

Building Skilled Workforce – A Shared Future

Chapter 1: Resilience - Man never made any material as resilience as the human spirit

“Character cannot be developed in ease and quiet. Only through experience of trial and suffering can the soul be strengthened, ambition inspired, and success achieved “

- Helen Keller

PETRONAS went through abundance of ups and downs to get where she is at present - from literally a non-existent entity in the early 1900s, later formed in the 70s to manage Malaysia's indigenous hydrocarbon resources, and today as an active integrated Oil and Gas global player.

PETRONAS was incorporated on 17 August 1974 with insurmountable responsibilities entrusted by the Government of Malaysia. PETRONAS was relatively young and very green then when compared to seasoned players such as Shell and Esso, two of the seven sisters, whom their presence in the country's Oil and Gas industry was as archaic as the century old Shell's Grand Old Lady of Miri – the country first oil well. Not entirely familiar how to find, extract and value add the black gold, PETRONAS needed to play an intense catching up game in order to be an effective resource manager as well as a competitive and respective local player to these companies; especially when Shell and Esso had significant first-mover advantage, i.e. more than 6 decades, in the country's Oil and Gas landscape.

PETRONAS' thirst to partake in varied aspects of Oil and Gas value chains – from exploration, extraction, production, refining, marketing etc. within the short span of time since her incorporation, compelled deployment of multiple pronged approaches in building learning and capability of her people. To supplement her initial and small crew of loyal, passionate and fully determined capable former government servants hailed from key government agencies for example Central Banks, Attorney General offices etc., PETRONAS brought on board returning scholars with degrees in engineering to learn and lean over the shoulders of experienced experts and expatriates. The wealth of learning and capability development opportunities in PETRONAS was plentiful, largely contributed from PETRONAS' relentless and continuous efforts domestically to catch up with other Oil and Gas giants. PETRONAS' commitment to polish the greenhorn was evident through the many learning and capability development arrangement made. Marketers and engineers were also sent out to be attached at partners' offices and facilities to learn the ropes and trades. PETRONAS became haven for her staff to experience learning whilst on the job – a commitment that PETRONAS initiated and sustained.

As growth was only her business option, PETRONAS crafted and put in place a structured learning and capability development master plan to sustainably churn capable resources to support her business imperatives. An apprentice school was set up in 1981 to prepare and develop operators and technicians for PETRONAS' facilities. Through MISC, PETRONAS also operates a world-class recognised training academy, Malaysian Maritime Academy (ALAM) that is dedicated to providing highly-qualified graduates in the maritime industry. Soon after, the management training institute, PERMATA later named PETRONAS Leadership Centre (PLC) followed to offer wide range of management training. Scholarships were given out to qualified secondary school students to pursue undergraduates studies in

Engineering, Accountancy, Law etc. in local and international top universities. Recognising PETRONAS' desire to develop engineers, Ministry of Education, Malaysia invited PETRONAS to set up an engineering university. University Technology of PETRONAS (UTP) was incepted in 1997 and the rest as they said was history.

PETRONAS' resilience and commitment to take a chance with the greenhorns to carry out her insurmountable responsibilities paid off. Soon enough her greenhorns demonstrated what they were capable of as evident through numbers of business milestones PETRONAS independently chalked up in less than 10 years of her incorporation, for instance:

- 1975 - PETRONAS' marketers traded her first crude
- 1980 - PETRONAS Carigali drilled its 1st appraisal well at 1st Gas Field, Duyong
- 1981 - PETRONAS' 1st service station commenced
- 1982 - 1st Oil Field, Dulang discovered by PETRONAS Carigali
- 1983 - PETRONAS' 1st refinery. PETRONAS Penapisan (Terengganu), was on stream
- 1983 - PETRONAS' and Malaysia's first shipment of LNG was successfully flagged off from Tanjung Kidurong port, Bintulu, Sarawak

PETRONAS' business grew momentum in the midst 80s. The profits generated from her initial breaks were reinvested to expand the company further in upstream, mid-stream and downstream sectors, local and overseas. The risk she took paid off. PETRONAS' complete portfolio of Integrated Oil and Gas Company and global quest took shape within the next 8 years through the following key milestones:

- 1984 - PETRONAS' 1st Peninsular Gas Utilization project took off
- 1989 - PETRONAS inked her first Petrochemical - MTBE and Polypropylene - projects
- 1991 - PETRONAS awarded her 1st international PSC by the Government of Socialist Republic of Vietnam

PETRONAS manning multiplied in many folds – across global diversity. Expertise developed was exported to the international fronts and also to assist partners and other players.

Today, PETRONAS continues climbing up Fortune 500 list and is recognised as the new seven sisters – an achievement gained through hard work and labour, and not a walk in the park.

Chapter 2 : Learning Organisation – Excels for those who are flexible, adaptive and productive.

“When any real progress is made, we unlearn and learn anew what we thought we knew before.”

- Henry David Thoreau

The coverage of PETRONAS learning and capability development is comprehensive. To prospective talents, opportunity to learn and excel is available even before employment. Scholarships were awarded to qualified students to pursue relevant courses. UTP and INSTEP students as well as PETRONAS scholars are also exposed to co-curriculum activities and short courses to develop their soft skill competencies e.g. leading team, planning and implementing, and etc. to name a few. Staff are further exposed to structured

learning and capability development programs upon joining the organisation and progressing in their career. Staff and superior can actively participate and take charge to their close competency gap – be it in functional, business or management skill - provided through the 10%:20%:70% learning and development approach. As a learning organisation and construed nowadays as one of PETRONAS' norms, staff are often 'repaying the investment' and contributing back towards learning by becoming line trainers, mentors, coaches, adjunct lecturers etc. To-date, majority of learning programs designed, developed and trained were crafted and put together by PETRONAS' very own resources – learning and line professionals. PETRONAS learning institutes have been the vehicles and partners facilitating the consistency in the design, development, delivery and evaluation of these learning programs.

Chapter 3 – Economic Transformation: Impetus for continuous change and opportunity

“Change is the only constant. Hanging on is the only sin.

- *Denise McCluggage*

When PETRONAS was drafted together with other private and Government Linked Companies (GLCs) to support Malaysia in the latter's quest to become high income nation by 2020¹, 12 Entry Point Projects or in short EPPs for Oil, Gas and Energy National Key Economic Areas (NKEAs) were identified. 5 out of which are directly related to the nation's Oil and Gas Industry, hence, PETRONAS' business agenda namely:

- Enhanced Oil Recovery
- Small Field Development
- Intensifying Exploration Activities
- Regional Oil Storage & Trading Hub
- Unlocking Premium Gas Demand

Pursuing them is timely to unlock the company's pending business economic impasse. Monetization of small and stranded oil and gas field, enhanced oil recovery (EOR) and re-gasification projects have become feasible and attractive with introduction of innovative business solutions. The innovativeness introduced in pursuing these EPPs is a display of PETRONAS' reimagining energy – dare to challenge the norm, dare to be different.

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Signifies with increased of per capita income from US 7,000 today to USD 15,000 by 2020, GoM ETP October 2010

Reimagining energy did not pause beyond unlocking the business economic impasse. The partnership PETRONAS inked for the above EPPs by and large is extended beyond financial and commercial purposes. The partnership is leveraged to help building learning and capability development of skilled workforce and in doing so to further strengthen Malaysian's education brand – an arrangement that is aligned to learning and capability related EPPs i.e.

- Developing Capability and Capacity in Oil Field Services through Strategic Partnerships and JVs – an EPP that is also identified under Oil, Gas and Energy NKEA
- Building an advanced engineering, science, and innovation learning cluster as well as championing Malaysia's international education brand – 2 EPPs identified under Education NKEA.

Shared commitment between PETRONAS and her business partners to build skilled workforce is apparent and evident through a number of collaboration agreements on learning and development pursued and efforts to date.

Take EOR for an instance where PETRONAS and her Production Sharing Contractors (PSCs) are committed to extract 166kbd of hydrocarbon via the EOR method by 2020. To deliver her part of commitment, PETRONAS has recently renewed for another 5 years alliance arrangement with Schlumberger to further intensifying effort in developing capabilities and expertise in EOR. This commitment includes knowledge transfer to continuously enhance UTP and INSTEP value propositions, capability development through on job attachment opportunities in Schlumberger's offices and operations as well as alliances in EOR related projects of domestic and overseas production.

Thus far, each initiative is progressing well and very much on track. Involvement by everyone to ensure success of the partnership is immensely encouraging. PETRONAS and Schlumberger hope that they would be able to repeat success of their earlier collaborative effort i.e. Accelerated Capability Development for Petrotechnical Professionals, in this latest undertaking.

Similar learning and capability development arrangement is also deployed in pursuing the small field development. On top of pursuing the financial, commercial and business goals, PETRONAS and her business partners are in sync to build skilled workforce not only for small field development but also to cater requirement of the Oil and Gas industry. This commitment solidified through alliance agreements that PETRONAS inked with Sapura Crest, Technip, Kencana, Baker Hughes and Petrofac to:

- jointly undertake the design, development and delivery of capability development and education activities conducted at PETRONAS' learning institutions; and,
- promote the proof of concept and sustainable curriculum design at PETRONAS' learning institutions to meet the business requirement.

These partners will partake in knowledge transfer, research and development, industry attachments and student sponsorship & internship.

Thus far, UTP has managed to secure commitment from Oil and Gas companies to sponsor professional chairs and be involved in the adjunct lecturers programs as well as to provide placement for internship programs. The internship programs will serve as a strong tool to

assess the knowledge, skills and competencies of the students and further enhance their employability.

Notwithstanding the establishment of strategic alliances with the service providers, efforts are also intensified to expand industry players' collective involvement in developing skilled and competent workforce for the Oil and Gas industry for the country and region. ExxonMobil, a long-standing player and partner in the domestic industry, has entered into a long term agreement with INSTEP, for training of its frontline technicians and operators. This is another demonstration of ExxonMobil showcasing its parallel focus in building the skilled workforce. To-date, a sizeable group of ExxonMobil technicians and operators has been trained at INSTEP.

Apart from ExxonMobil, INSTEP has also formed partnership with several other international upstream and downstream Oil and Gas industry players such as Talisman, Petrofac, Idemitsu, BASF etc. Partnership between the industry players with the technical institute will advance knowledge and skill imparts to the industry workforce; hence, help accelerate acquisition of the same. INSTEP's commitment goes back as far as its inception in 1981 as it has been supporting PETRONAS and PETRONAS' Joint Venture Companies for e.g. BPC and OPTIMAL preparing ready operators and technicians for commissioning, operation and maintenance of their production assets.

PETRONAS plans to peruse and pursue similar arrangement she has in placed to-date towards intensifying capability of her workforce in the frontier technology such as Floating LNG, Shale Gas, Coal Bed Methane etc. Partnering with the technology's pioneers or experts such as Technip, DSME, Progress Energy, Santos, etc. will assist PETRONAS in leveraging opportunities to accelerate the capability development and learning the new trades.

Tangible benefits to be attained from the learning and capability development strategic alliances require some gestation period. To ensure progress is on track and continuous momentum, the prevailing features embedded in each of the undertaking include:

- i. Leadership Team – Each alliance is stewarded by a dedicated steering committee and championed by respective company's leaders,
- ii. Focus – Initiatives and commitment are tracked and monitored,
- iii. Learning and capability development pursued aligned to meeting business agenda and goal,
- iv. Learning and capability development approach taken is comprehensive i.e. covering from tertiary, technology to application,
- v. Support systems are provided in every step all the way.

Chapter 4 – Sharing is Caring

“Whatever we possess becomes of double value when we have the opportunity of sharing it with others.”

- Jean-Nicolas Bouilly

Robustness and consistency are among prevailing features in any of PETRONAS structured learning and capability development framework. To attain them, intense research and benchmarking put forward, complemented with rigorous review and challenging sessions during the entire span of framework development, pilot and roll out. The frameworks are continuously well-calibrated with the evolution of the industry requirements. Thus, a number of learning and capability development frameworks introduced for the past years has entrenched itself as the PETRONAS’ norm.

Some of these frameworks have since garnered popularity among PETRONAS’ stakeholders and partners locally and internationally. The recent ones are PETRONAS Occupational Skill Standard (POSS) and Assessment. These are key elements PETRONAS embeds in her PETRONAS Competency Based Assessment (PECAS) to prepare and develop her operators and technicians to have the necessary competencies. The robustness in POSS and PECAS Assessment gained the confidence of Government of Malaysia to adopt similar and apply them as the design of National Occupational Skill Standard (NOSS) for Oil and Gas industry.

Meanwhile, INSTEP is also in partnership with several government agencies to assist in the certification of relevant field authority. It has garnered credentials by Energy Commission (EC) as the center that trains industry competent practitioners as “charge-man” certified by EC. It is also recognised by the Department of Environment (DOE) and Department of Occupational Safety & Health (DOSH) to train practitioners on specific area and certified by these agencies respectively. INSTEP will intensify and build credential as a center that trains expertise for the industry. It has and will continue to pursue effort for accreditation on specific domains by industry accreditation body such as BTEC, OPITO, etc. to better serve the evolving needs of the industry.

Chapter 5 – Distinctiveness is a great trademark

“Every man and woman is born into the world to do something unique and something distinctive and if he or she does not do it, it will never be done.

- Benjamin E. Mays

Learning and capability development entrenched in PETRONAS leveraged through business opportunities and growth, pursued by the company throughout her lifetime, made PETRONAS’ learning institutes become more robust and relevant. These institutes will continue to push the envelope to re-imagine that by 2020 they will become the education and learning hub not only for PETRONAS, but also for her partners, stakeholders as well for others in the region.

It is envisaged that these institutes will have 4 distinctive offerings. They will become Centre of Learning Excellence equipped with state-of-the-art learning facilities, delivering robust curriculum design whilst maintaining niche focus areas and manned by credible and diverse faculty representation to produce multi-national graduates highly marketable. These institutes are also well-networked having strategic collaboration with external learning institutions as well as Oil and Gas industry players and service providers. These institutes could further assist companies to drive improvements in the business and achieve world class standards through capable technical and professional workforce.

In order to realize this aspiration, PETRONAS will continue to pursue along these 3 important levers - Academic Position, R&D Stewardship and Industry Engagement. Academic Positioning focuses on having strong academic credentials and attracting top talents. It is all about having an accomplished teaching faculty, world class learning facilities and obtaining industry recognition. The success factors for R&D Stewardship are all about having close interaction with industry to ensure relevance of research, clear research themes as well as excellent research test bedding facilities and strong commercialization support. Lastly, industry engagement is all about striking a winning partnership between academia and industry with both parties have clear and aligned objectives and expectations as well as clear and comprehensive partnership terms.

PETRONAS trusts that the aspiration she has on her learning institutes to build learning and capability for the country and region is not farfetched. It is the right thing to do to be able to support the rapid upstream and downstream growth that Malaysia and its surrounding regions will be experiencing in the next 10 years. Thus, garnering involvement and support from partners and other Oil and Gas players is vital to be on the right course. *Come together, right now ...to be able to build the required skilled workforce for the industry.*