

- Shanghai Daily www.shanghaidaily.com
- Bloomberg www.bloomberg.com
- The Huffington Post www.huffingtonpost.com

COMPANIES MENTIONED IN THIS ARTICLE:

- International Energy Agency www.iea.org
- Ernst & Young www.ey.com
- World Wildlife Fund www.worldwildlife.org

China's 5-Year Plan on Energy Efficiency

BY AMANDA MIN CHUNG HAN

There is an old Chinese saying that a disaster can be a blessing in disguise.

How about a blessing can be a disaster in disguise? The Chinese government recently revealed its energy efficiency and

Learning From Europe:

China Profits from Solar Policy

BY KEVIN LIU

With its booming economy, China has grown to be the biggest electricity consumer in the world.

Although this catapulted China into the number two spot among the world's top economies, it also created problems for the nation, particularly with how to increase power generation capacities without incurring significant financial losses and adding to the nation's already huge carbon emission footprint.

China has extensively begun solar-energy initiatives in a bid to improve power generation through alternative and environmentally safe resources. The country is taking its lessons from European countries such as Germany who have made great strides in solar energy development and deployment. In Europe, countries are paying above-market subsidized rates to attract their communities into adopting solar energy systems and initiating installations.

The nation's year-long study of European solar power systems is causing delays in ongoing projects, much to the chagrin of foreign developers, such as First Solar Incorporated of the United States, that are planning to put up solar energy projects in the country. On top of that, China is also studying to shift its focus into supporting their own equipment manufacturers, helping them gain better market shares, and eventually lowering China's overall costs in pursuing solar energy initiatives.

China's Solar Power Policy

China is a country blessed with rich solar power resources, having an average annual solar energy radiation level of over 5,000 MJ/m². On top of that, two-thirds of the country has over 2,200 sunshine hours every year, making it an ideal situation for solar energy systems to be put into practical use. In light

of this, China established its own medium and long-term objectives to develop the country's solar energy market.

To support this, China previously legislated its own Renewable Energy Law and is currently pursuing an extensive Renewable Energy Medium and Long-term Development Plan, with the goal of attaining up to 1800 MWp of solar energy capacity by the year 2020, according to the latest Digitimes Research report. Initially intended to supply electricity to remote areas, China's solar energy initiatives evolved into developing large scale solar energy plants capable of providing solar powered electricity into urban areas with projects that included the Solar Rooftop Plan and the Golden Sun Demonstration Projects.

Learning from Europe

Solar power investments in Europe reached over US\$65 billion last year. The growth was so immense that the leading panel markets such as Germany, Spain and France had to make unplanned subsidy cuts just to stem the tide of projects coming from new developers. China, seeing this success, is eager to match what Europe has done and benchmark these systems right into their own solar energy market.

According to PricewaterhouseCoopers LLP of London, China has already started to play in this solar energy game and is investing much to subsidize its own solar plant manufacturers. Bloomberg New Energy Finance also reported similar trends, citing the government's China Development Bank's approval of credit facilities to various solar energy equipment makers amounting to over 126 billion yuan, or close to US\$19 billion. This includes suppliers of raw polysilicon materials to manufacturers of complete solar panels. [A-P](#)

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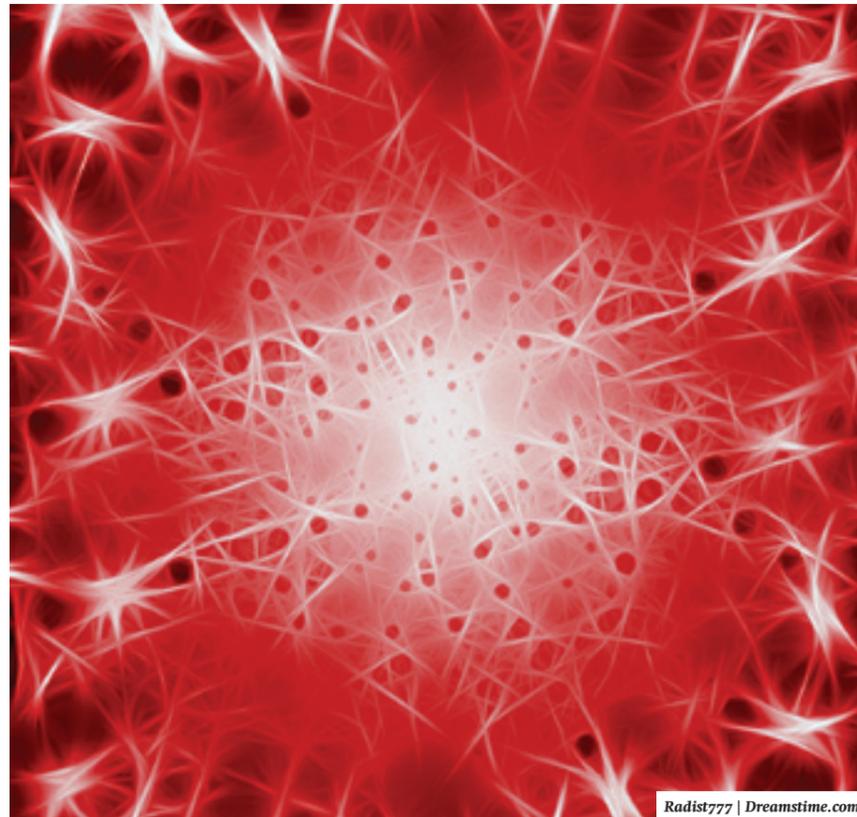
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greenhouse gases reduction plan as part of the nation's 12th Five-Year Plan (2011-2015). However, the country's remarkable economic growth seems likely to be the biggest hurdle in realizing its environmental goals.

From 2006 to 2010, during the 11th Five-Year Plan, the energy consumption reduction per unit of GDP was 19.1 percent. It was 0.9 percentage points short of its 20 percent target set out for that particular five year plan. The 11 percent of striking economic growth rate was blamed in obstructing the Green China plan. The expected economic growth was 7.5 percent during the same period.

Due to the rapid growth of the economy, there has been high energy consumption and a high emission of greenhouse gases. The nation's per unit GDP energy consumption reduction was

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Asia-Pacific Nanotechnology Updates

BY ANURAG AGNIHOTRI

Some of the most exciting concepts and themes portrayed in much of today's modern cinema feature the ability to manipulate atoms and molecules to create new materials, weapons or micro-machines that can go inside human beings.

Though it may sound like science fiction, this idea of nanotechnology is not far from the truth as new horizons are opening up that will be paving the way for the future to arrive now.

Several countries and private institutions around the world are investing heav-

Continued from Page 20

Polytechnic University (HKPU) offers Design Strategies masters courses that integrate design, business and technology. Shanghai's Tongji University now focuses on increased innovation in China through design research, design management and education.

Similarly, In India many other institu-

tions in nanotechnology, which promises a new revolution for materials, information technology, genetics, medicine and many other industries. Transitions from research and development laboratories into practical applications in various markets are ongoing, and the world will soon have its first taste of new products and systems that are based on this innovative technology.

The recently concluded Nano Tech Fair 2011 was held in Tokyo and was attended by more than 500 companies and 50,000 visitors from across the globe, with top Asian companies such as Toshiba featuring their latest research and development projects in this field. The Asia-Pacific region is taking a lead in this sector that promises new heights of developments in various fields, from medicine to green technologies. The following provides a brief look on the issues and updates of nanotechnology in the Asia-Pacific region, including trends as to where this technology is heading for the region in the near future.

Ethical Issues in Nanotechnology Development in the APAC Region

In a report from UNESCO's Regional Unit for Social & Human Sciences in Asia and the Pacific (RUSHSAP), the ethical implications of nanotechnology in the region were

tions offer specialized courses on design, such as the National Institute of Design in Gujarat. Even premier institutes like IITs offer industrial design courses which help synergize design factors with economic viability.

Traditional business models which try to leverage available options for more

discussed in complete detail. The report describes fears surrounding nanotechnology, particularly on the practically invisible nature of materials that can be produced which have serious implications on the invasion of privacy.

Other fears described included the autonomous operation, micro-locomotion and self-replication characteristics of products and machines that can be produced which could have unwanted consequences on society if let loose beyond control. These fears and issues are more prevalent in Asia and the Pacific region due to the cultural and spiritual characteristics of the countries involved, although pursuing such technologies that can bring about economic growth and alleviate human conditions are top national priorities.

The report describes that in discussing ethical issues related with this technology, there are some things that should always be kept in mind such as the fact that nanotechnology is neither bad nor good but would depend on how it will be applied. Still, skeptical views persist, particularly on how nanotechnology can be used in the incorporation of nano-machines inserted into human beings for purposes of early diagnosis or cellular repairs and other similar applications.

Trends and Updates in Asia-Pacific Nanotechnology

Nanotechnology commercialization is progressing rapidly in the Asia-Pacific region as new potential markets are being identified in various industries that include energy, textiles, healthcare and life sciences. Market growth for manufacturing products using nanotechnology is seen to continue growing beyond a 33 percent CAGR until the year 2015, while consumer goods are projected to grow by 9.4 percent AAGR.

Global spending is increasing by 29 percent with governments taking 52 percent of investments alongside corporate investors and capitalists in countries supporting nanotechnology. Asia-Pacific is seen to be the biggest and most important market for this sector, followed by the U.S. and Europe. **A-P**

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profits and greater efficiency alone will stand less of a chance of competing in the future world economy. Experts opine that a design-based model and a move towards an increasingly design-based economy will offer a greater chance for fast revival of businesses at this time when the world is awakening from recession. **A-P**

APAC SMBs Adopting Security as Top Cloud Initiatives

BY ANURADHA SHUKLA

Small and medium scale businesses in the Asia-Pacific region wanting to expand their business reach have started to rely on online and mobile channels such as websites, e-commerce and mobile web to market their products or services.

However, many lack the resources and the internal capability to upgrade their IT infrastructures in order to take on more complex applications and processes. With cloud services, APAC SMBs now have the means of achieving such upgrades without the associated high costs.

In the 2010-2011 World SMB Cloud Service study from AMI-Partners, security services were shown to be the topmost priority among APAC SMBs migrating to cloud initiatives. These studies present a comprehensive look at how SMBs adopt Cloud applications and managed services and the available Cloud-based opportunities for SMBs in 23 countries. The study states that SMBs in this

region are registering a higher rate of adoption for Software-as-a-Service (SaaS) security solutions than their counterparts in the west. The following provides a brief look at how these transitions are taking effect.

Transition to Cloud Computing

Cloud computing has evolved into a worldwide phenomena, with SMBs or companies having less than 1,000 employees adopting varied cloud focus areas, depending on where these enterprises are located. For the Asia-Pacific market, the high potential for cost savings optimization cloud computing can provide makes it appealing to SMBs, now that the economic environment in the region is still very uncertain. This preference for cloud computing is evident, with demands growing at a very rapid pace.

A good example is the tremendous growth experienced by Symantec SaaS in the Asia-Pacific region, registering increases in their customer base by up to 50 percent, and now reaching figures of up to 32,000 clients in the region. According to Symantec, what makes cloud computing high in-demand among these emerging markets is its simplicity of deployment that entails no significant added costs.

IBM also acknowledged this high demand for their globally-integrated cloud delivery network, composed of 13 global cloud labs, seven of which are located in the Asia-Pacif-

ic region. This is why IBM has initiated their investment of up to US\$38 million in setting up a new IBM Asia Pacific Cloud Computing Data center right in the heart of Singapore. This new data center is set to provide IBM's clients with a comprehensive cloud services network with minimum capital expenditure that will significantly reduce their operational costs.

Top Cloud Initiatives

2011 is expected to be the year for an increased cloud services adoption in the Asia-Pacific region. Among the top cloud initiatives that APAC SMBs will initially be adopting, security services take the top-most spot. Asia-Pacific countries, particularly those belonging in the Association of Southeast Asian Nations, or ASEAN, are set to invest more heavily on remotely managed security services.

Security, data backup and other similar cloud services take priority among these SMBs, due to their relatively easier deployment and implementation, as compared to the more complex and critical applications that would be more difficult to migrate and configure. Such ease in implementation makes them ideal starter packages that APAC SMBs can easily adapt. **A-P**

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revealed that the installed base of smart meters in Asia Pacific will grow from 52.8 million to 350.3 million by 2016, indicating a compound annual growth rate (CAGR) of 37 percent. Advanced metering infrastructure (AMI), which employs two-way communication and real-time monitoring, is being deployed in many parts of the region.

China is projected to represent more than three-quarters of the installed bases of smart meters in Asia Pacific by 2016. The Chinese government will deploy smart meters through to 2020. Japan, South Korea and Australia also form significant markets for smart meters.

The smart grid technology will spur growth for businesses like that of metering companies, network and software solution providers, system integrators, consultants and equipment manufacturers. Although expensive to implement, in the long run smart grids give greater return on investment. This should serve as an impetus to other countries that are yet to join the band wagon. **A-P**



Stephen Vanhorn | Dreamstime.com



The State of Online Asia-Pacific Travel Services

BY XIE-YAN

The incredibly fast growing popularity of online and mobile channels in the Asia-Pacific has paved the way for tremendous growth in several vertical industries such as the travel and tourism industry.

Strengthened by a growing Asian middle class, the emergence of multilingual travel websites and mobile portals, as well as increased security for online payments make online travel services a very important sales and marketing channel for the industry.

Major airlines in the Asia-Pacific region are beefing up their e-Commerce platforms and are investing in better and more innovative online channels such as bookings, e-ticketing, check-in, and other services that will deliver an even better customer experience. Online travel agencies such as Travelocity and Expedia, both of which have experienced significant success in the European and United States markets, are now focusing their sights on the Asia-Pacific by putting online travel efforts in this region at the top of their priority list.

Online Travel Services in the Asia-Pacific

The Asia-Pacific is a region where the online world is sitting at two different development levels. At one end of the spectrum sit countries like Japan, Singapore and South Korea, as well as the Australian continent, where e-commerce and online travel are more mature due to their advanced digital infrastructures. On the other end of the

spectrum sit countries with less developed online capabilities and infrastructures but which are steadily showing growth in this area.

Overall, the region showed a 7 percent increase of total Internet audiences from 477 million in 2009 to 511 million in 2010. From this figure, 129 million visited online travel sites in 2010, registering a 19 percent increase from the previous year. Most of the traffic was generated by online travel agents, registering 52 million visitors for a 30 percent increase from 40 million the previous year.

At the middle of this online spectrum lie China and India, whose very dynamic digital economies are now driving the region's overall growth and will be opening up new and massive opportunities for the travel and tourism market. In 2006, Chinese online travel bookings registered a net worth of US\$1.5 billion and this number has been steadily increasing each year by 60 percent, now expected to reach figures close to US\$15.4 billion by the end of 2011.

This is attributed mostly to China's tremendous economic growth. Coupled with a meteoric rise in China's Internet user population and the government's easing of overseas travel restrictions, it is expected that sales and revenues for the Chinese travel and tourism sector will continue to grow more expansively.

India likewise is showing the same trends, with an average annual growth rate of 46 percent since 2007, and which is expected to reach revenues of up to US\$4 billion by the end of 2011. This growth is attributed to India's growing middle class, who now have the resources and facilities to purchase railway or budget airline tickets via the Internet. In response to this trend, new and upcoming Online Travel Agencies are emerging to cater to the travel demands of these consumers.

Airlines have also been cashing in on

these growing trends in online travel bookings, with AirAsia leading the list, garnering an average of 3.5 million unique visitors each month, a significant 15 percent year-to-year growth. Tiger Airways, on the other hand, exhibited the largest growth rate among the top ten Asia-Pacific airlines by registering a 52 percent upward trend from 2009 to 2010 and garnering up to 930,000 unique visitors monthly.

Movers and Shakers in APAC Online Travel Services

The following provides a brief rundown of recent trends and developments from the top movers and shakers in the Asia-Pacific Online Travel Service industries.

- Malaysia Airlines has launched their latest re-designed websites and since then there have been a tremendous increase in online self-service transactions through these portals, which the company expects to generate up to a 70 percent growth in revenues. These new websites feature a virtual customer assistant that makes the visitor's online experience a lot simpler and more convenient. The websites' features allow consumers to plan their travel more conveniently aside from giving visitors destination guides, travel ideas, and other service offerings such as car rentals and hotel bookings.
- Aside from their revamped websites, Malaysia Airlines also launched their innovative Facebook page that has the facilities to handle online bookings and check-ins from within the social networking portal itself. The page features the MHBuddy which allows users to search for available flights within the airline's network as well as obtain data for times, prices, inbound and outbound options. But what makes Malaysia Airlines' portal unique from other systems in the Facebook world is the feature that will allow users to view which of their Facebook friends are booked on the same flights and destinations – allowing them to connect with their friends and exchange information about their trip plans.
- Focusing on the Asia-Pacific region, Expedia recently announced its new Singapore website that specifically meets the needs of Singaporean travelers, including air fare packages and hotel bookings. Aside from the Singaporean site, Expedia also maintains a web presence in Australia, New Zealand, Japan, and India and is upgrading its presence in China.
- Hotels.com is beefing up its online hotel booking presence in the Asia-Pacific by teaming up with Giosis Gmarket, a popular e-Marketplace in the region. This will expand the site's e-commerce offerings and provide Asia-Pacific customers an online window to book at any of the more than 130,000 hotels worldwide. Giosis Gmarket is enjoying an average of 300,000 visitors every day, many of which avail of their online shop-

ping services for beauty, electronics, fashion and sports products – and now can enjoy getting the inside scoop of the world's best hotel deals.

- Independent hotels in the Asia-Pacific region now have an efficient but cost-effective facility to drive bookings directly to their own websites or booking engines by working with Worldhotels' Resmaster booking engine system. Through this system, Asia-Pacific independent hotels can display their real time rates and availability directly next to major advertisers appearing in Google Maps or Google Places search results.
- Jetstar Airways, a subsidiary of Qantas and Australia's low-cost airline, is finalizing an iPad-rental deal with Appeal that they can offer to their passengers at only AUUS\$10 per flight. The iPad's will be available in the Jetstar's A320s plying the Australia and Asia-Pacific routes, providing passengers with their own personal in-flight entertainment system from where they can choose their own books, games, music, movies and magazines while in flight.

Several similar stories and updates abound among online travel services in the Asia-Pacific region, and would continue to increase within 2011 and on in the coming years ahead. These are just clear indications of how dynamic travel and tourism is in the region that will be opening new doors for a wider and more global market penetration.

Future Trends in APAC Online Travel Services

62 percent of Asia-Pacific travel agencies are optimistic for the upcoming trends and outlook in the region's travel and tourism industry, as economies rebound from the global recession and with new travel landscapes and destinations travelers can look forward to. The first quarter of 2011 is already showing signs of optimistic trends as it already registered a 15 percent growth for travel in the region, brought about by a phenomenal growth in the online and mobile travel services.

The Asia-Pacific region registers over 450 million mobile Internet subscribers, 127 million of which comes from India and another 155 million from China. Juniper Research reported potential revenue of US\$630 billion for the mobile payment market by the year 2014, providing a great opportunity for online Asia-Pacific travel services to leverage marketing through these channels.

The report also indicated that 85 percent of travelers in the region take their mobile phones and devices with them and would most likely prefer mobile bookings and payments for all their travel needs: from hotel bookings, car rental, insurance, to food and beverages and other needs. Fraud fighting operations are also being intensified in the region that will eventually increase consumer trust in these online and mobile channels.

In a recent report from Abacus, 55 percent of travel consumers in the Asia-Pacific region prefer to choose online travel services that offer multiple payment options that will allow them to select the method they prefer and are most convenient with. The report also

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ISP Code of Practice Issued in Singapore

BY DING DING

According to the International Telecommunication Union, there were 3,658,400 Internet users among Singapore's 4,701,069 population in 2010, giving this nation one of the highest Internet penetration rates in the world at 77.8 percent.

However, Singapore implements only a minimal level of Internet filtering such as blocking a few identified pornographic sites to signify the government's overall disapproval of such content.

What the state does do on the other hand is to implement strict licensing controls and legal pressures to regulate access, minimize objectionable content, and safeguard the nation's Internet infrastructure. The latest addition to these mandatory measures and controls is the ISP Code of Practice that Internet service providers must comply with.

Called the Resilient Internet Infrastructure Code of Practice, this new guideline will be issued by Infocomm Development Authority (IDA), Singapore's ICT regulator, to designated Internet Service Providers in the country, particularly SingNet and StarHub Online. IDA explained that these two ISPs were selected because of their effective oversight of Singapore's Internet infrastructure and that they can ensure the majority of the country's broadband services will be well-protected.

StarHub Online is the broadband Internet services subsidiary of Starhub while SingNet serves as the ISP arm for Singapore Telecommunications (SingTel), a local carrier in Singapore. Aside from these two ISPs, IDA is yet to identify how other players in Singapore's Internet infrastructure can take part in the observance of this new code of practice. This new regulation will take effect on April 30, 2011, but ISPs however are to be issued up to January 31 of 2013 to fully comply with the provisions.

Provisions Included in the ISP Code of Practice

The main function of this ISP Code

of Practice is to outline the specific security controls as well as outcomes that can address any existing or emerging cyber threats by ensuring that the correct processes are in place. This will equip both the ISPs and the IDA with an early warning system against potential cyber threats so that they can perform more informed decisions and to ensure that preventive measures are taken against these threats.

Such provisions will not only benefit the ISPs but their registered end-users as well by providing them with an effective response to cyber threats, thus protecting their businesses or personal accounts from cyber attacks. An example of these cyber attacks is the denial-of-service attacks that will make the computer resources practically unavailable to the user.

The provisions in this new ISP Code of Practice include mandatory security measures that are consistent with industry standards and the best practices that are recognized in international circles. These include protection of the ISP's core Internet infrastructure, which is composed of critical network components such as routers and switches, among others.

IDA recognizes the need for the ISPs to adjust to the provisions and measures required by the ISP Code of Practice, which is why it is giving them up to January of 2013 to fully comply with these requirements. Starting this April 30 however, ISPs should already start implementing essential security measures. Aside from that, ISPs are required to provide a report detailing security threats, incidents and other vulnerabilities encountered directly to the IDA.

ISPs that fail to comply to the code can be meted with penalties, ranging from issued warnings to severe financial fines of up to 1 million Singaporean dollars (US\$785,923), depending on the violation. On top of that, the ISP's license can also be suspended or revoked. IDA will conduct periodic audits into these ISPs to ensure compliance after the deadline periods. **A-P**

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Self Nature Posture Exercise

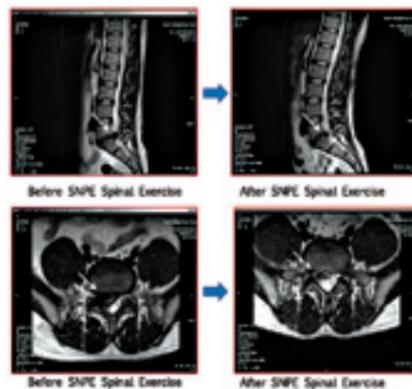
BY EUN YOUNG CHOUGH

Just like so many other low back pain sufferers, Professor Choi Joong-ki tried it all. From yoga to chiropractics to acupuncture, he too was one of those desperate seekers looking for a permanent cure to his pain.

The chronic back pain that he had felt for many years since his school days eventually drove him away from his dream of becoming a patent lawyer. To make matters worse, the pain he suffered while sitting long hours for the exam made getting up from bed every morning an arduous toil. From that point on, fifteen years ago, his endeavor to conquer his symptoms began.

According to studies, more than 10 percent of the world population suffers from chronic lower back pain. The National Institute of Neurological Disorders and Stroke estimates that around US\$15 billion per year is spent on back pain for disability expenses and medical care in the United States. In today's society, along with obesity, back pain has become one of several illnesses that represent the problems associated with a modern lifestyle.

Despite the poor prognosis for most back pain patients, Choi is now back-pain free. Through a Self Nature Posture Exercise (SNPE), the brainchild of Choi, his chronic back pain disappeared. Although he could not fulfill his dream to be a patent lawyer,



he has been successful. He is currently the president of the SNPE Good Posture Academy, professor at the Continuing Education Center of Hallym University of Graduate Studies and Continuing Education Center of Kyonggi University, and a best-selling author of his book, 'Straightened Spine, a Healthy Life.' SNPE, which was a result of more than ten years of clinical research, and which changed his life.

As the title of the exercise explains, the goal of SNPE is to recover the natural posture of the human body without the help of artificial support. SNPE can also be characterized as "3U," that is: united, unique and useful. The exercise is based on clinical studies that Choi undertook after studying yoga, pilates, chiropractics, muscle kinematics and applied kinesiology. SNPE is a unified New Paradigm Exercise Therapy. It is also unique in terms of its explanation of the mechanism and body mechanics behind the exercise therapy, and it is based on clinical research and a logical approach. It is useful because it rapidly and effectively removes pain and provides a good posture without side effects.

The mechanism of SNPE is accomplished by smoothing the muscle that surrounds the body. This is done because smoothing the muscle releases muscle heat, and this helps correct pelvis and spinal disarrangements. Another unique characteristic of SNPE is its involvement of tools, such as a pelvic belt and a wooden hand. Choi claims the use of these tools create a tremendous distinction from other exercises.

"Stiff muscles, hypothermia, and neurotransmission disorder are the main reasons for a bad posture and chronic pain," said Choi. "You need to give movement to the fixed spine that blocks the neurotransmission of the body, and SNPE does this by using tools. In that sense the therapy exercise is very specific."

The pelvis belt, which is one of the main tools of SNPE, was a creation by Choi as a result of adapting the fundamentals of orthodontics. He got the idea by thinking that just as small elastic springs, prosthesis, and bands are applied in realigning teeth, using the SNPE pelvis belt while exercising would be a good idea to realign the spine. Choi claimed, "If solid teeth can be straightened, the same can be done to our spine."

During SNPE training, many students noticed that their body temperature rose. After attaching the belt onto your body in areas such as the pelvis, knees and thighs, the trainee has to keep moving constantly. SNPE has to be done in a gradual manner because excessive force during the spinal exercise may cause physiological rejection by the body. According to Choi, not just any exercise helps to remove back pain and bad posture.

"One needs to be patient," he said. Further, he suggests "Exercise is useless when others help you to do it. That is why therapy such as chiropractics and massage therapy have high rates of relapse after realigning the spine."

Many ask about the effectiveness of yoga



training when it comes to bad posture and spinal exercises. But Choi also warns that exercises that require spreading the legs force the spaces between joints to become wider, creating friction. This friction rather creates more illness than lessening of the back pain.

In September 2008, using a pen name "Silver Rock," Oh Dong Hyun, one of Choi's trainees, consulted with him with a problem of herniated nucleus pulposus, also known

as "slipped disk." On Choi's SNPE website, he wrote a letter to Choi that he was having difficulties due to the slipped disk and his doctor recommended surgery. Oh had been suffering from numbness in his legs and had for a long time been sitting in an office. The doctor even told Oh that it was even a miracle for Oh to come to the hospital walking. After taking an MRI scan to see what was the reason for his numb legs, Oh started to exercise with the SNPE method with one exercise each day.

At first, Oh had to put up with the same symptoms with deeper pain. He could feel the pain from the sacrum to his toes. But after a year, Oh wrote a letter on Choi's website stating his pain was totally gone after steady SNPE therapy. The letter wrote, "I took an MRI scan after 11 months of the SNPE therapy, and the doctor asked me whether I underwent surgery. I was also told that it was a miracle to see the disk changed this way without surgery within a year."

It is not only patients who are learning the SNPE therapy from Choi who have seen wonders. Shin Yoon Jung, a yoga instructor who completed Choi's SNPE Advanced Spinal Exercise Program at the Continuing Education Center of Kyonggi University, also expressed her gratification to Choi after learning SNPE. The SNPE Advanced Spinal Exercise Program is designed to train SNPE coaches and give authorization to teach oth-

ers through certification. The SNPE therapy sessions and the advanced program both contain theory courses to learn about human anatomy and practical training. Shin expressed that the theory classes made her more available to students to help them with their problems more thoroughly. Her students at the yoga centers, including those suffering from dizziness or menstruation pains, had their symptoms totally resolved after treatment. For women suffering from



Choi Joong-ki | The Goods on Good Posture

BY EUN YOUNG CHOUGH

With more than ten years of research and clinical studies, Professor Choi Joong-ki, president of SNPE Good Posture Academy and author of the bestselling book *Straightened Spine, a Healthy Life*, has established his own exercise therapy called *Self Nature Posture Exercise (SNPE)*. A professor at the Continuing Education Center of Hallym University of Graduate Studies and Continuing Education Center of Kyonggi University, he has been spreading this exercise, which has helped various patients who suffered from symptoms such as herniated cervical disc, herniated lumbar disc, scoliosis, shoulder pain and obesity. He created SNPE after going through years of low back pain himself, and the tools used for the therapy have been gaining national attention from media and patients in Korea.

Q&A

gynecologic diseases, Choi argues that the SNPE helps to eliminate the disease.

“A crooked pelvis contributes to infertility, menstrual pain and back pain, and when giving birth the muscles and ligaments stretch when the pelvis spreads,” said Choi. “But once the spine and pelvis are aligned with the SNPE therapy, blood circulation occurs smoothly and helps to eliminate menstruation cramps.”

When Choi was working on his development of SNPE spinal and body mechanics exercises, he noticed the importance of shoes was being neglected when treating lower back pain. Podiatry has been highly researched in the western world, but he noticed much of the back pain treatment and research in Korea didn't focus much on shoes



Can you explain to us what Self Nature Posture Exercise (SNPE) is?

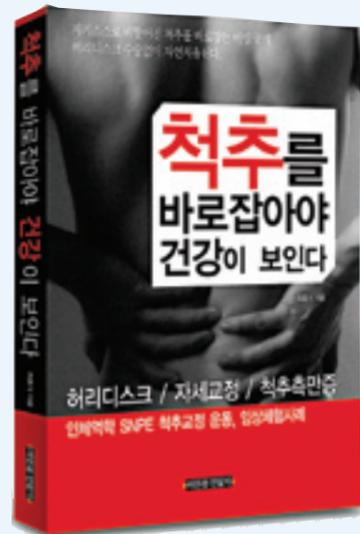
SNPE stands for “Self Nature Posture Exercise,” meaning exercise that aims to recover the natural posture through one’s own effort. It is based on “selection and specialization” when applying its exercise methods, and emphasizes repetition of the exercises. Common exercises were created to alleviate or cure low back pain mainly including stretching and muscle strengthening, but SNPE is a specialized exercise that can help maintain one’s correct posture. It consists of selected exercises that straighten a crooked spine.

What is the main philosophy behind this exercise?

The philosophy behind SNPE is simple. A crooked spine or a deformed pelvis cannot bring about a healthy life, just as the title of my book Straightened Spine, a Healthy Life implies. A deformed spine entails various pains and illnesses; thus, maintaining a straight posture is the secret to an enhanced quality of life.

What are the procedures of SNPE therapy?

There are more than 30 kinds of exercise movements of SNPE, but beginners, non-professional learners, and back pain patients first focus on practicing the SNPE step one, two, three, and four movements. After being trained for quite a while and getting used to the movements of steps one to four, students gradually move onto the next steps such as step five, six, seven, and on up to thirty and above.



What are the core teachings that SNPE is trying to impart to its students?

The key to sustain a correct posture and a straight spine is to be informed of concrete methods that are easy enough to be employed by oneself without the help of others. SNPE does just that. Students who learn SNPE follow the exercise movements of the instructor, but question the need of the exercise based on body mechanics and the anatomical explanations of the musculoskeletal system. To learn the teachings of SNPE, one needs to do more than just passively follow the exercise movements.



Please explain the SNPE therapy courses you teach to your students?

SNPE therapy courses are based on theory and practical training. Of the three-hour session, one hour is theory learning and two hours are actual training. During the one-hour theory class, the students learn the history of SNPE, anatomy, principles of SNPE treatment, student presentations on clinical study results of SNPE, and so on. During the two-hour class, students get to practice various motions of SNPE training, practice SNPE tools made for spine straightening, and so on.



What are the major health benefits to those who undertake SNPE therapy?

Many patients diagnosed with conditions such as intervertebral disc or disc herniation that needed surgery were cured after using SNPE therapy – without surgery. Also, SNPE was successful in lessening or removing the pain of many people who suffered from musculoskeletal disease and spine pain. The core of the exercise training is to smoothen the stiff muscles and give movement to the fixed spine. It is known that muscle stiffness and rigidity blocks the blood flow between the muscles and creates many illnesses. The key point of SNPE is that it is a “new paradigm exercise therapy” that makes stiff muscles smoother and gives movement to the fixed spine.

Aside from the SNPE therapy courses, can you tell me about the SNPE Advanced Spinal Exercise Program you are managing?

The SNPE Advanced Spinal Exercise Program was developed to train SNPE coaches. After a year of extensive training, only 30 students a year who participate this program will earn the coaching certificate. It is highly competitive. Around 50 to 60 percent of the students enrolled in this program fail to receive the certificate. Compared to yoga instructors who complete their requirements to work as

an instructor in only three or four months, SNPE stresses the importance on basics and quality of the teaching methods over a longer duration.

Can you explain how SNPE is related to our health, especially in terms of the well-being of individuals?

People nowadays are well-informed with health-related information. However, not many know specific treatments and methods that can increase one’s well-being. Also, when it comes to well-being, many are afraid of the high cost they think they have to invest to maintain their health. But this is not the case with SNPE. If one can understand the principles behind SNPE therapy, the exercise can be done by anyone, even indoors without the help of others and without spending any money.

Are there any side effects to your SNPE therapy?

From children to the aged, everyone can utilize SNPE therapy, though it is critical to adjust the time and intensity of the exercise depending on one’s age and health condition. SNPE therapy has no side effects, but failure to monitor the time and intensity may result in temporary pain or fatigue. However, these symptoms can be removed by constant SNPE therapy. If difficulties continue during the therapy, getting help from a director who has a SNPE coaching certification may be another good idea.

What recent significant studies were done at the SNPE academy?

By using SNPE spinal exercises, many show signs of relief of shoulder pain and pain from herniated cervical and lumbar discs. Especially, among the tools made for SNPE spinal exercises, the elastic pelvic belt and the finger-shaped tool help many patients. Another tool, the “wooden hand” helps to remove shoulder pain and pain from a herniated cervical disc. In a recently announced clinical study of SNPE spinal exercise, MRI images of a patient who was diagnosed with a herniated lumbar disc showed differences after SNPE therapy. The differences were even acknowledged by the patient’s doctor. Much more clinical research can be found on my website at www.snpe.co.kr and <http://cafe.daum.net/chiroup>.

Can you tell me about the SNPE functional shoes?

While developing SNPE, I have studied much about spinal exercises and body mechanics. I noticed that former studies about this subject did not include much about the importance of shoes. Most patients suffering from musculoskeletal disease have had a relatively small amount of time dedicated to walking. So I thought developing light and comfortable functional shoes would encourage patients and non-patients to walk more than they usually do. I focused on developing the sole of the shoes to help people balance and walk more naturally. The shoes also received

until recently.

He also realized that problems in the musculoskeletal system had to do with a lack of walking, and if he could foster more people to walk, the numbers of back pain patients would naturally decrease. This is why he not only developed SNPE, but also SNPE functional shoes that can be worn during the SNPE training or in normal walking. He said that the reason people feel fatigue is due to the high heels on their shoes. This moves the body's gravity line to the front part of the body, thereby distorting the natural alignment of the spine.

"For humans who walks erect, shoes are the most important consideration," said Choi. "This was not discussed much in the past. I think the best way [to be healthy] is to go back to our natural state."

Thus, when he first had the idea of looking at shoes, he was interested in Maasai walking shoes that had an undercut to the sole and heels of the shoes. But Choi noticed shoes that had a round bottom had problems associated with trembling when not walking, being slippery during the rain and increasing risks of a twisted ankle when walking. Choi thought the Maasai were healthy because they had the habit of walking long hours, not because they were wearing these so-called Maasai walking shoes. The Maasai walking technique was the foundation of the Maasai walking shoes and was a result of a linguistic combination, not a special walking technique. The Maasai have less lower back pain, chronic disease and musculoskeletal disease due to their habit of walking long hours, not because of the walking technique itself. So when developing his SNPE shoes, he spent considerable time focusing on how to move the gravity line to the back of the body, and studied the pros and cons of Maasai shoes that had round bottoms and insoles, along with a way to develop a sole that can maintain the balance of the human body. As a result, with the help of a metallic molding production company, he decided to attach an arch sensor and magnetic cushion that received an international patent.

SNPE is important in that it is the first exercise technique that originated in Korea. Choi claimed that both SNPE and the shoes were possible because of his experience as a low back patient.

"I always say experience is the best teacher," said Choi. "The reason SNPE became popular is because the therapy itself is based on experience. Medical doctors and oriental medicine doctors come to my class to learn SNPE because they treat patients without their own direct experience, but SNPE therapy is built on experience." **A-P**



Can you recommend any exercises for people who spend most of their time in front of a desk?

There are more than 30 exercise positions of SNPE, but I would recommend SNPE step one. The step one position seems quite simple, but it is powerful and highly effective for people with bad posture. SNPE does not require a large space or huge equipment, so many of the SNPE postures can be done at home or the office. Especially, if students studying for long hours in front of a desk do the SNPE step one for ten minutes, they will find themselves more focused and less fatigued after the exercise.



an international patent by inserting an arch sensor and magnetic cushion.

Are there any plans to expand the SNPE academy abroad in other countries?

Currently, people in countries such as America, Japan, England, China, and Germany are promoting SNPE, but not many. Mostly, preachers and priests who are doing missionary work abroad are trying to promote the therapy. However, as mentioned above, SNPE is a New Paradigm Exercise Therapy. The effect of SNPE has been proven by various clinical studies, and we have our own know-how when it comes to exercise therapy. SNPE has prepared much clinical research material hoping to gain a worldwide reputation in the near future. We expect SNPE will successfully represent our country as a unique Korean exercise therapy, performing as a main actor of the Korean Wave. SNPE books are being translated into English and German, and I

am also writing a series of books regarding clinical studies of SNPE therapy. Promoting and educating the whole world, not only Koreans, to become conscious of this exercise that helps maintain good posture is my future plan.

What are the future plans for SNPE?

It is very helpful to know how to prevent neck, shoulders and back pain before they appear. In terms of preventive medicine, SNPE is likely to gain a huge role. Currently, yoga instructors, pilates instructors, medical doctors, Oriental medicine doctors, and non-professional students are coming to SNPE lectures. It is critical for these people in various professions to learn SNPE, since they will help their patients or their own students to know the importance of good posture and exercise techniques. When more people get to know SNPE, it will contribute much towards cutting down medical expenses. **A-P**



BAREFOOT ORIENTED COMFORTABLE WALKING SHOES

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CREATED BY COMBINATION OF ORIGINATOR OF
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Website_ <http://www.snpe.co.kr/>





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Qigong: The New Age Yoga?

BY PRIYANKA SHARMA

At the center of almost of every ancient culture are several energy building and energy equalizing exercises, or mediation-cum-exercising routines, that have evolved over several centuries.

India has its Yoga and Tai chi is very popular in China. Qigong is an older generation of sequences of body movements that are graceful but which build inner mental focus as well as balanced abdominal breathing, which creates in the person the proverbial ultimate vital energy, referred to as the Qi.

Qigong, also known as Chi Kung, is the process of achieving the trinity of a relationship, consisting of the confluence of the spirit, energy and matter. Almost all martial arts believe the ultimate goal of all their practice is achieving the ultimate energy, or Qi. Ancient Chinese society practiced Qigong in several forms. Medically Qigong is used to prevent and cure several ailments.

To the martial artists, qigong is a practical training sequence to achieve all martial capabilities. Both Taoists as well as Buddhists follow it to achieve deep meditation.

All the various ancient streams were synthesized into the modern interpretation as introduced during the Cultural Revolution. However, four main types of training continue today – dynamic, static, meditative as well as external support aids. With dynamic training, the movements are well choreographed and seek physical as well as mental disciplines. Tai chi is perhaps one of the most popular of the methods. In the meditative type of training, a particular posture is maintained and visualization is made of philosophical concepts that keep the Qi moving within the body. In the fourth type of Qigong training, external agents are involved such as herbs, physical manipulation as well as interactions with living organisms. Ideally, qigong is composed of one or the other type of training.

Qigong is popular as Chinese yoga and has graceful body movements, focused mind set as well as very deep breathing that originates from the abdomen. The free movement of the energy will lead to vital energy, or Qi, that is effective as well as evolved. This ancient practice is what the modern Chinese athletes are fast adapting to in order to enhance their inner energy. The slow and graceful movements are fascinating athletes in far away California to help achieve the internal space gracefully and peacefully.

According to experts, when Qigong is

The free movement of the energy will lead to vital energy, or Qi, that is effective as well as evolved.

slow and graceful it is the modern Tai chi and in the faster methods it is tantamount to Kung Fu. Qigong is the typical feature of Eastern cultures that banks on the use of energy to create internal well-being. Most western cultures, on the other hand, concentrate on the mechanics or the creation of energy or matter and the mass it creates.

A typical Qigong procedure would involve a combination of the four training types from the meditative to the physical manipulation to help the body achieve both physical as well as mental peace, bringing about greater internal energy that is the core of our being. The West would call it vital energy, while the East sees it as the inner energy or breath that will lead the body to achieve the rightful path throughout our everyday lives. **A-P**

Students in Wales to Learn Chinese Soon

BY VINTI VAID

In the past several years and in the run up to the start of the new academic year, there has been a lot of activity happening at English schools in China.

Oxford and most of the leading British universities today have a presence in China, and almost one in twenty children is preparing for the Scholarship Aptitude Test (SAT) exams to enter the hallowed portals of British education in England or back home in Chinese campuses of these schools and colleges.

In the hallowed precincts of a true Welsh college, the presence of the Chinese language school is truly a measure of how things have progressed in the past decade and a half. This will set the precedent for the future as foreign language courses will soon become integral courses in the growing global environments. When most things from business transactions to critical surgeries are happening in real time, regardless of the separating geographic time lines, the global community is the future and it is for the student community to be better equipped to be able to handle the pressures of the changing world order.

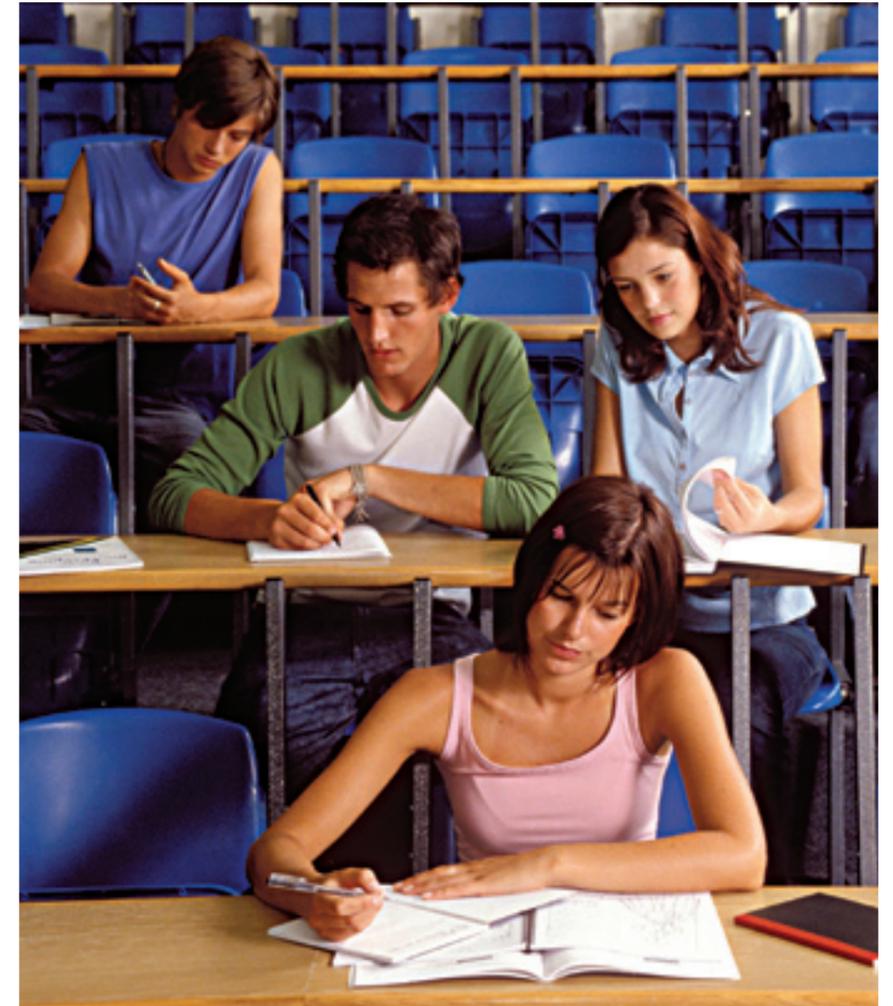
There is today an established dialogue on the need for collaborative education if the trend of students moving between the two countries is likely to grow. Experts believe there is going to be an exponential growth in the number of Chinese students coming to pursue high secondary and higher education. The need for Chinese speakers and tutors who can understand and address the sensibilities of overseas students is of course a necessity and the community along with the government is offering various avenues for the teaching, as well as student communities to gain further insight into the Chinese language and the culture.

The first week of March saw the begin-

Continued from Page 29

ning of one of the most interesting events happening at Llandoverly College. On St. David's Day, March 1st, the Prince of Wales inaugurated the new Confucius Classroom dedicated to aspiring to learn the Chinese language. The premises will be open to the local community as well and have come into existence through the efforts of the Confucius Institute at the University of Wales Trinity Saint David.

Over the past three years pupils at the college have been coached in Mandarin with ample support from teachers from China as part of the joint venture with the British Council. The new classroom will be



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A typical Qigong procedure would involve a combination of the four training types from the meditative to the physical manipulation to help the body achieve both physical as well as mental peace, bringing about greater internal energy that is the core of our being. The West would call it vital energy, while the East sees it as the inner energy or breath that will lead the body to achieve the rightful path throughout our everyday lives. **A-P**

only 14.38 percent during 2006 to 2009. It fell only by 2.2 percent in 2009 compared to the annual target 4 percent. Then the government forged ahead to meet the target for the next year, with a planned reduction per unit GDP energy consumption of 4.72 percent in 2010.

On March 5 of this year, Chinese Premier Wen Jiabao disclosed the draft of the government's 12th Five-Year Plan. It revealed that the government plans to cut energy consumption per unit of economic growth by 16 percent and to emit less carbon dioxide emissions per unit of economic growth by 17 percent respectively. The nation also aims to increase the use of non-fossil fuels from

8.3 percent in 2010 to 11.4 percent to raise the overall use of clean energy. This is part of the nation's wider plan to reduce carbon intensity by 40 to 45 percent by 2020 from 2005 levels. The Five-Year Plan also aims to slash emissions of major pollutants by 8 to 10 percent by 2015. The target for the last five years (2006-2010) was 12 to 14 percent.

The nonprofit international organization The Climate Group's greater China program director Wu Changhua said that the concentration of carbon dioxide should be kept under 450 parts per million, which is a bottom line to save the planet from catastrophic disasters, in an interview with China Daily.

While the nation lowered its growth rate target to an annual 7 percent from 11.2

percent during 2006 to 2010, many environmentalists are still worried about the possibility of meeting the goal of the Green China plan.

The environmental Non-Government Organization Greenpeace proposed that local governments should not exceed the growth target set by the top leaders during an interview with China Daily after the National People's Congress (NPC) in March.

NPC deputy Hu Weiwu, a professor from the Chinese Academy of Science, also mentioned that the country's energy intensity is 1.5 times higher than average level in developed nations. Therefore the country should put efforts towards improving its energy efficiency. **A-P**

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Sam Chambers

BY VICTOR FIC

Sam Chambers has been living in Greater China for over ten years, initially in Hong Kong and presently in the major port city of Dalian in Liaoning Province. Sam is the former East Asia Editor for Lloyd's List newspaper. After that, he became a major freelance writer focusing on travel and transport issues. His keen eye led him and his co-author Paul French, now living in Beijing, to examine East Asia's imports of black gold. The two journalists produced *Oil on Water: Tankers, Pirates and the Rise of China*. It examines Asia's demand for oil with a unique focus on its transportation, including the threat of piracy. Sam's explanations about this -- not often aired in the media -- might shock or provoke many.

He gave this exclusive interview on the oil imports and the transport factor to Victor Fic, our special correspondent for economics and politics.

East Asia's Most Vital Import is Black Gold — Oil!

Sam, you claim that *Oil on Water* is unique — how?

China's thirst for oil is one of the great untold stories of the 21st century. How this is straining energy supply chains is something few have looked at deeply. Also, our book takes readers across the world, following the physical movement of black gold from source to destination in a probing manner never done before.

What are your best qualifications for addressing the theme?

I have been living in China for the past 11 years covering specifically the shipping and energy fields across East Asia. I have met most of the leading oil majors, key shipping owners and energy-related government officials.

Summarize the pattern of East Asia's oil needs.

The regional trend line is about sourcing energy from further away, chasing every drop and paying top dollar.

Which countries import the most now?

Nowhere on earth has a greater thirst for oil than China. As countries develop, industrialize and urbanize, living standards rise, driving up energy use, usually oil. The prime example is here where oil consumption has grown by 8 percent annually since 2002, doubling between 1996 and 2006. Factories consume much. But the burgeoning urbanized consumer society is also glugging at rapidly increasing rates as families become car owners, switch on their newly purchased appliances and fly for holidays or business. Now China has approximately one-twentieth as many cars per person as the United States, or 35mn cars for 1.3bn Chinese as opposed to 185mn cars for 300mn Americans. But the gap is closing fast. In 2008 car sales totaled 9.38mn units in China, now the world's second largest car market after the US and projected to grow another 5 percent in 2009. The McKinsey Global Institute estimates that the former will have about 120mn cars by 2020.



When did China become an oil importer?

That was in 1993 and its foreign policy has changed dramatically ever since. Between 2004 and 2008, Beijing accounted for fully 40 percent of the total increase in world oil consumption, surpassing Japan to become the second largest total gas-guzzling nation after the United States.

How about the latest five-year plan?

China's dramatic build up of oil sources abroad and infrastructure at home is on a scale never before seen. It will only continue. Even with China's newly introduced fuel efficiency standards for cars and restrictions on driving in Beijing and other large cities, the demand will rise.

Its foreign policy has changed ever since because...?

There are now more than 800,000 Chinese in Africa, over ten times the number a decade ago — and not for safari. It also has serious ramifications for the oil producing Middle Eastern states and others in Central Asia, Africa and Latin America. It is a major consumer, seemingly immune to price fluctuations in per barrel costs and ever hungrier.

Why did coal and other fuels fail?

China has the world's largest reserves of coal, which accounts for most of its electricity. But coal does not power vehicles, and with the rising middle classes, the need for oil will only keep increasing. The car is the only status symbol here.

Is the country's oil future assured?

The speed of this build-up is something we have never witnessed before. Beijing's oil future is far more secure than most other net importers. Unlike other East Asian nations, China has avoided reliance on the Middle East — the renminbi is spread wide to ensure supply from every continent bar Antarctica.

But you observe that Beijing lacks the recommended 90 days of oil reserves. Why is it lagging?

It takes time and only became a priority in the past five years. To offer perspective, Dalian is a sizeable oil depot with huge new tanks. It has really cheap taxis, but to cross these tanks cost me 45 RMB — a long distance.

What is the danger of lacking reserves?

Imagine an earthquake, war or natural disaster. Or the Malacca Straits around Singapore, Malaysia and Indonesia is blocked, stopping over two thirds of China's imports. Manufacturing would halt and social unrest would follow.

What can it do to boost its back up supply?

China is dramatically building oil tanks. And the foundation for President Hu Jintao's greener economy is set.

How about India's figures?

Its imports only spiraled dramatically in the last couple of years. India is also urbanizing and industrializing fast. Oil imports will more than triple from 2005 levels by 2020, rising to 5 million bpd from the current 2.9 million bpd. It will chase China which now consumes close to 8 million bpd.

Japan's famous vulnerability on oil caused it to erect nuclear plants now proving to be faulty, correct?

It lacks significant oil or gas fields and must import over 95 percent of its oil by sea.

How about South Korea?

Seoul is similarly vulnerable with low domestic deposits but a growing manufacturing economy and urban conurbations demanding more oil. It has the sea on three sides and intransigent North Korea cutting off pipeline supplies via China or the Russian Far East. So South Korea must ship in over 97 percent of its oil.

Then we have little Taiwan...

The island relies on tankers crossing the South China Sea and entering the contest-



ed Taiwan Straits for 98 percent of its oil. Indeed, the growing rivalry for contracts among Japan, Korea and China and suppliers like Australia and Russia will escalate. Contentious energy rich areas in the South China Sea are flashpoints.

You cite the Somali pirates' defense — what is it?

In 1991, the Somalian government collapsed. Its nine million people faced starvation and ugly Western forces saw a great opportunity. Mysterious European ships appeared off the coast, dumping many barrels of nuclear waste. The coastal population suffered strange rashes, nausea and malformed babies. After the 2005 tsunami, hundreds of the barrels washed up and caused radiation sickness. Over 300 people died. Ahmedou Ould-Abdallah, the UN envoy to Somalia, says: "Somebody is dumping nuclear material here [and] also lead and heavy metals such as cadmium and mercury." Much is from European hospitals and factories seemingly passing it to the Italian mafia to dispose of cheaply.

What is the impact of this allegation?

When I asked Ould-Abdallah what is the European governments' response, he sighed and said, "Nothing. There has been no clean-up, no compensation, and no prevention."

Also, other European ships have been looting Somalia's seafood. We destroyed our own fish-stocks by over-exploitation and now target theirs. Over US\$ 300 million worth of tuna, shrimp, lobster and other sea-life is stolen yearly by huge illegal trawlers in Somalia's unprotected seas. The local fishermen are starving. Mohamed Hussein, a fisherman in Marka 100 km

south of Mogadishu, told Reuters: "There soon won't be much fish left." Somalis started piracy through desperation and realized it pays well, hence its escalation

How about the pirates in Asia's motives?

Money — and it goes back generations. Unlike Somalia, it is more a way of life.

As for readers interested in the oil market, please offer advice.

Invest now — oil prices will go up and up this year and next. [A-P](#)

I have been living in China for the past 11 years covering specifically the shipping and energy fields across East Asia.





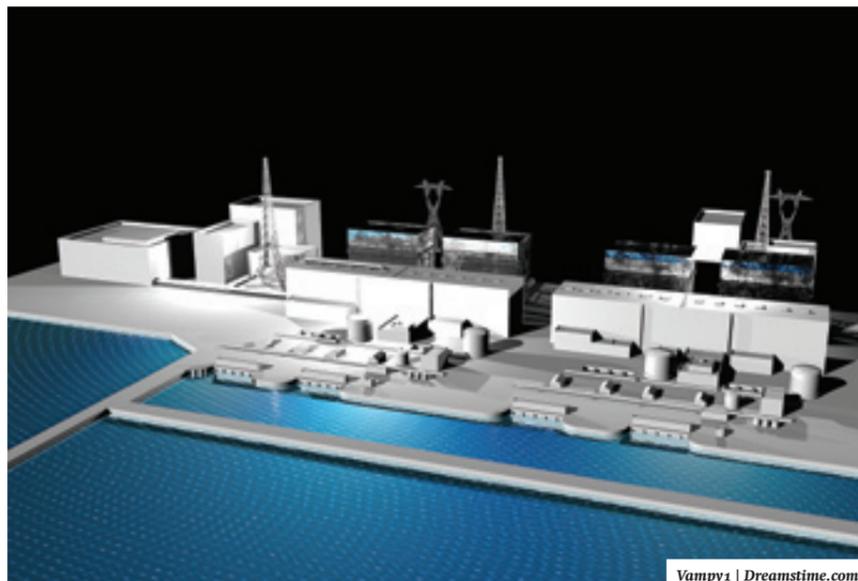
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Fukushima Disaster:

An End to the Nuclear Renaissance?

BY EUN YOUNG CHOUGH

The tsunami-damaged Fukushima Daiichi nuclear power plant in Japan has sent a worldwide wake-up call. Countries throughout the world are now turning their eyes to alternative energy that can replace this carbon-free energy source.



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The crisis is also raising anti-nuclear sentiment and leading nations are being called upon to reinforce and review their nuclear security measures and strategies. The Fukushima nuclear plant incident may also be threatening the “nuclear renaissance” of the 21st century, characterized by the advent of the revival of the nuclear energy source.

Since the United States Three Mile Island (TMI) nuclear plant accident in 1978 and the Chernobyl nuclear power station disaster in 1986, the anti-nuclear movement had gained worldwide support through to the end of the 20th century. Yet continuous efforts in this field by advanced countries, including the United States, have enabled the nuclear industry to focus on ensuring the security of nuclear plants as well as competitiveness with other countries. As a result, society’s preference for nuclear energy has increased, leading to even greater interest in investing in such energy.

Indeed, in the first decade of the 21st century, concerns about climate change, greenhouse gas emissions, and high fossil fuel prices have contributed to the preference for nuclear energy over other options. Nuclear energy releases less carbon dioxide—10g/kWh—than renewable energy such as solar power and wind power. Currently, 442 nuclear power plants are providing approximately one-fifth of the world’s electricity, 62 are under construction, and 158 are in the planning stages.

Yet the Fukushima disaster has led governments around the world to reconsider the need for alternative energy. In Germany, Chancellor Angela Merkel ordered the shutdown of seven of the country’s 17 reactors that began operating before 1980 as well as the testing of all nuclear generators. Italy and Switzerland similarly put a halt to their new reactor plans. France has the highest dependency on nuclear energy in the world, getting approximately 80 percent of the nation’s electricity supply from this power generation source. The country is also pushing its new generation of the 1630MW European Pressurized Reactor (EPR), made by Areva. French President Nicolas Sarkozy met with Japan’s Prime Minister Naoto Kan on March 31 to underscore the need for

common international safety standards for nuclear policy.

In the United States, during a March 30 speech at Georgetown University, President Barack Obama proposed reducing oil imports by one third by 2025. He also summarized new incentives to increase the production of biofuels, crude oil, and gas while calling for further development of alternative energy sources. The United States is home to 104 nuclear reactors—the most of any country in the world; 23 of these are the same design as the tsunami-stricken nuclear reactors in Fukushima.

Closer to Fukushima, South Korea, which depends on nuclear energy for approximately 40 percent of its energy, also responded to the incident. Korea annually produces 680 metric tons of spent fuel rods, and sources say that by 2016 South Korea will not have enough space to store used rods. As a temporary solution, the government announced it will establish waste storage facilities and select sites for construction.

Meanwhile, governments of emerging countries such as India and China announced they will continue with their previous plans for nuclear plant construction. Five days after the Fukushima disaster, China announced that it will suspend all new approvals for nuclear plants; however, on March 30, the media

Countries will certainly continue to take measures to find ways to lessen their dependency on nuclear energy.

reported that Xie Zhenhua—vice chairman of the National Development and Reform Commission—said that China’s plan for nuclear plant expansion will not be changed. China currently has 13 nuclear facilities in operation and more than 100 nuclear plants planned.

Whether the Fukushima disaster will signal the demise of the nuclear renaissance remains unclear, but countries will certainly continue to take measures to find ways to lessen their dependency on nuclear energy. PricewaterhouseCooper’s report “Renewable Deals” projected that, regardless of the exact outcome of worldwide developments, “the Fukushima events are likely to shift the energy policy balance towards renewables.” As the ramifications of the Fukushima event continue to unfold, a complete change in society’s approach to alternative energy seems unlikely, but it is certain that the world before and after the disaster will have markedly different views of nuclear energy-dependent countries. [A-P](#)

China to Increase Nuclear Power Capacity

BY LYNETTE WU

China amazed the world in rapidly becoming the second largest global economy, second only to the United States, surpassing both Germany and Japan.

Even during the global economic meltdown, China experienced tremendous growth which it is maintaining this year and is expected to continue doing so in the years to come. However, to support this growth, China has an urgent need to upgrade its energy infrastructure as well as comply with carbon emission reduction requirements and energy conservation.

Nuclear power is a major choice in the country’s clean energy production efforts due to its known stability advantages and capacity potentials. In line with this, China is set to beef up its nuclear power capacity, pouring in billions of yuan into several nuclear power projects in a bid to attain its 2020 target of 86 gigawatts from this industry.

These efforts into expanding its nuclear power industry are also in line with the country’s commitments announced during the Copenhagen Climate Change Conference. China promised to increase its non-fossil energy production to 15 percent, with 4 to 6 percent coming from nuclear power. The following provides a brief look into China’s nuclear power initiatives and how it will affect the region in the near future.

China’s Current Nuclear Power Capacity

China’s booming industries are powered by electricity generated from fossil-fueled power plants (83 percent) and from hydropower (15 percent). This heavy reliance on fossil fueled power, 80 percent of which comes from coal plants, is causing excessive air pollution, making China a very large contributor of carbon emissions on a global scale.

These power plants are supported by 13 nuclear power reactors, all of which are operational and using second-generation nuclear technology. However, these plants account for only 2 percent of China’s total energy generation. Plans to increase this capacity by 25 more plants are underway, in order to eventually reach the country’s target of 5 percent nuclear-generated power.

However, at least 50 percent of the nuclear power equipment used in these plants comes from foreign sources. China needs to increase the localization rate for nuclear power equipment manufacturing if it plans to increase capacity to 86 gigawatts. Aside from that, new reactors should also be upgraded from its existing second-generation technology by adopting the latest third-generation AP1000 design from Westinghouse Electric Company.

Government Support and Overall Impact

The plan to increase China’s nuclear power capacity is part of its 12th Five-Year Plan (2011 to 2015) to reduce carbon emissions and promote sustainable growth. The government is pouring in a total investment of 500 billion yuan, equivalent to US\$74.96 billion by the year 2015 and it will pour in even more investment until it reaches its goal by 2020.

The agency forecast that China would need to invest 250 billion US dollars in nuclear power by 2030 and would expand its share of global nuclear capacity to about 27 percent by 2050. Equipment manufacturers such as Dongfang Electric, China’s largest nuclear equipment manufacturer, are benefitting from this expansion program, with current orders already reaching 45 billion yuan, or approximately US\$6.7 billion.

Future Trends in China’s Nuclear Power Sector

China’s drive to raise its nuclear power capacity is a vital element for the success of its five-year plans to reduce harmful emissions. China will push through with these projects despite the growing fears gripping the world as they witness Japan struggling to avert a nuclear disaster following the worst earthquake catastrophe to hit the country in decades.

Yet the stage has already been set for the implementation of China’s additional reactors, this time using some of the world’s most advanced systems that are designed to increase power capacity by up to ten-fold. China’s capacity plan will increase targets gradually, starting at 80 gigawatts by 2020, 200 gigawatts by 2030 and 400 gigawatts by 2050. [A-P](#)

FURTHER READING:

- English People Daily Online www.english.peopledaily.com.cn
- Shanghai Daily www.shanghaidaily.com
- China Daily www.chinadaily.com.cn

COMPANIES MENTIONED IN THIS ARTICLE:

- AMI-Partners www.ami-partners.com
- Westinghouse Electric Company www.westinghousenuclear.com
- Dongfang Electric www.dongfang.com.cn

Powering China with the Power of Wind

BY ANURADHA SHUKLA

One of the most promising renewable energy resources that virtually has enormously unlimited potential is wind power.

Just like solar power, wind energy is virtually inexhaustible and its generation leaves minimal carbon emissions, making it a safe and clean alternative energy resource for power generation.

In European countries such as Germany, Spain, France and Denmark, support for wind energy development was unwavering, with governments supporting these developments with heavy subsidies. Now, wind power in Europe has matured to the point where it is economically viable, having become much more competitive with conventional power generation technologies.

China is on the verge of choosing between shifting towards cleaner and sustainable alternative energy resources such as wind power from conventional and pollution-causing fossil fuel-based power systems. With a growing power-hungry economy and population, China needs to double its energy consumption without further increasing its already high carbon emissions.

This predicament the country is facing entails increased power generation capacities which only alternative energy resources such as wind power can bring. Benchmarking the wind power initiatives in Europe, China will be investing heavily in developing wind farms which will be installed along the country's enormous coasts, plains and deserts – all suitable for wind energy systems.

The State of China's Energy Generation

Mainland China is currently powered mostly with electricity generated from power plants fired by fossil fuels. 80 percent of these plants use coal, a known source of enormous carbon emissions, while the rest are fueled by oil (2 percent) and natural gas (1 percent). Only 15 percent is generated by hydropower while the rest comes from nuclear powered plants. This heavy reliance on coal-fired power plants is taking its toll on the country's environmental conditions, which was translated by the World Bank as causing up to 6 percent economic loss.

According to the United States Energy Information Administration, China's coal-fired carbon emissions will continue to grow by at least 2.7 percent each year, having already surpassed the United States in carbon dioxide emissions. With this rate, China has already emitted enormous amounts of harmful emissions measured at 6.2 billion tons in 2006 and is projected to reach levels of over 11.7 billion tons by the



year 2030 – which is practically 52 percent of the world's total.

Environmental impact is not the only issue faced by China's energy generation industries. The continuously rising costs of coal and other fossil-fuels are taking their toll economically. This is also compounded by the fact that most of China's coal reserves come from the north or northwest, taking up half of its rail capacity and creating an enormous logistical problem that the country is facing.

China has no recourse but to beef up its renewable energy efforts with wind energy, thereby taking up the helm in this emerging industry. In line with this, the central government mandated its 2005 Renewable Energy Law that requires power generating firms to increase renewable energy capacity by at least 5 percent by 2010 and another 10 percent by 2020. This will be part of the country's extensive Renewable Energy Medium and Long-term Development Plan, and wind energy will play a vital part towards this end.

Heeding the call of the Global Wind Energy Council (GWEC), the Chinese Renewable Energy Industries Association (CREIA) and Greenpeace to change its policy for wind energy generation, China is taking a similar initiative of European countries such as Germany in regulating the tariff system for wind energy pricing. On top of that China will also be benchmarking Germany's policy of providing incentives to both local and foreign investors for wind energy development. Foreign wind equipment manufacturers, most of which have previously lost contracts to local equipment manufacturers, are now given incentives to enter the China market anew by working in partnership with local suppliers.

As a result, the tariffs set by the National Development and Reform Commission of China for on-shore wind projects will be fixed and based on the location. The prices will be based on the availability of wind energy resources in the location, as well as suitable conditions for construction. Coupled with the incentives poured in by the government, this pricing mechanism for wind energy development has made it more appealing and conducive for local and foreign investors – who look to be putting their bets on China's wind power development.

Status of Wind Energy Developments in China

China has naturally rich wind resources and ranks behind Russia and the United

States for technically exploitable onshore and offshore resource capacities. The latest wind energy resource assessment reported by the GWEC places onshore wind resources capacity in the country at 300 gigawatts, with another 700 gigawatts for offshore resources. Overall, China has the capacity of reaching 3.2 billion kilowatts of wind energy, with up to one billion kilowatts having the potential for further development.

However, only a fraction of these wind resources are being developed. This is being addressed by the Chinese government's 12th Five-Year Plan that will aim for rapid development of wind energy resources as a key growth component in China's economy. This can be achieved by continuously working on additional reforms in the nation's wind pricing mechanism as well as attracting more foreign investment.

Towards the end of 2010, China's installed wind power capacity can generate 41.8 gigawatts of electricity and has become the largest wind energy provider on an international scale. It has become unparalleled in the world according to the GWEC. To support this further, the permanent committee of China's National People's Congress required Chinese power companies to purchase all electricity generated by renewable energy suppliers.

In line with this, China's local wind turbine and component manufacturers are also increasing production and will work alongside the major foreign wind turbine manufacturers in these projects. Local manufacturers such as Dongfang Electric, Goldwind and Sinovel produce turbines of various sizes and capacities, ranging from the smaller 1.5 to 3 MW turbines to the larger 80 MW wind turbines.

Regionally speaking, Western China is featured as one of the key areas for development of wind energy farms and other renewable energy initiatives. In November of 2010 the provincial government of Gansu, working hand-in-hand with the National Energy Administration, completed the initial phase of the region's first 1 gigawatt wind power facility, and it is primed up to have a final installed capacity of up to 1.27 gigawatts by the year 2015.

The Future of Wind Energy in China

According to the Global Wind Energy Council (GWEC), China is all poised to become the largest producer of wind energy by the year 2020. By this point, China's installed wind energy facilities will have the capacity to generate up to 150 million kilowatts which is equivalent to 10 percent of the country's overall power needs. This is a step up over the 25.8 gigawatts generated in 2009 and 41.8 gigawatts generated in 2010, as reported in the China Wind Power Outlook 2010 report.

The publishers of this report include Greenpeace, the Chinese Renewable Energy Industries Association (CREIA) and the Global Wind Energy Council (GWEC). These publishers made an even more ambitious forecast for China's wind energy future, projecting up to 230 gigawatts of installed wind energy capacity. With this amount of wind energy generated, the country can now cut back on carbon dioxide emissions by up to 410 million tons and another 150 million tons from coal-fired power plants.

Foreign wind power equipment manufacturers are also renewing their efforts of entering the Chinese market by working in partnership with China's local corporations. Foremost among these manufacturers is Spain's Gamesa Corporacion Tecnologica SA, which recently signed agreements with local partners, particularly the China Guangdong Nuclear Wind Power Company and the China Huadian New Energy Development Company. This partnership is set to develop up to 600 megawatts of wind energy parks in China within a five-year period.

This project will make use of Gamesa's 2-megawatt turbines and will be installed in China's Jilin Province and in the Inner Mongolia Autonomous Region, which are some of the country's ideal locations for wind energy parks. The Spanish company is targeting 30 percent of its overall sales to come from China this year, which is double from what they earned in the country in 2009. This would be a big boost to the company, now that revenues from its own European home market have declined.

Aside from this, other wind energy projects will see further development, such as the wind power projects in Hami and another one in the Xinjiang Uygur Autonomous Region, with ten companies investing up to 4.3 billion yuan, or approximately US\$655 million into these projects. The government has already released these projects' preliminary environmental permits, giving them the go-ahead signal to proceed with the construction of the wind farms, which will generate a total capacity of 2 gigawatts.

China's need for additional energy capacities to power its continuously booming economy is a boon to renewable energy initiatives that will help reduce the amount of carbon emissions generated each year – a big percentage of which is generated by China itself. This example set by China should lay the groundwork for other global economies to follow, not only in terms of pollution reduction but also in each nation's efforts of becoming more self-sufficient in energy generation. [A-F](#)

FURTHER READING:

- Bloomberg www.bloomberg.com
- Wind Daily www.winddaily.com
- TreeHugger www.treehugger.com

COMPANIES MENTIONED IN THIS ARTICLE:

- Gamesa Corporacion Tecnologica www.gamesa.es
- Global Wind Energy Council www.gwec.net
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- China Huadian New Energy Development Company www.chd.com.cn

Taiwan Allows Chinese Investment in Technology Sector

BY VIBHU SAXENA

Taiwan's announcement, at the beginning of the month, to allow Mainland China to invest in its technology sector is another step forward following the implementation of the 'strait talks' that explored a mutually beneficial trade agreement which might overcome decades of political antagonism.

The establishment of the Economic Cooperation Framework Agreement, or the ECFA, on which most trade preferences are being developed, is a revitalizing road map for the development of the region.

The global recession of 2008-09 and the need for immediate solutions led to the development of stronger and better trade relations between the two neighbors. Those at the helm of Taiwan's administration have charted a new economic growth plan by allowing China to invest in Taiwan in selected sectors. Close to 192 items were offered for trading in non-sensitive sectors, such as automobiles and plastics. Taiwan has been a regular investor on the mainland with close to a US\$200 billion amount, while China has been able to invest US\$140 million in the island. This bias in investment is likely to be reduced following the March 7th economic reforms.

Taiwan's Ministry of Economic Affairs (MOEA) announced the following allowances: the manufacturing industry will allow 42 percent of mainland investments, followed by 42 percent in the services industry, while 24 percent in the public

construction sector will be opened for investments from China. However, most of the sectors are now open to Chinese investment despite high profile dissidence over the sensitive high-tech sector. The concerns of threats to national security are now being derided, however. Investments in routine automobile and plastic sectors are vital to China's manufacturing prowess, as without Taiwan's plastics, it would not be able to sustain the low cost pricing or higher quantum of productivity.

However, Taiwan is allowing foreign as well as Chinese investments following stringent rules that are to ensure the Taiwanese industry is well-protected. Across most sectors a maximum of 10 percent stake in the island companies and up to 49 percent in joint ventures in the new technology sector has been set. 100 percent fully owned Chinese ventures are not possible under the present investment rules. The overall give-and-take situation between the two countries has led to a symbiotic relationship and has brought greater growth potential to the region.

The scenario of mutual development opportunities between the two is definitely the way forward. However, Taiwanese ventures in China have not made any spectacular progress. Experts believe this is largely due to the wrong business models that Taiwanese have adopted in their mainland ventures. The handful of successes that some of the Taiwanese subsidiaries have had in the mainland show profits are possible with the right business model. In fact, some of these are amongst the highest patent applicants in China, helping China reach the coveted international milestone of maximum number of patent applications being submitted.

Even at the peak of the mutual relationship, Taiwan remains cautious with the technology sector as it wants to minimize the possibilities of all technology leaks, however. [A-F](#)

Continued from Page 33

suggested that 54 percent of these consumers allot great importance in keeping their financial information as securely as possible and would prefer channels that offer such security. Online travel services can leverage this information and align their own websites and online portals to make services most convenient for their visitors – and eventually make the sale.

Online travel services in the Asia-Pacific region need to develop their websites and online channels and have increased security, more convenient booking channels, better payment options and everything else that would make customer experience as exciting and appealing as possible. Such improvements can open the door for international expansion by increasing their chances of reaching out to a more global audience and increase market penetration. [A-F](#)

FURTHER READING:

- eTravel Blackboard www.etravelblackboard.asia
- eMarketer www.emarketer.com
- Thooz Talking Travel Tech www.thooz.com

COMPANIES MENTIONED IN THIS ARTICLE:

- Travelocity www.travelocity.com
- Expedia www.expedia.com
- AirAsia www.airasia.com
- Tiger Airways www.tigerairways.com



Kwoo Seoghwon

BY STAFF REPORTER

Since 1970, Seoul Industrial Electric Co., Ltd (SIECOM), has been a pioneer in the electric power industry in its production of equipment such as transformers, switches and fuses. With the 6 sigma movement and ERP System, a management system created by the company, SIECOM has created an innovative business culture and environment for their employees. Compared to many other companies, the company is unique because it produces a wide range of products and is always trying to develop new business items that correspond to the worldwide digital trend. The company is also working on digitalized products that have electronic and transmission features that can contribute to further growth of the electric industry in Korea. SIECOM is a worldwide brand and is exporting its products to countries such as China, Iran, Indonesia and Thailand.

Below are excerpts of the interview with the CEO of SIECOM, Mr. Kwoo Seoghwon, given to the Asia-Pacific Business & Technology Report.

Interview with SIECOM (Seoul Industrial Electric Co., Ltd)

Can you explain to us the products your company produces and its significance in the industry?

SIECOM is an electric power system company manufacturing electric power devices such as instrument transformers, switches, breakers and fuses. With 40 years of experience in producing electric power devices and technical skills that we have acquired over a long period of time, today our company is playing a leading role in terms of setting prices and quality in our range of products. Also, we are making devices that are used in distributions and are also producing distributions that are suitable for automation.

What is the key philosophy that SIECOM pursues?

SIECOM is not a company providing services to general consumers. However, we put emphasis on the balance between technology and values that focus on the safety of our consumers, so that our technology can enhance the quality of life of our customers.

SIECOM has been training its workers to be creative and future-oriented. What are some of the efforts SIECOM has done to pursue such a corporate culture?

Without passion and creativity, it is impossible to make valuable products. That is why our company is trying to create a learning environment for our entire staff, hoping that this culture will encourage them to possess overall technical skills. Through the habit of reading and debating, the potential of our staff members is growing while they are sharing a firm vision of the future as well. The horizontal leadership of our company encourages both management and employees to have faith in each other. By showing trust to our employees and supporting open management, our company has moved towards an environment where employees are assured of their manager's words.

Can you also explain to us the ERP system SIECOM adopted as a management system? How were the results?

ERP is used as a supporting tool all throughout production, manufacturing, sales and accounting systems. Thus, it is

Can you explain to us the 6 sigma movement SIECOM adopted as a management system? Has it been effective?

The purpose of the 6 sigma movement is to reach our customers with flawless products and services. SIECOM may not be operating at the same scale as multinational businesses, but each department of our company functions organically in order to provide concrete solutions for individual improvement and assessment. A noticeable feature of Korean companies which manufacture electric power devices is that they sub-outsource to supply companies that provide various parts. The supply companies can provide high quality parts for our products, but at the same time there is a high possibility of defection rates. As part of our quality management, we regard the assembly process and supply chains of our suppliers as one of SIECOM's own departments. With continuous management, our company is working hard to manufacture defect-free products, which is our main goal.



critical that many of our consumers participate. When ERP was first adopted, our employees were lacking in strategic thinking. Continuous trial-and-error was unavoidable in this scenario. But now, through management consulting, we are providing various educational opportunities that have helped our employees tremendously. When making fast and correct decisions, the ERP functions as a strategic tool and a significant innovative management tool. The result of this system has been great and has helped our company in a big way to grow.

What were some of the efforts SIECOM has made to correspond to the changing digital trend?

We cannot lead the market in ten years

from now with the products we are currently manufacturing if we are not constantly changing according to the latest trends. The products we are currently making are focused on simple devices, but the devices that we have to make in the future might need complicated network devices. We need to move from manufacturer-centered products to consumer-centered products. In the future it will be very critical to satisfy the needs of the consumers very quickly, and for that, diversified small-quantity manufacturing will be the key to success. What this type of trend needs is a synergy among electricity, electronics, machinery and telecommunication. In order to keep up with this trend, our company is providing various educational opportunities, encouraging

SIECOM has emphasized making contributions to the development of the electric power industry in Korea. What is SIECOM doing in this regard?

The main goal of businesses is to make profit. If there is no profit, the company has no reason to exist. In addition to making profit, our company is developing products and promoting production policies according to our customer's safety and needs. We believe manufacturing products with various functions that are also safe can satisfy the consumers, thus contributing to developing electric power.



employees to do more creative thinking and focusing on research and production systems that combine technology and quality.

SIECOM has also emphasized continual R&D investment. How is this important for the growth of the electric power industry?

Recently I read an article about SAM-SUNG TV losing first place in market shares due to other companies selling the same product at a lower price. When a company starts make money by selling products at a cheap price, it first develops technological skills and next it invests in designing the products. But the companies that do not follow by these rules have no choice but to be innovative to stay in the market. It is the R&D investment of a company that leads to innovation. This strategy is more than just developing technology; R&D investment is about presenting the vision of the business and inspiring innovation of the company. It is leading the company and market from the front.

SIECOM has been selected as an export-oriented small business company since 2008. To what countries is SIECOM exporting to, and is there any plan of expansion?

We are approaching the Middle East, East Asia and South American countries. In the Middle East, the main countries we are exporting to are Iran and Syria. Indonesia and Thailand are the countries we are focusing on in East Asia, and we are exploring the markets in South America at this time. Currently, we have established a branch in Beijing, and the branch is exporting Customer's Artificial Intelligence Switches (CAIS) to the Beijing Electric Power Company. Our company is the first Korean company ever to be qualified for a supply contract for this type of business.

Since being selected as an export-oriented company by the government of Korea, what have been your main achievements? Which countries are your key selected target markets?

After being selected as an export-oriented small business company, we received a range of support from the government of Korea. Normally, companies that do not sell general consumer goods cannot spend a lot of money on marketing. Along with financial and marketing support, the government provided a variety of solutions for us. These solutions assisted us to

expand the weight of export beyond the market of official demand, which can lead to the most significant sales in the near future. Our key exporter markets are Iran, Syria, Philippines, Vietnam, Thailand, Indonesia and China.

Do you have any plans to exhibit your products at international electronics fairs?

We are planning to exhibit our products at international fairs such as the ones organized by the Institute of Electrical and Electronics Engineers (IEEE) in the United States, Hannover Messe in Germany and Middle East Electricity in Dubai. In Korea, we have been promoting our products at the Seoul International Electric Fair (SIEF). SIEF is an international trade show in Korea which was created in 1994 that regularly attracts around 30,000 visitors and 250 exhibitors.

What are the future plans for SIECOM?

Along with the goal of manufacturing distribution materials, SIECOM is aiming to expand our company to diagnosis businesses and systems businesses. In the future, aside from developing equipment tools and materials, the key is to diagnose these materials and create solutions for networking. Less than 10 years from now, you will see SIECOM more often in the systems business.

Can you tell us how are your company's exports sales to foreign countries?

We are planning to export approximately US\$9 million worth of electric equipment to Syria. Last year, the bidding process started, and we are exporting the equipment this year. Also, we are planning to export feeder remote terminal units worth around US\$1.5 million to Thailand and US\$5 million dollars worth of distribution automation systems around May and June to the Philippines.



Problem-Solving Problems?

BY MICHAEL PAIK
MANAGING EDITOR



In March of 2011, at the time of this writing, the biggest story in this region is obviously the combined earthquake, tsunami and nuclear disaster brewing in Japan. More than 11,000 bodies have been recovered, but officials say the final death toll is expected to exceed 18,000. Hundreds of thousands of people remain homeless, their homes and livelihoods destroyed. Damage could amount to US\$310 billion — the most expensive natural disaster on record. The March 11 tsunami that slammed into Japan's northeast, wiping out towns and killing thousands of people, knocked out power and backup systems at the coastal nuclear power plant.

While my heart goes out to the victims, as well as the many heroes that are working night and day to solve problems in search, rescue and recovery, I also think of the many problems that could have been avoided, as well as the potential problems encountered by these men and women in solving these related cascade of crises, and I hesitantly offer some food for thought on these problems in solving problems.

First, a summary as of this writing:

As reported by Mari Yamaguchi and Yuri Kageyama of the Associated Press (AP), Japan's government admitted (at the end of March) that its safeguards were insufficient to protect a nuclear plant against the earthquake and tsunami that crippled the facility and caused it to spew radiation, and it vowed to overhaul safety standards. The struggle to contain radiation at the Fukushima Dai-ichi complex has unfolded with near-constant missteps — the latest including two workers drenched with radioactive water despite wearing supposedly waterproof suits. This unfolding drama has drawn increasing criticism of the utility that owns the plant as well as scrutiny of Japan's preparedness for nuclear crises.

"Our preparedness was not sufficient," Chief Cabinet secretary Yukio Edano told reporters. "When the current crisis is over, we must examine the accident closely and thoroughly review" the safety standards.

The Associated Press investigation found that Tokyo Electric Power Co. (TEPCO) officials had dismissed scientific evidence and geological history that indicated that a massive earthquake, and subsequent tsunami, was far more likely than they believed. That left the complex with inadequate protection against the tsunami. The mission to stabilize the power plant has been fraught with setbacks, as emergency crews have dealt with fires, explosions and radiation scares in the frantic bid to prevent a complete meltdown. The plant has been leaking radiation that has made its way into vegetables, raw milk and tap water as far away as Tokyo. Residents within 12 miles (20 kilometers) of the plant have been ordered to leave, and some nations (including Korea) have banned the imports of food products from the Fukushima region. Highly toxic plutonium was the latest contaminant found seeping into the soil outside the plant, according to TEPCO. Safety officials said the amounts did not pose a risk to humans, but the finding supports suspicions that dangerously radioactive water is leaking from damaged nuclear fuel rods.

Workers succeeded in reconnecting some parts of the plant to the power grid, but as they pumped in water to cool the reactors and nuclear fuel, they discovered numerous pools of radioactive water, including in the basements of several buildings and in trenches outside. The contaminated water has been emitting four times as much radiation as the government considers safe for workers. It must be pumped out before electricity can be restored and the regular cooling systems powered up. That has left officials struggling with two crucial but contradictory efforts: pumping in water

to keep the fuel rods cool and pumping out contaminated water. Officials are hoping tanks at the complex will be able to hold the water, or that new tanks can be trucked in. Officials from the Nuclear Safety Commission said other possibilities include digging a storage pit for the contaminated water, recycling it back into the reactors or even pumping it to an offshore tanker. The latest problem occurred when three workers trying to connect a pump outside the Unit 3 reactor were splashed by radioactive water that gushed from a pipe. Though they wore suits meant to be waterproof and protect against high levels of radiation, nuclear safety official Hidehiko Nishiyama said the men were soaked to their underwear with the contaminated water. They quickly washed it off and were not injured, officials said.

Last week, two workers were hospitalized with burns after they were issued ankle-high protective boots to walk into highly radioactive knee-high water. Nikkei, Japan's top business newspaper, called it "outrageous" that TEPCO had been slow to release information about trenches outside the reactors filled with contaminated water.

Chief Cabinet secretary Edano blasted TEPCO for a major miscalculation that saw company officials announce a wildly high radiation level at the plant, only to back away a half-day later, saying it had been an error. "This sort of mistake is not something that can be forgiven," he said. Prime Minister Naoto Kan reiterated in a speech to parliament that Japan was grappling with its worst problems since World War II.

"This quake, tsunami and the nuclear accident are the biggest crises for Japan in decades", said Kan, dressed in one of the blue work jackets that have become ubiquitous among bureaucrats since the tsunami. He said the crises remained unpredictable, but added, "We will continue to handle it in a state of maximum alert."

Kan has faced increasing criticism from opposition lawmakers over the handling of a nuclear disaster stretching into a third week. "We cannot let you handle the crisis," lawmaker Yosuke Isozaki said in parliament. "We cannot let you be in charge of Japan's crisis management."

Problem-Solving Problems

I've previously written a book on risk management, in the context of Korean conglomerates coming to grips with the risks of global operations. In it, I point out that Korean managers have three problems to overcome in problem-solving: first, there's the inherent bias towards the pushing up of information and responsibility to the "decider", which has its root in the hierarchical organization that is corporate Korea, where the "owner" makes decisions and everyone else simply advises him; second, there's the problem of flexible truth, in which the lack of accountability is further exacerbated by the willingness to blur the facts, both prospectively and retrospectively, according to political realities and agenda; and finally, there's the problem of mandate, which is related to the afore-mentioned two issues, but separate, as it refers to the ability, authority and aggressiveness of line managers "on-the-scene", who should be, but often aren't, delegated the power to deal with crises as they arise.

Having lived in Japan, I believe that Japanese organizations, which were, after all, modeled by the Koreans, aren't all that different, and perhaps these problems in problem-solving are surfacing in this crisis as well. I'm not able, given the information available to me, to make strong statements on this. Further, I'm sensitive to the fact that everyone is doing the best that he or she can, in a crisis of monumental proportions. Finally, I'm also hesitant to criticize, as an armchair observer, the heroes dealing with these problems, but at the same time, I cannot help but think of these questions, and whether processes, systems and protocols could have been better designed, keeping in mind the issues mentioned above.

Have "pushing-up", "flexible truth" and lack of mandate been problematic in Japan in relation to this crisis? I don't know, but as events unfold and information becomes available, it may be helpful to think on this, as preparation for future (inevitable) disasters in this region.

That said, I offer my sincere condolences to the families of the perished, and the victims of this unprecedented disaster in Japan, as well as my sincere admiration and prayers for the heroes dealing with the many, many problems cascading out of it. AP

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