THiNKBIG
TECHNOLOGY FORUM

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"Innovation… business in the age of connectivity"

28th October 2010, Indera Kayangan Ballroom, The Empire Hotel & Country Club, Brunei Darussalam

Opening Address: "BSP Technical Innovations: the Story of Champion"
By Dr **Grahaeme Henderson**, Managing Director, Brunei Shell Petroleum

- BSP being the economic engine of Brunei accounts for more than half of the nation's GDP, a majority of export earnings and employs the highest number of people in the private sector. These achievements have only been possible by taking bold moves to advance technology- often before any other oil and gas producer in the world.

- Champion West remains one of the most advanced platforms in the world and produces 30% of Brunei Shell Petroleum (BSP) oil and gas production. Getting oil out from the well is a tedious and complex process but with the advent of technology in various operational fronts, the process has been made less complicated.

- Production from Champion in the first decade after discovery was relatively straightforward with wells being drilled to reach the most accessible deposits of oil and gas, which flowed with the naturally occurring underground pressure to the surface. By 1984, when the underground pressure started to decline, BSP injected sea water into the reservoir to raise the pressure enough to move the oil towards the production wells. From then on, BSP constantly ensures the use of technological innovation across all spectrums of production and discovery.

- Champion West is one of the most advanced platforms in the world and produces 30% of BSP oil and gas production. The support structure or jacket and the above water facilities were all built at the Kuala Belait construction yard- to ensure that expertise is kept in Brunei.

- The projects undertaken by BSP have resulted in a massive acceleration of local contractor knowledge and capabilities in platform construction, installation and maintenance with more than 30 Bruneian vendors involved in each project right across the supply chain.

- Equally important is the technology used to help BSP improve the performance of people who are the most important asset. The scale of telecommunications and computing at BSP demonstrates just how fundamentally important it is to operations. BSP has more than 1700 square metres of data centre capacity, microwave links for more than 300kms and more than 30kms of optic cable.

- High-powered computing capabilities have unlocked brilliant opportunities to the geologist and areas of greatest commercial potential to the engineers.

- BSP has built a track record as a 'company of firsts' leading the global industry in many technical areas.

- Continued investment in people and lead-edge technologies will be more important in the years ahead as BSP takes on even bigger challenges with the move into deeper water, and even more complex reservoirs in shallow water and onshore.

Session One: **"Embracing the Future: Global Trends and Challenges"**
Q & A with **Mr. Ken Wye Saw**, Vice President, Asia Pacific, Microsoft

Moderated by **Brian Koh**, Director, KR Consulting Pte Ltd

- The future does not always unfold in the way many think it would – there will always be surprises along the way. Change is affecting how we live, work and interact with people all around the world and change appears in different dimensions. –Society's structure has evolved – it began with a tribal structure that evolved into kingdoms and today into a structure of interconnected societies where common interest brings people together (a position that is facilitated by technology).

- The way technology has evolved has also changed over the past ten years from a command and control style (mainframe) into client or server systems and into interconnections today. Because of interconnections, lifestyle and the digital technology have emerged simultaneously. The change in social needs has brought about the change in technology; which, combined with changing influencers such as globalisation, technology adoption, technology advancements, ageing population and so forth, have propelled the evolution in technological innovation.

- Technological innovation drives innovation throughout the global economy, changing what we make, what we use, and what we do. Centers of technological innovation become centers of innovation across a broad economic spectrum for two reasons: innovation in technology is inseparable from the innovations that flow from it, and the re-gearing of a society for innovation of any kind has effects on law, capital, and business culture that spill across boundaries.

- All elements of technological evolution are coming together and are changing rapidly – computational power performance doubles every 18 months, storage capability doubles every year, connectivity is tripling every 6 months. There is a lot of pressure to scale up – resulting in consolidation across different spectrums of life, society and business, which has brought endless opportunities (including tapping into massive infrastructure as practiced by Google, Amazon and so on).

- One of the challenges of today is the abundance of data creation, which can often result in insights becoming increasingly difficult to obtain as well as changing the way we interpret and consume data. Insights create compelling experiences; simplify information analysis and so on. The whole industry is working towards virtualisation of technology that will increase business intelligence and will change the way we work. The evolution that comes in today is not planned – it just happens.

- On Cloud Computing: cloud computing comes into focus only when you think about what IT always needs: a way to increase capacity or add capabilities without the need to invest in new infrastructure, train new personnel, or licensing new software. Cloud computing encompasses any subscription-based or pay-per-use service that, in real time over the Internet, extends IT's existing capabilities.

- The infrastructure of cloud computing makes the whole environment more efficient and faster as you can use it to run services as a utility, but it is a step function – to optimise infrastructure make sure you have a platform to develop applications and to run applications on. It is important to consider that once consolidation takes place, responsibilities change – accountability is higher and you need to make sure that legislation etc is in place. When you talk about the cloud, there is also the aspect of confidentiality that makes for the whole issue of cloud computing.

- The next phase of cloud computing will include the consumer cloud and the enterprise cloud – i.e. government applications, government services, health care and banking (where the records are, and must remain, private).

- When you talk about embracing the future, integration with Facebook and Twitter is very strong. The recognition that the digital life has crept into your work life and cannot be separated anymore is rapidly taking place.

Session Two: **"e-Government: Connecting with the Citizens"**
An open forum discussion on strategies relating to how Governments can connect to their citizens led by:

- **Awg Hj Azhar Haji Ahmad**, Deputy Permanent Secretary, Prime Minister's Office and Overall Government CIO
- **Pg Sarimah Pg Latiff,** CEO, Infocomm Federation Brunei
- **Mr. Khoong Hock Yun**, Assistant CEO, IDA Singapore

Moderated by **Mr. Yahkup Menudin**, Chief Executive, AiTi

The Brunei perspective:

- The recent Civil Service Day marked a milestone turning point in the implementation of the e-Government – which His Majesty consented to in 2000. The project has a budget allocation of one billion dollars however, as HM mentioned, its usage so far is still unsatisfactory. Similarly, IT applications which are to facilitate the public dealings with the government are unsatisfactory when compared with other countries. The two biggest phrases in last week's Titah were: 1) increase in adoption and usage in e-Government; and 2) IT application in enabling and improving public service delivery.

- Many projects have been carried out since the year 2000, of which many centered around building IT infrastructure and back office systems. Some of the e-Government projects have been exhibited and rolled out and others are in the pipeline. Building e-Government successfully is not easy – it needs the right ingredients and approach.

- The focus of e-government over the next few years is not just putting more PCs, not just creating Websites, not just telling officers to use email as official communication – it is to reinvent the process that will allow government to provide more efficient and more effective service to its stakeholders (the citizens, the business community and the civil servants) through the use of ICT as the enabler.

- Central to the success of e-Government is the development of effective strategies to increase usage and adoption, as well as implementing the right process and installing the right IT application to support this business function – all of which should aim towards one guiding principle in the e-Government strategic plan (i.e. being citizen centric services).

- In the context of connecting with the citizens, in May this year UN experts were invited to identify areas of focus in the implementation of e-Government. The area of focus identified was e-participation (i.e. how the government engages with the citizen re. government initiatives). Our neighbours are seriously looking at e-participation to solicit positive feedback from the general public. It is evident that this is a good practice as most of the countries that adopt these are high on the UN e-government ranking.

- All e-Government project teams need to start thinking of the best practices of Project Management and Change Management to ensure the projects are successfully implemented and secure the required buy-in and adoption. Another challenge is the chronic resource shortage that has been mentioned over and over again in the last ten years. Many efforts have been undertaken to overcome this shortage. but itstill remains a significant issue. Many offices are looking towards long term capacity building and mentorship but that is not enough – to speed up deployment, we may need to think "outside the box".

- With the e-Government strategic plan launched last year, it is timely to view our implementation approach and identify quick wins within the next 12 months. Also, we should demand support from all internal and external stakeholders and come up with strategies that are sustainable.

The Singapore perspective:

- Singapore started computerising the whole government for efficiency in 1999 doing things right through the e-Citizen portal that transformed the way the public interacts with the government and enables much easier information and self service. The portal is positioned as the first-stop for government services on the Web.

- Singapore sees the importance of info communication as an engine of growth for the economy. The building of a vibrant infocomm ecosystem is key to supporting the vision of "An Intelligent Nation 2015" (iN2015).

- In building the ecosystem, three strategic thrusts have been articulated: encouraging sophisticated demand for info communication, fostering the creation of innovative services and knowledge capital, and strengthening Singapore as an economic hub. Innovation was identified as the key to each of these thrusts, and IDA's role is to continue to encourage

innovation and seed more opportunities for the creation and adoption of innovative solutions and services.

- IDA plays four key roles in driving Singapore's transformation into an Intelligent Nation and a Global City through info communication: developing the info communication industry, acts as the Government Chief Information Officer, transforming sectors through info communication and enriching the people sector through info communication.

- Singapore is now beginning to move into the area of e-Participation (i.e. citizen engagement) and going forward, it is apparent that communication has to be both ways.

- In thinking about what businesses and what companies need to do, IDA started looking at the infrastructure needed to create a more vibrant services market for more videos, mobility, connectivity, cost effective, network capability to be pervasive.

- Singapore learnt from some of the best practices from the European countries – such as in the adoption of open access network. The government views that effective open access through a structural and operational separation are key to the achievement of a vibrant and competitive next generation broadband market.

- Once completed, Singaporeans will be able to enjoy a richer broadband experience with more choices and at affordable prices. Businesses, large and small, will find it cheaper and easier to access ultra high-speed broadband, and be able to use infocomm more extensively to boost productivity and competitiveness. The Next Gen NBN will be a strategic enabler that will transform the way people in Singapore work, live, learn and play.

- In creating awareness to the public, IDA launched the infocomm iExperience centre to showcase the possibilities and benefits of Next Generation services to the public and business, which comprise of interactive and engaging exhibits designed to educate and excite visitors through a hands-on experience.

Session Three: **"Globalization of Technology Innovation**"
Luncheon Address by **Rebecca Fannin**, author, "Silicon Dragon"

- Professor Wong, National University of Singapore

- Many of the technology brands today such as Google, Facebook, YouTube and Twitter came out of Silicon Valley in California by graduates of top universities such as Stanford University and Harvard University.

- In the mid to late 1990s several successful computer technology related companies emerged in Silicon Valley in California. This led anyone who wished to create a start-up company to do so in Silicon Valley. The surge in the number of Silicon Valley start-ups led to a number of venture capital firms relocating to or expanding their Valley offices, which in turn encouraged more entrepreneurs to locate their start-ups there.

- The cluster effect in the capital market led to a cluster effect in the labour market. As an increasing number of companies started up in Silicon Valley, programmers, engineers etc realised that they would find greater job opportunities by moving to Silicon Valley. This concentration of technically skilled people in the Valley meant that start-ups around the country knew that their chances of finding job candidates with the proper skill-sets were higher in the Valley, hence giving them added incentive to move there. This in turn led to more high-tech workers moving there.

- In recent times, China has captured nearly 50% of the Venture Capital funds coming into Asia - with India in second place. The major driving force that is moving China forward is the whole policy around indigenous innovation and in creating products that will be leading edge in China today and will eventually help world standards.

- China is seriously moving from a 'made in China' economy to an 'invented in China' economy. The leading edge trend is not yet developed but China already ranks 5th in the world for the number of patent applications filed worldwide. China, being a huge growing market in the world, is primed to be Asia's very own Silicon Valley with its strong universities that lay emphasis on engineering and indigenous innovation.

- Nonetheless, some of the existing evils in China that continue to impede further development remain – including: censorship, lack of intellectual property protection, corruption and pollution.

- Asian start-ups are setting new standards in terms of developing original ideas based on local needs and exploring beyond country borders. Such entrepreneurs were achieving success by finding niches and benefiting from them, while also scaling back quickly and profitably. This, however, is not without its challenges as many entrepreneurs in the region lack the confidence that Silicon Valley has in abundance.

- The importance of incubators in helping entrepreneurs get started, with the iCentre in Brunei as a prime example, are imperative for entrepreneurs to find their feet and aid in the growth of enterprise. The culture embedded in Silicon Valley 'you can fail and you can start all over again' should be encouraged in Brunei.

- Innovation cannot be manufactured and creativity has to come from an original source. Tech entrepreneurs need to set realistic expectations, keep the pace and find the right business model. With such a fast growing market, many entrepreneurs tend to go for everything which does not always pan out well. It is also important to think outside the box and that it is a challenge that can reap huge benefits when overcome.

Session Four: **At the Heart of Innovation: "Delivering World Class Technology in Brunei"**

An open forum discussion on learning and applying new technologies to business led by a leading industry figures

- **Mr. Kevin Walsh**, Chief Technology Officer, Oracle Asia Research and Development Centers
- **Mr. Idris Vasi,** Group CEO, DST Group
- **Dato Paduka Dr Omar Khalid,** Vice Chancellor, ITB

Moderated by **Mr. Keeran Janin**, Founder, Expansys Technologies

The global and regional perspective:

- Innovation is about sharing and collaborating staying persistent with the capability of continuously realising a desired future state. Innovation is not just about thinking of new ideas – it should be about making them happen, which often comes from repeated failures that evolve and recombine to become a success.

- Oracle drives many innovations through partnerships. Oracle is the number one leader in many key segments of the IT industry – such as database, development language (Java), CRM, Retail etc.

- Oracle was founded thirty years ago by Larry Ellison who saw the opportunity to commercialise the relational database. Today, Oracle Corporation is the largest enterprise software provider in the world and the driving factor of Oracle's success lies in innovation.

- Oracle is the first software company to develop and deploy 100 percent internet-enabled enterprise software across its entire product line: database, business applications, application development, decision support tools and systems. Oracle continuously leverages these innovations into new Industries, regions and technologies.

- On R&D investment, Oracle spends over US$4bn each year R&D and has acquired over 65 technology companies since 2005 to meet customer demands. Oracle integrates technologies and products of acquired companies to create a more complete product offering and leverages on its global innovation networks to capitalize on this investment.

- Essential Elements of innovation are: infrastructure, investment, ideas, information flows and interconnection. The business culture of innovation has to respect people's intellectual property, share things that create mutual benefit and has to be frictionless with an emphasis on community.

The Brunei perspective

- Telecommunications is a tremendous enabler and acts as a platform to deliver all sorts of services. If a country is lagging behind on telecommunications infrastructure development, other businesses in the country would also be disadvantaged.

- Greater mobile penetration and greater Internet access generally goes hand in hand with greater economic development. The best resource to build a robust business culture lies in people.

- As an observation, there is a level of entrepreneurship in Brunei and to promote entrepreneurship more effectively, Public Private Partnership (PPP) has a role to play. Companies like DST can play a part, but the government has to play a part as well. Private and public companies need to do more in terms of driving entrepreneurship and innovation.

- ICT plays a big part in country transformation. The Brunei government's Vision 2035 and, therefore, ICT plays a role. The ICT sector will be a significant driver in how successful Brunei is in driving entrepreneurship and in creating companies, values and wealth outside the oil and gas sector.

- In terms of innovation, DST is looking at cloud services: data centre, e-learning, e-government, systems integration and video collaboration opportunities.

- Brunei is an ideal place to develop a data centre due to various factors, such as: affordable real estate, inexpensive energy, a stable political environment and being relatively free from natural disasters. Brunei can also be a secondary or backup data centre for disaster recovery purposes – perhaps that's how we could start off.

- Going forward, Brunei should look at look at maximising value added services such as maximising mobile applications – an area that has an existing level of entrepreneurship and which is continuously expanding and evolving. Brunei can look at driving and creating more entrepreneurs in the mobile applications area or value added services or combining the two with social networking, which is a huge thing for online gaming.

- To enable all this to come into place, DST is continuously upgrading network capabilities through capacity and bandwidth improvement. The recent migration on mobile broadband from 7.1 max to 14.4 max and migration from 2g to 3g to 3.5g is a testament to DST's serious commitment.

Comments:

- Universities in Brunei can truly become centres of innovation through the right funding, the right mechanism, through partnerships and so on. ITB's strategic plan is to develop undergraduate and post graduate degree programs; to expand research capacities in areas of national priorities and to introduce Masters and PhD programs to enhance research capabilities by 2011.

- Lecturers are the drivers of innovation. ITB is working to ensure that innovation is funded and has developed a system that can facilitate innovation – an example of this may be to open an incubation centre.