

FROM LOCAL CHAMPIONS TO WORLD - CLASS PROFESSIONALS.

*A Transformational Roadmap to Developing and Moving Personnel in
the East African Oil and Gas Industry from Just Local Champions to
World-Class Professionals.*



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Acknowledgment

This eBook will never be possible without contribution of these three amazing friends of mine: Dr. Abdul Halim Abdu Latiff, Head of Center for Subsurface Imaging (CSI) at the Malaysian University Technology PETRONAS (UTP) in Malaysia; Dr. Mohamed Mahgoub, a Geophysics expert in the Gulf Countries, from his point of view and his wide experience in oil and gas since 1990; and my friend, Mark LaCour, founder of the Oil and Gas Global Network (OGGN).

Thanks a ton for supporting my campaign for raising the performance standards of work competence of the Tanzanian and East African oil and gas industry to become world-class and internationally competitive for the benefits of the business communities and countries.

Introduction

Massive oil discoveries in Uganda and Kenya, and world-class natural gas discoveries in Mozambique and Tanzania, have raised the East African profile and put the region on the global energy map.

The oil price fluctuation has exerted pressure in universities to produce top performing talents for the entire oil and gas value chain from upstream to downstream sub-sector of the energy industry.

Furthermore, with oil price being low for a long time and following technological advances in the oil and gas industry, companies now learn to place a premium on high productivity and high performance of the workforce.

But there is shortage in the people with skills and expertise to deliver the performance needed. The oil and gas industry is one in which productivity, safety and performance are important.

What if you aren't able to hire skills quickly enough or in sufficient volume to deliver the needed productivity, performance and innovation?

The answer is pretty simple: we increase employment costs and the local industry will be less competitive in the long run.

From Local Champions to World-Class Professionals is set out to answers a number of key questions about a new revolutionary approach to address skills shortage primarily in Tanzania and regionally in East

Africa.

1. What are the essential skills employers in the global oil and gas industry are looking for when they are trying to fill job positions?
2. How do employers in the oil and gas industry and education providers work together more collaboratively to raise performance standard of work competence of the oil and gas sector and propel it to become world-class, internationally competitive and prosperous for the benefit of all stakeholders?
3. How to prepare our graduates, who are facing a rapidly changing job market characterized by advanced technology, to become world class workers who can make bigger contribution at work or add more value to their colleagues and organization?
4. What are the best collaboration strategies between regional universities with oil and gas curriculum and their foreign counterpart to create world class graduates versus local champions?

Answers to these questions are essential for employers, colleges with oil and gas curriculum, private training providers, policymakers, and other stakeholders to make a revolutionary in training and development of local capacity and move them from just local champions to world class professionals who can do more at work.

How This eBook Can Help Your Business or Career

For the decision makers and professionals, this eBook can help you to:

- a. Reduce cost of employment and manageable risk.
- b. Increase local content instantly.
- c. Stay competitive and increase your productivity.
- d. Keep pace of technological advancement.
- e. Solve recruitment difficulties.
- f. Build motivated, flexible and loyal workforce.
- g. Train people in line with industry standard.

Knowledge and Skills in Demand: What Employers Need

Before I go too far, it is important to identify the types of knowledge and skills that employers in the oil and gas industry are looking for when they are trying to fill job position. This helps to come with human capacity development initiatives that produce and develop local capacity and move them from just users to world-class professionals who can make bigger contribution at work and in their countries.

This chapter also highlights expected skills and knowledge of those seeking traditional employment opportunities in the sectors so that they can prepare their skills, knowledge and capability to participate in available and upcoming oil and gas projects in East Africa.

Most of my interviews with subject matter experts and specialists noted that the kind of skills and knowledge required by oil and gas employers are both soft skills and hard skills set.

For example, in my interview with Dr. Abdul Halim Abdu Latiff, who is the head of Center for Subsurface Imaging (CSI) at the University Technology PETRONAS (UTP) in Malaysia, he says that:

“With the ‘easy oil era’ over, locating and extracting hydrocarbon from the Earth becomes more complicated every day as the target reservoir is shifted towards the

complex overburden, remote/inaccessible region and deeper crustal layers. While the knowledge in geoscience and engineering fundamentals are still relevant, fresh graduates must also be equipped to advance computational and simulation model techniques. These skills are required to solve and search for more oil and gas reserve that is not locatable through conventional development. In addition, the advancement of digital world also requires major industry players to hire fully-converse digital.”

Speaking on the type of soft skills set required by oil and gas employers, Dr. Abdul Halim Abdul Latiff commented:

“If we talk about general skill set, the top three needed for any oil and gas company are: complex problem-solving skills, critical thinking and creativity. In addition, as we move towards Industrial Revolution 4.0, the university needs to put more emphasis on other soft skill set such as collaboration (communication and team work), decision making and adaptability to technological changes. These skills are important to drive the industry toward the new era of oil and gas.”

In another interview, Mark LaCour of the Oil and Gas Global Network (OGGN) suggests that **continuous improvement** is critical in the oil and gas industry.

To stay ahead with disruptions in the industry such as regulation changes, technological development and the fluctuating oil price, young people should constantly learn new processes, new technique and new technologies. Talking about soft skills, Mark LaCour agreed that collaborative work is important in the industry. So, ability to work in team is an essential skill for future workforce. This is because the oil and gas industry workforce has changed from experts working alone to geologists, geophysicists and engineers working together as a team to share knowledge and exchange ideas on technical and business workflows.

In another chat, Dr. Mohamed Mahgoub, a Geophysics Expert in the Gulf Countries, from his point of view and his wide experience in oil and gas since 1990, says that machine learning, big data and blockchain are the new trends as the oil and gas industry embrace technology. Those technologies are still black boxes for the users, graduates and young professionals in the industry and they need to be urgently mastered and developed as essential skills for future jobs.

In my interview, all the three industry experts suggest that, due to the technological advances in the oil and gas industry, ability to use up-to-date technology remains an essential form of knowledge and skill to

transforming East African capacity from just users to world-class professionals and subject matters industry experts who can run the oil and gas facilities without experts' help.

Furthermore, effective communication skills, innovation, collaborative work, complex problem-solving will be essentials skills for oil and gas workers.

Collaborating to Build World-Class Workforce

Now, we have seen what the skills and knowledge searched for by employers in the oil and gas industry are when they are trying to fill positions. This chapter shows an innovative approach to developing local capacity in the oil and gas industry and move them from just followers to world-class professionals and independent focal points who can run oil and gas facilities without experts' help.

Dr. Mohamed Mahgoub, a Geophysics expert in the Gulf Countries, from his point of view and his wide experience in oil and gas since 1990, says, “Challenges and opportunities in Tanzania and East Africa shall be addressed through developing local resources, capacities and finding collaborative solutions and prepare East African students to be world-class graduates by upgrading their syllabus through partnership with international high-ranking universities, and training and developing young African professionals and moving them to professional specialists and subject matter experts.”

Generally, two approaches to addressing skills shortage and developing world-class professionals are: academic and industry approaches.

1. Academic Perspective on Addressing Skills Shortage

In the current global world, no one should ever work alone, whether it be in industry, government or academia. With the era of

Industrial Revolution 4.0 that is currently being championed by frontier industry, including oil and gas, academia around the world must be connected and must work together to address the complexity of the current issue and challenges.

From the academia perspective, the global oil volatility has exerted the pressure in universities to continually supply top talents to upstream and downstream businesses to solve sophisticated problems faced in the industry. In this regard, the universities must work together, sharing expertise, and complement each other's technologies and solutions in providing the suitable workforce for the industry.

Leading by example, Universiti Teknologi PETRONAS (UTP), a Malaysian university that focuses on the hydrocarbon industry, has established various network and partners around the world, notably from the similar niche universities such as Pertamina University (Indonesia) and French Institute of Petroleum (IFP, France), in building a better workforce for the oil and gas industry.

In my interview with industry experts, here are some local initiatives suggested for the East African universities to supply world class graduates who can make bigger contribution at work:

- i. Consortium between university and industry and world specialist organizations in education institutes or

universities to standardize the oil-and-gas students' curriculum for a four- or five-year program.

Universities, especially for oil and gas, should have a collaboration with internationally high-ranking universities in this oil-and-gas-related curriculum which have state-of-the-art technologies and related sciences. The collaboration may be through sharing expertise in science and technology, staff and students exchange and curriculum development. Partnership with those major universities is fundamentally needed to help in significant improvement in the education system.

- ii. The regional universities should have labs for seismic acquisition design, processing and interpretation software through collaboration with major seismic contractors who can donate the software for free or inexpensive attractive prices as in the case of some universities in the Arabian Gulf.
- iii. East African universities should have student chapters of EAGE, SEG and SPE Geoscience and Engineering societies if they are not yet existing. We trust our students and expose them properly since East Africa is attracting the attention of IOC's for the latest big discoveries. Annual

conferences or competition contests between the students of East African Universities should also be held.

- iv. East African Universities and colleges should collaborate and work jointly with employers in the oil and gas industry to develop curriculum, or provide materials and equipment for students to engage in hands-on experiential learning. Partnership between colleges and oil and gas employers in the development and upgrading of curriculum will ensure that the programs offered at colleges are aligned with the oil and gas industry needs and will result in performance improvement in the workforce. For example, oil and gas service providers donate free software for seismic data processing as CGG Seismic service provider has established seismic processing unit with Geovation processing software for Sultan Qaboos University in Oman and other universities in Africa and different areas of the world.

2. Industry Perspective on Addressing Skills Shortage

Dr. Mohamed Mahgoub, a geophysics specialist, pointed out that developing young professionals as well as experienced workers could save companies and countries hundreds or even thousands of dollars.

“Our young professionals are less proficient with the latest technology being used in the oil and gas industry. So, oil and gas companies spend hundreds of thousands

dollar to pay seismic contractor to do seismic acquisition design. But companies could save thousands of dollars paid to seismic providers if they train geologists, geophysicists or engineers to use software to design using their laptop and right away from his office,” says Dr. Mohamed Mahgoub, a geophysics expert in the Gulf Countries.

So, training and developing young professionals is the key to saving money, addressing recruitment difficulties and optimizing resources.

The simple truth is that training and developing local capacity in the oil and gas industry is not just providing texts or thorough ideas, distributing colorful training documents to put them on shelves and to have them practiced afterward. Training is not bringing examples from the Gulf of Mexico to develop people; they live around the Indian or Atlantic Ocean in Eastern or Western part of our continent. Training should help the trainees to solve the issues they face in their territory if they do have challenges of East African onshore and offshore.

Moreover, training and development of the young professionals and even of the highly experienced workers to deal with such industrialization era in unconventional ways is extremely important. The way to move the industry professionals from just users and followers to expat experts to professional independent focal point will

produce local leaders of the oil and gas industry in future, and they will be able to lead the industrialization phase execution accordingly. Optimum training and development could save a huge amount of money spending from the national GDP to bring expatriates to lead the projects either for oil and gas or to plan for the proposed industrialization vision.

Developing local capacities is the key to secure enough money and optimize resources.

Conclusion

Due to the introduction and growth of new technology in the oil and gas industry, and exciting and new projects in the East Africa oil and gas industry, it is imperative to modernize our human capacity development framework which is important in increasing local hands to lead the industry in their home country which will save a lot of money. Also, increasing their experience and creativity to come up with novel solution to help in potential big exploration, development and extraction of the oil and gas resources.

East African oil and gas industry doesn't own technology. It also does not own finance. But the region has bright people in abundance. And with oil price being low for a while, it is time we had new revolutionary in training and development of local capacity and move people from just users or just part of the team of project follow up to be the project leaders and project focal points who can make bigger contributions to their co-workers and the organization, and ultimately stimulate industrial and economic development.

The great Tanzanian nation and the East African region do not only have the right to say "I have a dream" of Martin Luther King's ever famous quote but also to use Obama's quote "Yes We Can" for having land rich in resources and patriotic loving care of their beloved Tanzanians and East Africans.

About the Author

Hello, Dear Reader. My name is Hussein Boffu.

I'm here for one reason, to raise the performance standards of work competence of the East African oil and gas industry to become world-class and internationally competitive for the benefits of the business communities and countries.

In 2015, frustrated by lack of availability of information on the East African oil and gas industry and the tool to analyze the information, I started Tanzania Petroleum (TanzaniaPetroleum.com), which is a performance improvement platform.

I believe that every new step I take helps the industry and the community to become much better and more productive.

We provide great benefits to organizations and professionals like training, industry events, corporate event management, business promotion and consultation on any issue related to the oil and gas industry.

Feel free to contact him through

Hussein.boffu@tanzaniapetroleum.com /+255655376543 if you have any inquiry.