SINGAPORE: A SMART CITY BLUEPRINT

How the city-state’s cleantech strategies are creating urban solutions for the 21st century
“Our decision to open a new research centre in Singapore was due, in no small measure, to the proactive role the Singapore government has played in developing its biomedical sciences industry”
Amgen chooses Singapore for new manufacturing plant

Biotech giant to build US$200 million new facility

A mgen, the world’s largest independent biotechnology company, recently broke ground on a new manufacturing facility at Singapore’s Tuas Biomedical Park.

Amgen anticipates investing approximately US$200 million (S$254 million) over the next few years to build this innovative new facility, which will be capable of manufacturing both clinical and commercial products.

The site will initially focus on expanding Amgen’s manufacturing capability for monoclonal antibodies. When fully operational, it is expected to employ 200 people. Yeoh Keat Chuan, Managing Director of Singapore Economic Development Board (EDB), was guest of honour at the ceremony.

“We are proud that Singapore will host Amgen’s first manufacturing facility in Asia,” he said. “This investment is aligned with EDB’s focus to develop higher-value-added sectors such as biologics, which provide good jobs and careers for the Singapore workforce.”

Madhu Balachandran, Executive Vice-President of Operations at Amgen said: “Singapore’s rich talent pool and friendly business environment made it an ideal place to invest in a world-class manufacturing facility and to underscore our global expansion efforts.”
AGC to set up regional headquarters in Singapore

Leading glass company chooses city-state to accelerate Southeast Asian business development

Japan’s Asahi Glass Company (AGC), a leading manufacturer of glass, chemicals and high-tech materials, has established its regional headquarters in Singapore.

Known as AGC Asia-Pacific, the new headquarters will tap into what the company sees as growing opportunities to supply glass, electronics, chemicals and other products for firms benefitting the regional boom in infrastructure building.

AGC, which is at the core of the AGC Group and part of the Mitsubishi conglomerate, foresees huge demand for roads, railways, bridges and other urban construction schemes in Southeast Asia.

AGC Group’s CEO, Kazuhiko Ishimura, commented: “By establishing a regional headquarters, we expect to accelerate business development in booming Southeast Asia, targeting a 30 per cent increase in regional consolidated net sales between 2012 and 2015.”

Leo Yip, Chairman of Singapore Economic Development Board (EDB), said AGC’s decision to locate its Southeast Asian regional headquarters in Singapore was a welcome one. “We are also pleased that AGC is leveraging on Singapore as its regional control tower to develop integrated solutions for its customers, building on its core competencies in glass, chemicals and electronics,” he said.

Since launching flat glass operations in Thailand in 1964, AGC has been developing its glass, electronics, chemical and ceramics businesses in the region. It now operates 19 companies in Southeast Asia and employs approximately 9,000 people.

PHOTO: AGC ASAHI GLASS
Singapore’s leading water research organisation, the Nanyang Environment and Water Research Institute (NEWRI), has opened a facility at CleanTech One in Singapore’s first eco business park.

CleanTech One is the first development to be completed at JTC CleanTech Park, a business park catering to ‘green’ firms. NEWRI’s new base there, alongside other key industry players, will help generate greater opportunities for interdisciplinary research and industry partnerships in the sustainability sector.

NEWRI’s four centres of excellence will now be housed under one roof. These focus on research in water management, waste management, membranes and applied environmental microbiology and bioprocesses.

Singapore is known globally for its use of technology to create a sustainable model of water management. Nanyang Technological University (NTU), which set up NEWRI in 2008, has been at the forefront of the city-state’s research and development (R&D) efforts in environmental and clean water technologies.

“The co-location of NEWRI in CleanTech Park will generate opportunities for interdisciplinary research and enable the clustering of industry players in the sustainability sector,” said Leo Yip, Chairman of Singapore Economic Development Board.

“The continued success of NEWRI will also strengthen Singapore’s research position as the Global Hydrohub.”

To support the key growth areas in Singapore’s water industry, NEWRI will be focusing on research in industrial wastewater treatment and the energy-waste-water nexus.

Over the next three years, it will study ways to clean water using less energy through the development of new membranes for forward osmosis and biomimetic desalination, wastewater bioprocessing with enhanced energy recovery, and quick optics-based technologies for real-time contaminant and pathogen detection.

“Gaining business insight through Big Data and analytics is critical”

Aerial view of CleanTech Park
Texas Instruments becomes first semiconductor company to install AutoStore automated warehouse system

Texas Instruments’ AutoStore is an industry first

Texas Instruments (TI), the fourth-largest semiconductor company globally in 2012, has installed an automated inventory management system at its distribution centre in Singapore to enhance the efficiency and reliability of shipments throughout Asia.

The US-based company is the first semiconductor manufacturer to install the AutoStore automated warehouse system, which is also the first of its kind in Asia.

By using state-of-the-art warehouse automation, AutoStore reduces the amount of space required for inventory. Goods are stored in bins within an aluminium grid structure, on top of which battery-driven robots store and retrieve products. They then deliver the requested goods to operator ports outside the grid.

Allowing four times as many products to be stored within the same footprint, the integrated design will support years of growth at TI’s Singapore centre.

Kelvin Wong, Executive Director of Logistics, Singapore Economic Development Board (EDB), said TI’s investment showed how companies could deploy material handling solutions to significantly increase efficiency and productivity, enhance competitiveness and up-skill jobs in the logistics operations.

“This is also a good example of how the logistics industry in Singapore can continue to transform itself and strengthen its position as a leading global logistics hub,” he said.

The newly automated distribution centre is a joint effort between TI and its logistics suppliers, DHL and Swisslog.

UMC invests US$110m in new R&D centre

Global semiconductor wafer foundry to expand Singapore presence

United Microelectronics Corporation (UMC) will open a new centre to spearhead research and development (R&D) efforts for the company’s 12i wafer fab manufacturing processes.

Its Centre of Excellence, set up with an initial investment of US$110 million (S$139 million), will undertake R&D collaborations with local research institutes such as Singapore’s Institute of Microelectronics.

One of the world’s top five semiconductor wafer foundries, UMC has two advanced 12i wafer fabs, in Taiwan and Singapore respectively. The company’s Singapore plant produces about 45 per cent of its global semiconductor output – electronic chips that are used in smartphones and tablets, cars, as well as industrial sensors and equipment.

The establishment of the R&D team in Singapore, will enable UMC to increase its plant’s output, in the process create more than 80 skilled jobs in 2013 alone.

Terence Gan, Director of Electronics, Singapore Economic Development Board, said: “We are delighted that UMC has chosen Singapore to carry out R&D activities for its speciality manufacturing processes. This centre strengthens R&D capabilities in complex manufacturing processes and adds to the base of higher value-added products that the Singapore electronics industry produces.”
INDUSTRY FOCUS

Cameron opens new aftermarket drilling systems facility

Leading oil and gas company boosts presence in Singapore

Leading oil and gas company Cameron has opened a new aftermarket drilling facility in Singapore.

While the site will primarily serve major shipyards and offshore drilling contractors across Asia, it will also provide aftermarket support for the firm’s global customer base.

It will also be Cameron’s regional site for the servicing and recertification of blowout preventers, critical pressure control equipment used in both surface and subsea oil and gas exploration.

Yeo Keat Chuan, Managing Director of Singapore Economic Development Board, was guest of honour at the event.

SEMICON Singapore returns for 20th year

Annual semiconductor industry event focuses on developments in microelectronics manufacturing

SEMICON Singapore, Southeast Asia’s largest annual gathering for the semiconductor industry, took place at the Marina Bay Sands Expo and Convention Centre. This year’s event focused on the latest technology developments for microelectronics manufacturing.

The agenda also highlighted the importance of educating a skilled workforce to drive future growth of the industry in Singapore.

Marking its 20th year in the country, SEMICON Singapore featured more than 100 exhibitors showcasing the latest processes, materials, tools and technologies used in the manufacture of today’s most advanced electronic products.

In addition to three days of exhibits, the event featured an agenda of more than 40 hours of technical and business programmes addressing critical manufacturing topics including front-end wafer manufacturing, advanced packaging.

Beyond the technical challenges facing the industry, SEMICON Singapore also addressed the significant issues of education and workforce development.
Chugai Pharmaceutical’s mission has always been, quite simply, to develop highly effective new drugs. This was the main driving force, for instance, behind our extremely successful launch of Actemra in 2005, the first antibody pharmaceutical created in Japan. Actemra is not only the first drug in the world developed to treat Castleman’s disease (a rare lymph node disorder), but it has also received attention as a new treatment option for rheumatoid arthritis.

Such success builds on our long history in the pharmaceutical field. Since our company was founded in 1925, Chugai Pharmaceutical has grown to be one of Japan’s leading research-based pharmaceutical companies and a world leader in biotechnology – notably, in antibody pharmaceuticals. Our decision to open a new research centre in Singapore last year was due, in no small measure, to the proactive role the Singapore government has played in developing its biomedical sciences industry. By 2015, it will have invested S$3.7 billion in biomedical sciences research since 2011. Such investments help pave the way for the biomedical research community in Singapore to engage meaningfully in industry-relevant research collaborations.

In addition, it enables this community to stay at the forefront of science.

Another very attractive resource is Biopolis, a cluster of research institutes that has brought together more than 1,000 scientists from more than 60 countries. Today, it is Asia’s leading hub for biomedical sciences R&D.”

“Biopolis is a cluster of research institutes which has brought together more than 1,000 scientists from more than 60 countries. Today, it is Asia’s leading hub for biomedical sciences R&D”
Singapore also serves as an ideal base from which biomedical sciences companies can drive commercial business growth in Asia.

Together, I believe these are some of the key reasons why so many leading companies around the world have chosen Singapore as a regional base for their research institutions; certainly, it played a part in our decision to open our latest research facility, Chugai Pharmabody Research (CPR), here in 2012.

Singapore’s first corporate laboratory in antibody engineering, CPR was set up with an investment of S$1.5 million. We have plans to invest a further S$200 million into antibody research in Singapore over the next five years.

CPR is actually our second satellite research institute in Singapore, following PharmaLogicals Research (PLR), which was established in 2002 as a joint venture. In the 10 years since we set up PLR, Chugai has received considerable support from a number of government agencies, namely the Ministry of Trade and Industry (MTI), the Economic Development Board (EDB) and the Agency of Science, Technology and Research (A*STAR), Singapore’s lead agency for fostering world-class scientific research and talent.

When it came to setting up CPR, Chugai again received strong government support in terms of the hiring of researchers, publicity and research activities, with both A*STAR and EDB offering assistance via direct introductions and listing job offers on their respective websites. What’s more, A*STAR jointly organised an Antibody Symposium in 2012 with CPR, which was attended by more than 200 researchers. Such opportunities greatly helped to boost CPR’s reputation in Singapore. Chugai is proud to be among one of the leading science-oriented companies the leading science-oriented companies to have strengthened their presence in Singapore. We’re also honoured by the presence of Sir David Lane, Chief Scientist of A*STAR, as the Chairman of the Board of CPR.

Moving forward, we are considering joint R&D opportunities with Singapore’s research institutions and look forward to continued support from A*STAR and EDB.

In terms of the research areas CPR is focusing on, we will utilise Chugai’s state-of-the-art, proprietary antibody engineering technologies to generate new antibody candidates with the potential of making significant improvements in therapeutic effects in diseases which were previously considered impossible to treat with conventional antibodies.

Our new technologies, called recycling and sweeping antibody technologies, are extremely important achievements in our more than 20-year history of activities in biopharmaceutical research.

I look forward to CPR carrying out further good work premised upon these antibody technologies to contribute to the treatment of diseases around the world.

ABOUT THE WRITER

Osamu Nagayama served as Chairman of the Board, Chief Executive Officer and Representative Director at Chugai Pharmaceutical Co Ltd since 28 March, 2012. He joined the company in November 1978 and has held a directorship there since March 1985. His previous titles include Chief Operating Officer, Deputy Chief Director of Development Planning, Managing Director, Vice President and Director. He formerly worked for Long-Term Credit Bank of Japan.
Singapore: giving healthcare companies a head start

With more than 30 of the world’s top biomedical sciences companies leveraging Singapore as a key home base from which to drive innovation, the city-state is now Asia’s fastest-growing bio-cluster. Here we profile two leading global healthcare companies that share its passion for innovative breakthroughs and excellence. Roche is the world leader in in-vitro diagnostics and drugs for cancer and transplantation; Merck, Sharp & Dohme which has an innovative portfolio of medicines, vaccines, biologic therapies and consumer and animal health products, aims to develop new medicines and future therapies that make a real difference to people’s lives.
Roche is the world leader in in-vitro diagnostics and drugs for cancer and transplantation. It is also active in other critical major therapeutic areas, such as neuroscience, cardiology, immunology and virology.

As an innovation-driven leader in healthcare, Roche aims to make a real difference to people’s lives by providing products and services to prevent, diagnose, treat and monitor diseases.

Getting established
Roche inaugurated its first Asia Pacific biologics manufacturing site in Tuas Biomedical Park in November 2009, marking Singapore’s first foray into high-value biologics manufacturing.

Dr Patrick Y Yang, currently Head of Pharma Global Technical Operations at Roche, led the firm’s first biologic manufacturing entry into Asia in 2006. At that time, Dr Yang was the executive overseeing manufacturing operations at Genentech, one of the world’s leading biotechnology companies and now a wholly owned member of the Roche Group. Dr Yang oversaw Genentech’s acquisition of Singapore’s first commercial-scale biologics plant from Swiss-based contract manufacturer Lonza. This was soon followed by the decision to build a second biologics plant in Singapore.

As Genentech’s parent company, Roche owns both of these world-class facilities in Singapore. With a combined investment of about S$695 million (US$500 million), the 12.6ha manufacturing site comprises microbial-cell and mammalian-cell facilities which manufacture innovative medicines. It has provided highly skilled jobs for approximately 300 people and indirectly created more than 1,000 jobs in supporting sectors.

The Singapore site is an important part of Roche’s global manufacturing network, which includes biotechnology facilities in California, USA; Penzberg, Germany and Basel, Switzerland. Roche Singapore Technical Operations was among the first operations in Singapore to produce licensed biotherapeutics using recombinant DNA technologies.
“Working with more than 30 leading scientists in Singapore allows Roche to tap in to the country’s close-knit research community and clinical research infrastructure”

The way forward
In April 2010, Roche set up a major new translational research hub in Singapore with a planned joint investment of CHF100 million (S$134 million).

Marrying world-class expertise from Singapore’s scientific and medical research institutions and Roche’s significant capability in translational medicine and clinical development, the research hub focuses on expanding knowledge of disease biology to develop new personalised treatment approaches.

Working with more than 30 leading scientists in Singapore allows Roche to tap in to the country’s close-knit research community and clinical research infrastructure. This integrated approach to better understand Asian disease biology is working well for Roche.

Singapore has shown that international companies can successfully improve their R&D productivity and cost efficiency by establishing new models of collaboration with country’s public research institutes, hospitals and CROs.

This combination of multidisciplinary public-private partnerships, government-led initiatives on translational and clinical research, and comprehensive infrastructure has created the foundations necessary for thriving drug development in Singapore.

For Asian and global companies in the pharmaceutical and biotechnology sectors, Singapore represents a vibrant global R&D hub that stands at the forefront of innovative solutions in the field of drug development and discovery.

Testimonial
“By producing important and truly innovative medicines in Singapore, we have an opportunity to help patients around the globe. I expect that Singapore will play an even more critical role in the coming decades as we advance in the fight against life-threatening diseases,” said Dr Patrick Y Yang, Head of Pharma Global Technical Operations at Roche.
**CASE STUDY**

**MERCK SHARP & DOHME**

Merck & Co, Inc, Whitehouse Station, New Jersey, USA ("Merck") is a global healthcare leader that is committed to improving patients’ health and wellbeing through an innovative portfolio of medicines, vaccines, biologic therapies and consumer and animal health products. The US-based company has a history that dates back to 1851 and currently operates in more than 140 countries across the world.

Getting established

Operating under the name of Merck Sharp & Dohme (MSD) outside the USA and Canada, the company established its first sales and marketing office in Singapore in 1993. Over the next decade, MSD expanded into manufacturing in Singapore, investing more than S$1 billion (US$0.77 billion) to establish two multi-product manufacturing facilities.

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“**The US-based company has a history that dates back to 1851 and currently operates in more than 140 countries across the world**”

Post-merger with Schering-Plough, MSD’s manufacturing presence in Singapore doubled and its operations extended into R&D through the Translational Medicine Research Centre (TMRC), which supports MSD’s global R&D efforts through a range of preclinical and clinical development programmes.
Positioning for long-term growth
Today, MSD’s 1,500 employees in Singapore work across R&D, manufacturing and commercial operations to deliver the company’s medicines and therapies to patients in Asia and around the world.

This breadth of operations in Singapore gives MSD a strategic presence in Asia and provides the opportunity for it to plan for long-term, coordinated growth across its operations.

In 2011, MSD further signalled its intentions for the region by committing to additional investments in local research activities and manufacturing over 10 years in Singapore as part of an agreement to expand its presence in the city-state. The agreement demonstrates MSD’s long-term vision for its operations across all facets of its business here.

The way forward
Asia presents itself as a dynamic and fresh playing field for the biomedical sciences industry. With the exponential growth of its market, companies seeking to succeed in the region need an in-depth understanding of local conditions and regulatory regimes.

With one of the fastest growing bio-clusters, Singapore plays an important role in helping companies expand in Asia. Through strategic partnership opportunities with a broad range of research institutes, corporate labs and public hospitals, companies will be able to better understand and navigate the complexities in the region.

Singapore also attracts the world’s top scientific and business talents, with the Agency for Science, Technology and Research (A*STAR) offering scholarships to nurture local PhD graduates from the world’s top universities, making it easy for companies to tap into the talent potential in the region.

As a leading global manufacturing site for innovative medicines, Singapore is an ideal location in which to develop new medicines for regional and global markets.

Testimonial
“Merck’s decision to relocate our Asia Pacific regional headquarters to Singapore is a bold testimony to our long-term confidence in and commitment to Singapore and the entire region,” said Richard T Clark, Chairman, President and CEO, Merck & Co.
Big data and analytics are the new drivers of growth in Asia’s burgeoning economies. New market insights and data are constantly emerging with the rising consumer demand. Thanks to an absence of legacy foot-dragging, which can slow the implementation of new analytics platforms in developed markets, companies in emerging markets are moving forward decisively to exploit analytics, particularly the data flow from ubiquitous consumer mobile devices.

This Singapore Session assembles a group of leading thinkers and analytical practitioners who review these issues daily. These individuals, who together represent a spectrum of approaches and backgrounds, pool their insights on the impact big data has on companies, particularly in emerging economies.

It is misleading, in their view, to think of big data as simply traditional business-intelligence analytics with faster computers and larger data sets. In reality, they assert, big data’s capabilities are shifting the nature and potential of analytics, enabling...
new insights and applications that were previously too difficult, time consuming, expensive – or even impossible.

Jim Davis, Senior Vice President and Chief Marketing Officer at SAS, points out that big data lets users make the same decisions more quickly, cutting analytical processing time from days or hours to minutes. This speed enables faster responses to changing market conditions and even to real-time transactional activity.

“Even a year ago, analysing the data required to optimise a marketing campaign for hundreds of thousands of customers would have taken half a day,” he said. “Now, that kind of analysis can be done in a couple of minutes.”

Distinguished academic Tom Davenport, a Visiting Professor at Harvard Business School, he agreed, citing the example of HSBC in Asia as one of the leaders in fraud management in the banking sector. With big data, he asserted, HSBC can combine information from all customers’ accounts and transactions with the bank, and make decisions about approving transactions in one second or less – while the purchase is still underway.

Another benefit of big data technology, according to Davenport, is that firms can make decisions less expensively – an important factor as companies experiment in new markets. Many companies, he said, see great potential in parallel server clusters running software such as Hadoop and other open-source tools. Some are exploring these aggressively as such tools can be much cheaper than the more traditional data warehouse environments of the past.

He also pointed out ways companies can make better decisions thanks to the new types of big data. For example, with social media data, a retailer would be able to understand a customer better and target a promotion more effectively. He described working with banks that are looking at social interaction across an omni-channel environment and adding that data to what they already know about the products and services that the bank has sold to these customers. Davenport said that gives them a much better indication of their likelihood of leaving the bank as a customer, or of responding to an offer.

Both Davenport and Davis agreed that big data could be used to predict demand for entirely new types of financial services and products to address the needs of ageing baby boomers, new materials or policies to
reduce failures in infrastructure.

Davenport cited the example of
Singapore’s SingTel, which offers voice
analytics which can be used to assess
voice data of language students as they
practise pronunciation. SingTel then
gives them an immediate grade on
how they’re doing, all over a mobile
phone. Bharti Airtel in India has a
service called SmartDrive, a new
offering that not only gives you turn-
by-turn directions, but also tells you
where traffic is concentrated, based on
signals sent from your mobile device,
and redirects you or tells you the
approximate arrival time based on how
much traffic there is.

Davis concurred. “For instance, new
markets like renewable energy that are
struggling to gain a foothold because
they’re not yet cost-competitive can
be implemented in consumer
products. Embedded sensors can
detect when a product such as a car
or a refrigerator needs service –
before you’re stranded on
the highway or the ice
cream melts.

“The possibilities are
unlimited,” he
said.
This is
precisely the
approach
taken by
Steven Miller,
Vice-Provost
(Research) and
Dean, School of
Information Systems
at Singapore Management University
(SMU). He stressed, however, that
the goal with analytics should always
be to generate useful information –
personalised recommendations,
guidance and incentives – that can
flow back to people and help them
with their consumer choices and social
interactions.

“Analytics methods and models
themselves need to be living,
in the sense that they need to evolve over time
as we test, monitor
responses and learn
how people really
respond – especially important as
companies explore
new markets and
interact with new
customers,”
he said.
According to Nathan
Falkenborgh, Head of
Analytics at Visa Worldwide,
Asia Pacific, Central Europe, Middle East & Africa, the proliferation of these new kinds of technology is starting to spur companies to explore some of the implications of data availability and the opportunities and responsibilities that come with it.

“At Visa, we use our network in combination with new technologies to help make commerce more secure,” he said. “That means making meaning out of disparate pieces of information in ways that no other payment system can – insights that help merchants, financial institutions and governments reduce fraud and overall risk to the payment system.”

The Living Analytics Research Centre (LARC), based in Singapore, is a joint venture of Visa’s transaction platform (VisaNet), SMU and Carnegie Mellon University. It acts as a laboratory for understanding how big data can assist both merchants and their customers – with fraud detection, for instance. Falkenborgh pointed out that VisaNet processes more than 150 million transactions per month in 120 countries, from South Africa to South Korea. By analysing patterns of real-time merchant data, Visa company CyberSource is able to detect and block fraudulent transactions.

Another LARC project uses social media and mobile information to recommend when and where mobile platform operators should place ads to maximise click-through rates, as well as the kind of service bundles that should be offered to customers.

“In travel and leisure locations, we’re using analytics to explore bundling and pricing of tickets, as well as how to incentivise customers to alter their itineraries in response to changing conditions, such as queue lengths or weather conditions,” said Steven Miller of SMU.

Miller also observed that in the telecommunications arena, vendors want to enable customers at the point of purchase to experiment with service bundles optimised for their calling and usage patterns, rather than generic low/medium/high-cost option packages. Delivering this degree of control to customers overturns the standard marketing paradigm.

What’s more, because big data can aggregate information over time and across geographies, its analytics can reveal context-sensitive preferences and choices. Going far beyond simple demographics, this ‘spatiotemporal’ analysis can predict how customers will behave at specific combinations of time and place – and guide development of products purpose-built for those intersections.

All the panellists agreed that in many ways, emerging markets are well positioned to leverage big data.

Emerging economies in Asia, Africa and South America are challenged by the availability of analytical talent and by messy transactional environments such as multiple bank terminals for Indian merchants. Nevertheless, the core business problems are similar to those in more mature markets, and mobility-related applications are exploding.

With less of a legacy mentality, these growth markets can implement big data solutions more quickly than can companies in America, Europe and Australia. A multinational bank, for example, might have a dozen CIOs to persuade, while a regional player in an emerging market can move more decisively.

On the other hand, traditional companies in developed markets have a deeper talent ‘bench’ as well as a more robust infrastructure. The ubiquity of mobile devices in emerging markets offers...
opportunities for creative strategies based on context-sensitive big data. In a large urban mall, for example, vendors can track the amount of consumers spend window-shopping, which stores they visit, and who they are with. They can infer whether the consumer is in a ‘don’t interrupt me’ rush or is browsing and open to recommendations and promotions. By adding data from phones’ accelerometers, a company can know when a shoe-store shopper actually sits down to try on a pair.

The use of analytics in such ways provides the opportunity to transform marketing.

But what about the constraints? All the panellists agreed that, in both emerging and mature markets, not enough trained analysts exist to exploit big data’s potential.

As Davenport pointed out, data scientists and ‘quants’ can be found in every major city around the world, but to be effective, they need to be comfortable with quantitative tools and also grasp exactly what data can do for the business. Yesterday’s ‘quants’ were often able to merely juggle data and generate models without being asked to find causative links or predictive patterns in the data.

Davis concurred, pointing out that while the use of big data and analytics has the potential to improve competitiveness through innovation, finding and retaining analytical talent remains the ongoing challenge.

“At SAS, we are not just committed to providing analytics that help to inspire innovation, we are also working with a number of universities to create programmes that teach students how to use analytics to make new discoveries,” he said. For example, SAS funds an intensive Master of Science in Analytics (MSA) programme at North Carolina State University that concentrates on real-world business applications; MSA holders earn a higher average starting salaries than do those with MBA.

“Innovation is the engine of economic growth. We want to be sure that the next generation is prepared to take on that challenge,” Davis said.

SMU runs its LiveLabs Urban Lifestyle Innovation Platform in conjunction with CapitalMalls Asia, Changi Airport Group and Sentosa Leisure Group. Hands-on student projects at outdoor and indoor ‘instrumented test locations’ are focused on customer behaviour, business operations, and social and contextual analytics – not maths topics. These messy, unstructured problems are the best way for students to learn what big data can do.

Steven Miller put it this way: “LiveLabs are not just advanced analytics efforts. At their core, these efforts involve deep levels of culture and mindset change which need to happen inside companies and within the universities, where the computer science-trained data mining mobile technology researchers are learning to work with researchers trained in social science and management science.”

Emerging markets are well placed to take advantage of these culture shifts and mindset changes as they leverage big data to shape business decision-making. Going far beyond traditional business intelligence, big data analytics enables faster, less expensive, better decisions, and even the creation of innovative new products and services that are causing marketers to rethink the marketing function and create a new way to understand our world.

For more information on this Singapore Session, click here

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Singapore Business News is a monthly publication that updates readers on the latest industry trends in Asia from a uniquely Singaporean perspective. Highlights include Singaporean business stories and special opinion pieces on opportunities in Asia, how global companies are leveraging Singapore to tap into pan-Asian growth opportunities and how Asian enterprises are globalising via Singapore. Singapore Business News also provides case studies on how Singapore partners businesses to deliver future-ready solutions.

Singapore Business News is a publication of the Singapore Economic Development Board.

Singapore: Future Ready articulates the nation’s aspirations to be a partner for global businesses as they develop their ideas for tomorrow’s solutions. Singapore does so by recognising the value of long-term partnerships, adopting a forward-looking approach, taking on challenges with a can-do spirit.

ABOUT EDB

The Singapore Economic Development Board (EDB) is the lead government agency for planning and executing strategies to enhance Singapore’s position as a global business centre. EDB dreams, designs and delivers solutions that create value for investors and companies in Singapore. Our missions is to create for Singapore, sustainable economic growth with vibrant business and good job opportunities.

EDB’s ‘Host to Home’ strategy articulates how we are positioning Singapore for the future. It is about extending Singapore’s value proposition to businesses not just to help them improve their bottom line, but also to help them grow their top line through establishing and deepening strategic activities in Singapore to drive their business, innovation and talent objectives in Asia and globally.

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